California Environmental Protection Agency

Air Resources Board

Proposed Regulation to Implement the California Cap-and-Trade Program

PART I

Volume I

Staff Report: Initial Statement of Reasons

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State of California

California Environmental Protection Agency
AIR RESOURCES BOARD
Office of Climate Change

STAFF REPORT: INITIAL STATEMENT OF REASONS PROPOSED REGULATION TO IMPLEMENT THE CALIFORNIA CAP-AND-TRADE PROGRAM

PART I
Volume I

Public Hearing to Consider the Proposed Regulation to Implement the California Cap-and-Trade Program

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Executive Summary

Background

Climate change is one of the most serious environmental threats facing the world today, and California is already feeling its effects. The goal of the California Global Warming Solutions Act of 2006 (AB 32, Nuñez, Chapter 488, Statutes of 2006) is to reduce greenhouse gas (GHG) emissions in a cost-effective manner. The California *Climate Change Scoping Plan* lays out a comprehensive program to scale back our greenhouse gas emissions to 1990 levels by 2020, reduce our dependence on fossil fuels, stimulate investment in clean and efficient technologies, and improve air quality and public health. Achieving these goals is best accomplished through a coordinated set of programs that employ strategies tailored to specific needs, including market-based compliance mechanisms, performance standards, technology requirements, and voluntary reductions.

The cap-and-trade program is a key element of this overall strategy. It creates a limit on the emissions from sources responsible for 85 percent of California's GHG emissions, establishes the price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy, and affords covered entities flexibility to seek out and implement the lowest-cost options to reduce emissions. The cap-and-trade program is designed to work in concert with other measures, such as standards for cleaner vehicles, low-carbon fuels, renewable electricity and energy efficiency. The program will also complement and support California's existing efforts to reduce criteria and toxic air pollutants.

The cap-and-trade program and the broader Scoping Plan effort provide a model for action that can be taken at the federal level and by other states individually and through regional action. By moving forward, California is both positioning our economy to benefit as climate action is taken internationally and catalyzing action throughout the country and the world.

The California cap-and-trade program has been designed to be part of a regional trading system. The program design allows linkage with programs established by partner jurisdictions in the Western Climate Initiative (WCI) to create a regional market system. The goal of the regional program is to enhance individual jurisdictions' actions through collective action to reduce GHG emissions. On par with California, the regional cap-and-trade program would cover sources that encompass nearly 90 percent of the region's emissions.

Linking with programs established by our WCI partners has several advantages for California. The reduction of greenhouse gas emissions that can be achieved collectively by the WCI partner jurisdictions are almost double what can be achieved through a California-only program. The broad scope of a WCI-wide market will also provide greater flexibility to California businesses by offering a wider range of emissions reduction opportunities and greater market liquidity.

This report presents staff's basis and rationale for the proposed regulation to establish the California Cap-and-Trade Program. Staff developed this proposed regulation to advance California's GHG reduction goals, as required by AB 32. This regulation was developed through an extensive public process involving multiple stakeholders; local, state, and federal agencies; and the public.

Cap-and-Trade Program Objectives

In the cap-and-trade program, ARB will place a limit, or cap, on GHG emissions by issuing a limited number of tradable permits (called *allowances*) equal to the cap. Over time, the cap will steadily decline. The cap is enforced by requiring each source that operates under the cap to turn in one allowance or offset credit for every metric ton of carbon dioxide equivalent ($MTCO_2e$) that it emits.

Because these allowances are tradable, individual emitters do not have specific emission limits. By establishing a limit for the program overall rather than for individual sources, the cap-and-trade program gives sources flexibility to make the most cost-effective choices about when and how to reduce emissions. The price of allowances will be established by the marketplace based on supply and demand. Allowance prices efficiently inform consumption and investment decisions and stimulate the development of new technological solutions that can enable lower-cost reductions now and in the future. For some in the program, implementing new, low-emitting technologies may be relatively inexpensive. Those participants will buy fewer allowances or sell surplus allowances to those that face higher costs. A participant will choose to buy more allowances when the cost of an allowance is lower than the cost of reducing its emissions. By giving participants a financial incentive to control emissions and the flexibility to determine how and when to do so through the ability to trade allowances, a three-year compliance period, and other provisions such the ability to bank allowances, emissions are reduced to the capped level while minimizing the cost of emissions reductions.

In addition to allowances, a limited number of credits for emissions reductions from sources that are outside the cap coverage, called *offsets,* can be used for compliance with the program. At the end of each compliance period, covered entities are required to turn in, or surrender, enough allowances and offsets to match their emissions during this time period.

Major Provisions of the Proposed Regulation

The following elements constitute the basic components of the proposed cap-and-trade program.

Scope

The cap-and-trade program will cover the major sources of GHG emissions in the State, including refineries and power plants, industrial facilities, and transportation fuels. Starting in 2012, the program will cover electricity generation,

including imports, and large industrial sources and processes with annual GHG emissions at or above 25,000 $MTCO_2e$. The program will expand in 2015 to include fuel distributors to address emissions from combustion of transportation fuels and combustion of natural gas and propane at sources not covered in the first phase of the program.

The proposed regulation addresses emissions of carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).

The Cap

The limit on GHG emissions—the program "cap"—determines the environmental effectiveness of the cap-and-trade program. If the cap is not set at a stringent enough level to reduce GHG emissions, the emissions-reduction goal of the program may not be met even if all sources comply with the program requirements. Staff has designed the program to be sufficiently stringent to spur GHG emissions reductions to achieve AB 32 goals.

The program cap determines the number of total allowances issued by ARB. At the start of the program, ARB will issue allowances for each year consistent with the declining level of the cap. The initial cap level in 2012 will be set at the level of emissions expected in 2012 from sources covered at the start of the program. In 2015, the program scope expands to include the distributed use of fuels, and the cap increases to include emissions from those fuels based on the level of emissions expected in 2015 from the newly covered fuels. The cap will decline to a level in 2020 designed to ensure that emissions decline over time and California achieves the AB 32 GHG emissions target in 2020.

Allowance Distribution and Trading

ARB plans to distribute allowances through a mix of direct allocation and auction. At the beginning of the program, most allowances will be distributed for free to help provide a soft start for the program. The allocation system is designed to reward those who have taken early action and have invested in energy efficiency and GHG emissions reductions and will encourage continued investment in efficiency and clean energy in the future. Because the allowances can be traded, the program provides incentives for those with the most cost-effective reduction opportunities to reduce emissions quickly.

Covered entities are not the only entities that may hold and trade allowances in the cap-and-trade program. Other entities may be eligible to participate voluntarily in the program, including financial institutions, brokers, offset developers, and those who may want to voluntarily retire allowances. An entity that holds an allowance may surrender it to comply with its obligation under the regulation, bank it for future use, sell it to another entity, or ask ARB to retire it.

Because not all allowances will be distributed for free, the program includes creation of an auction system that will allow for broad participation and minimize opportunities for manipulation. Over time, the program will transition toward a greater reliance on auctioning, which will help maximize incentives for continued investment in clean and efficient technologies and provide revenue that can be reinvested for public benefit.

Cost Containment Mechanisms

The flexibility afforded by a cap-and-trade program helps ensure that the needed GHG emissions reductions are cost-effective. Key elements of the program have been designed to optimize cost-effectiveness, including: (1) three year compliance periods, which smooth year-to-year variations in emissions levels; (2) allowance banking, which allows participants to hold allowances and use them for compliance in a later period; (3) offsets, which offer additional low-cost emissions-reduction opportunities; and (4) the establishment of an allowance reserve account, which allows covered entities access to allowances at set prices as a hedge against higher costs. A key consideration in designing these cost-containment mechanisms is to reduce compliance costs without compromising the environmental goals of the program.

Reporting

The cap-and-trade program will rely on the Mandatory Reporting Regulation (MRR) as the primary mechanism for emissions reporting. Revisions to the MRR are being proposed by ARB staff concurrently with the proposed cap-and-trade regulation. These revisions are intended to align California's reporting requirements with the federal reporting rules recently enacted by the U.S. Environmental Protection Agency (U.S. EPA), and to ensure that the information collected by those covered by the cap-and-trade program is of sufficient quality to support the program.

Additional registration and reporting requirements are established in the cap-and-trade regulation for those who hold allowances or offset credits, and for other participants in the program, including offset registries and offset project developers. These requirements have been designed to ensure transparency and effective public disclosure while also minimizing the administrative burden on those covered by the regulation and on ARB staff.

Offsets

Under the cap-and-trade program, covered entities may use a limited amount of offset credits to satisfy a portion of their compliance obligation. Offsets are tradable credits that represent verified GHG emissions reductions made in areas or sectors not covered by the cap-and-trade program. One offset credit is equal to one metric ton of GHG emissions. In addition to providing compliance flexibility, the inclusion of offsets in the program will support the development of innovative

projects and technologies from sources outside capped sectors that can play a key role in reducing emissions both inside and outside California.

Offsets must meet rigorous criteria that demonstrate that the emissions reductions are real, permanent, verifiable, enforceable, and quantifiable. To be credited as an offset, the action or project must also be in addition to what is required by law or regulation or would otherwise have occurred. Under the California cap-and-trade program, ARB will adopt specific compliance protocols for different project types, and will issue or recognize offset credits based on those adopted protocols that can be used for compliance purposes.

Offset Protocols

ARB staff reviewed four offset protocols and recommends that they be approved by the Board as part of this regulatory package: (1) the Urban Forest Projects Protocol; (2) the U.S. Ozone Depleting Substances Projects Protocol; (3) the Livestock Manure (Digester) Projects Protocol; and (4) the U.S. Forest Projects Protocol. These protocols are based on those initially developed by the Climate Action Reserve (CAR) and its predecessor, the California Climate Action Registry (CCAR). The individual protocols are reviewed in Parts II through V of this rulemaking package, and each Part includes its own staff report and recommendations. To help ensure an adequate supply of high-quality offsets, staff anticipates that additional protocols will be reviewed and brought to the Board for consideration in 2011 and beyond.

Sector-Based Offset Credits

Achieving the goal of climate stabilization will require a commitment to work at the international level to reduce GHG emissions globally. Sector-based crediting can increase participation in international efforts to control GHG emissions and address concerns about competitiveness and emissions leakage. Sectoral crediting can mobilize private and public resources, enabling the host government to reduce GHG emissions and transition toward a low-carbon economy. California has been working with strategic partners in the forest and cement sectors to explore sectoral crediting approaches to international action. The proposed regulation anticipates future inclusion of sectoral credits based on continuing work with international partners.

Compliance and Enforcement

For each compliance period, each covered entity is required to surrender a sufficient number of compliance instruments (allowances and offset credits) to cover its total GHG emissions during that compliance period. A portion of the allowances must be provided annually, with the remaining allowances due following the end of the compliance period. Once allowances and offsets are surrendered they are permanently retired by ARB.

A robust enforcement program will play a vital role in the success of the cap-and-trade program by discouraging noncompliance and by deterring and punishing fraudulent activities. It also will play a vital role in the success of the cap-and-trade program by discouraging gaming of the system and by deterring and punishing fraudulent activities. Staff designed the proposed regulation to remove any financial incentive for noncompliance by requiring that additional allowances be surrendered for excess emissions not covered by the compliance deadline. Staff will also ensure that the requirements are enforced fairly, and that the enforcement process is transparent.

Linkage to Other Greenhouse Gas Emissions Trading Systems

Linkage involves the reciprocal acceptance of compliance instruments issued by another system. The proposed regulation includes a framework for California to link its cap-and-trade program to other emissions trading systems of similar scope and rigor. Linkage can expand the coverage of the cap-and-trade program to include emissions-reduction opportunities for sources covered in another program.

Staff has designed the cap-and-trade program to allow California to link with the programs developed by WCI Partner jurisdictions that are consistent with the WCI Detailed Program Design. The proposed cap-and-trade regulation does not currently include linkage to other programs, though staff anticipates bringing recommendations to the Board in 2011 for possible linkage with the programs being developed by the four other WCI Partners that are currently working to implement programs by January, 2012: New Mexico, British Columbia, Quebec, and Ontario. Each program will undergo a case-by-case analysis by staff as part of a formal rulemaking process, and the Board will need to approve regulatory amendments reflecting the linkage with a particular program before it can take effect.

Program Monitoring

ARB will closely monitor whether, over time, the cap-and-trade program is meeting the objectives set forth in AB 32. These objectives include beneficial outcomes that should be maximized and adverse consequences that should be minimized or avoided. Much of the monitoring information ARB will need is collected as a part of normal program management, such as emissions data reports from the Mandatory Reporting Regulation, allowance price and use, or offset project annual reports. To supplement these sources, and to ensure that ARB has adequate information to identify whether the objectives are being met, ARB will require specified information from relevant expert sources, including the Offset Project Registries and Air Districts, and solicit additional information from stakeholders, including the public. Monitoring for potential emissions and economic leakage will be emphasized.

Using the results of monitoring, ARB will regularly evaluate (at a minimum once every three-year compliance period) whether the objectives identified by statute are being achieved. Periodic evaluation will be coordinated with other actions and information collection occurring at the end of compliance periods.

ARB will conduct its evaluation sufficiently in advance of the end of each compliance period to allow ARB sufficient time adjust the cap-and-trade program, if warranted, before commencement of the next compliance period. If ARB determines during its periodic review that the cap-and-trade program is not achieving the objectives as defined by AB 32, or if substantial, unanticipated adverse economic or environmental effects are identified (e.g., substantial leakage), ARB will revise the operation and/or design of the program accordingly.

Evaluation of the Regulation

Staff analyzed four alternatives to the proposed cap-and-trade regulation: (1) a "no project" alternative; (2) additional source-specific regulations; (3) a carbon fee; and (4) linking California's cap-and-trade program to a future federal cap-and-trade program. In evaluating these alternatives, ARB staff found that none were as or more effective than the implementation of a cap-and-trade program in carrying out the goals of AB 32. In addition, staff analyzed a number of specific alternatives to the design of the cap-and-trade program. In recommending the specific design included in this proposal, staff balanced the need to maintain the environmental integrity of the program, to retain a level of flexibility to help ensure cost-effectiveness, and to consider the potential for co-benefits.

This proposal has been evaluated for possible environmental impacts consistent with the requirements of the California Environmental Quality Act (CEQA). The environmental analysis also identifies potential environmental benefits associated with the proposed cap-and-trade program. The analysis identified potentially significant impacts related to air quality and to activities that disturb the ground, such as construction projects or site preparation for tree planting to establish offset credits. Based on the information available, such impacts are highly unlikely, but are nonetheless possible. ARB's adaptive management program will include review of required reports and solicitation of comments from the public and stakeholders, including in-state and out-of state resource management agencies with jurisdiction over the forestry-related offset projects.

Emissions Assessment

Air pollutant emissions that contribute to ozone and particulate matter pollution (i.e., criteria pollutants) and toxic air pollutants are "co-pollutants" often associated with GHG emissions from combustion processes. AB 32 requires ARB to consider the co-pollutant benefits of reducing GHGs. California's air pollution control programs for criteria and toxic pollutants will continue to significantly reduce emissions and health risk into the future. Technology improvements and enhanced energy efficiency resulting from the cap-and-trade

program can further reduce these co-pollutants, providing public health benefits on both a regional and local basis in addition to the benefits of reducing GHG emissions.

For market based-regulations like the cap-and-trade program, AB 32 requires ARB to consider the potential for direct, indirect, and cumulative emissions impacts, including localized impacts. Staff evaluated potential emissions impacts statewide and in four community case studies. The assessment focuses on the potential criteria and toxic pollutant emissions impacts from the industrial sources covered by the program. However, the assessment does not include criteria pollutant and toxic emissions reductions that the cap-and-trade program is expected to provide from transportation fuels and commercial and residential gas use, in addition to those likely to occur at industrial facilities.

Due to the inherent flexibility of the cap-and-trade regulation, as well as the overlay of other complementary greenhouse gas reduction measures, it is difficult to predict the decisions that individual facilities may make in any given community. However, based on the available data, current law and policies that control industrial sources of air pollution, and expected compliance responses, ARB believes that emissions increases at the statewide, regional, or local level due to the regulation are not likely. ARB seeks to ensure that the cap-and-trade program, as it operates over time, avoids and minimizes all instances of localized air quality impacts. ARB will use information collected through the mandatory reporting regulation, the cap-and-trade regulation, the industrial efficiency audit, and other sources to evaluate how facilities are complying with the cap-and-trade regulation. ARB will also solicit information from local air districts regarding permit modifications and new permit applications for covered sources. ARB will evaluate data from a variety of sources to determine whether there are any disproportionate impacts to low-income communities or any increases in the emissions of toxic air contaminants or criteria air pollutants resulting from the cap-and-trade program. If unanticipated adverse localized air quality impacts are identified during this periodic review, ARB is committed to promptly developing and implementing appropriate responses.

Economic Analysis

The cap-and-trade program is expected to result in increased investment in efficient buildings and technologies and in advanced fuels. At expected allowance prices ($15 and $30 per metric ton in 2020), these investments would reduce fuel use by 2 to 4 percent in 2020, while economic growth between 2007 and 2020 continues at a rate of 2.3 percent, virtually on par with the projected rate of 2.4 percent. Implementation of the program will, however, shift investment and growth within the overall economy toward those sectors driven by the production of cleaner and more efficient technologies.

Implementing the cap-and-trade program can also help mitigate the economic consequences of continued reliance on fossil fuels. Experience in recent

decades, such as the spike in world oil prices in the summer of 2008, has illustrated the economic costs of volatile energy prices on California's economy. While this report does not attempt to quantify the insurance benefits of reduced dependence on fossil fuels in the face of continued volatility of world energy prices, it does show that California can significantly reduce its dependence on these fuels and, therefore, its vulnerability to future price spikes.

This economic analysis focuses exclusively on the economic effects in California of implementing the cap-and-trade program, and does not consider the avoided costs of inaction. The potential effects of climate change on California that are expected to occur, such as increased water scarcity, reduced crop yield, sea level rise, and increased incidence of wildfires, could cause severe economic impacts. While California has developed a Climate Adaptation Strategy to help alleviate these potential costs, the risk of potentially high economic costs from climate change in California remains real.

Requirements of AB 32

AB 32 calls on ARB to adopt regulations by January 1, 2011, to implement measures to "achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions." AB 32 requires that the reductions be real, permanent, quantifiable, verifiable, and enforceable. AB 32 includes specific standards that apply to regulations that use market-based compliance mechanisms, such as the cap-and-trade program.

Furthermore, AB 32 calls for the Board to "ensure that the greenhouse gas emissions-reduction rules, regulations, programs, mechanisms, and incentives under its jurisdiction, where applicable and to the extent feasible, direct public and private investment toward the most disadvantaged communities in California and provide an opportunity for small business, schools, affordable housing associations, and other community institutions to participate in and benefit from statewide efforts to reduce greenhouse gas emissions."

The proposed regulation was developed in accordance with the requirements of AB 32 and the Staff Report presents supporting details. The following provides a brief response to several of the key AB 32 requirements that have received particular attention during the cap-and-trade rulemaking.

Several AB 32 requirements relate to the potential economic effects of GHG regulations, including direction to minimize costs and maximize the total benefits, and to minimize leakage. Staff has designed the proposed cap-and-trade program, including the allowance allocation system, to minimize the cost of implementation and compliance and to maximize the overall benefits. The allowance allocation system is equitable within and across sectors of the California economy, and its primary reliance on efficiency benchmarks and auction encourages early action to reduce emissions. In addition, the ability to

bank allowances for future use provides an incentive for early action to reduce emissions.

By ensuring that most GHG emissions in California are covered by the program, and that incentives are in place to ensure that the most cost-effective reductions are made, the program design shares the emissions-reduction burden equitably.

Other AB 32 requirements relate to maximizing co-benefits, avoiding disproportionate impacts, considering the potential for emissions impacts, and avoiding emissions increases. Staff has evaluated both the health and economic effects of the proposed program to ensure to the extent feasible that no disproportionate negative impact will occur. The overall health and environmental effects of the regulation are expected to be positive, and the program has been designed to minimize the economic costs of the program, which will minimize the effects on low-income communities.

AB 32 also calls for providing appropriate credit for early voluntary reductions and encouraging early action. ARB staff has recommended a system for distributing allowances in the industrial sector that will primarily rely on the relative efficiency of facilities for any free allocation. This approach rewards those who have already invested in emissions reductions. In addition, a portion of the allowances will be auctioned, and those who have taken early action will be less reliant on purchasing allowances at auction. This allowance allocation system provides appropriate credit for those who have taken steps to voluntarily reduce their emissions before the start of the cap-and-trade program. In addition, the ability to bank allowances for future use provides an incentive for early action to reduce emissions. The regulation would also allow existing offset credits generated under early versions of any offset protocols that the Board adopts to be used for compliance as early action offset credits.

Public Process for Cap-and-Trade Regulation Development

ARB staff developed this proposed cap-and-trade regulation through an extensive public process. In 2008, staff discussed the general framework for a cap-and-trade program as part of the development of the Scoping Plan. The Board included the cap-and-trade program as one of the central measures in the Scoping Plan.

Following the Board's adoption of the Scoping Plan, staff held more than 30 public workshops in 2009 and 2010 devoted to developing the cap-and-trade program design in more detail. These meetings allowed stakeholders and the public to discuss and share ideas on the appropriate design of the cap-and-trade program. Staff reviewed hundreds of public comments received from stakeholders and the general public from these workshops. Staff considered these comments in crafting the design of the proposed cap-and-trade regulation.

In November 2009, staff released a conceptual framework for the cap-and-trade program called the Preliminary Draft Regulation (PDR). The PDR combined preliminary regulatory language on the cap-and-trade process and structure, along with narrative text that described significant issues for which specific regulatory language had not yet been developed. In some cases, most notably the allocation sections, placeholders marked where specific language still needed to be developed. Staff released the PDR to maximize the opportunity for public comment and to advance the public dialogue on the proposed structure and content of this key Scoping Plan measure. In response to the PDR, staff received numerous written comments.

Staff also provided regular updates to the Board on the development of the cap-and-trade program, including on allocation and offsets. Staff has also met with individuals, businesses, government representatives, scholars, experts, non-governmental organizations, and general members of the public on a regular basis during the development of this regulation.

Recommendation

Staff recommends that the Board adopt the proposed cap-and-trade regulation. The program is expected to reduce GHG emissions between 18 and 27 $MMTCO_2e$ in 2020, and the flexibility included in the program will ensure that these reductions are cost-effective. By establishing an overall cap on emissions from the major sources in California, the program will also play a critical role in ensuring that the AB 32 emissions target is met by 2020.

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I BACKGROUND AND INTRODUCTION

This Staff Report presents the California Air Resources Board (ARB or Board) staff's basis and rationale for the proposed regulation for the California Cap-and-Trade Program. The cap-and-trade regulation is designed to cost-effectively reduce emissions of greenhouse gases (GHG) by establishing a cap covering approximately 85 percent of the State's GHG emissions and drive investment in cleaner and more efficient technologies to power California's economy. Staff developed this proposed regulation to advance California's GHG reduction goals as required by the California Global Warming Solutions Act of 2006 (AB 32) (AB 32, Nunez, Statutes of 2006, Chapter 488). This introduction describes the structure of the Staff Report and provides background on California's *Climate Change Scoping Plan,*[1] the Western Climate Initiative, and the public process used to develop the cap-and-trade program.

This Staff Report, including the attached appendices, represents the Initial Statement of Reasons (ISOR) for Proposed Rulemaking required by the California Administrative Procedure Act.[2]

Part I of the Staff Report is divided into the following chapters:

- Chapter I. Background and Introduction – Provides background on California's *Climate Change Scoping Plan,* the Western Climate Initiative, and the public process used to develop the cap-and-trade program.

- Chapter II. General Summary of the Proposed Regulation – Discussion of selected design elements of the California Cap-and-Trade Program.

- Chapter III. Overview of the Compliance Offsets Program – Discussion of the design of the compliance offset program including: offset credits issued by ARB, early action offset credits, and sector-based offset credits, including Reducing Emissions from Deforestation and Degradation (REDD).

- Chapter IV. Analysis of Alternatives to the Proposed Regulation – Describes alternatives that were considered for the California Cap-and-Trade Program, and why the alternatives are less effective.

- Chapter V. Compliance Pathway Scenarios – Discusses scenarios and emissions-reduction opportunities that could be achieved by sources covered by the cap-and-trade program.

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[1] Climate Change Scoping Plan: A Framework for Change. Air Resources Board, December 2008. Found at: http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm.
[2] The Administrative Procedure Act, Government Code section 11340 et seq.

- Chapter VI. Environmental Impacts of the Proposed Regulation – Describes potential impacts the proposed regulation may have on the environment, including potential impacts from project-specific activities.

- Chapter VII. Co-Pollutant Emissions Assessment – Describes the public health impacts of the proposed regulation.

- Chapter VIII. Economic Impacts of the Proposed Regulation – Describes the economic impacts of the regulation.

- Chapter IX. Summary and Rationale for the Proposed Regulation – Describes the rationale for developing the rule provisions of the proposed regulation.

- Chapter X. References – Provides a list of references used for development of the Staff Report.

- Appendices include the proposed cap-and-trade regulation and technical appendices, including: cap setting; compliance pathways analysis; allowance price containment; allocation; leakage analysis; and co-pollutant emissions.. They also include the Functional Equivalent Document that provides the environmental assessment required under the California Environmental Quality Act (CEQA) and other documents that serve as supporting documentation for the design and development of the program.

- Parts II through V provide Compliance Offset Protocols and related staff reports.

A. Background

Climate change poses a serious threat to the economic well-being, public health, natural resources, and environment of California. Global warming is projected to have detrimental effects on some of California's largest industries (including agriculture and tourism), increase the strain on electricity supplies, and contribute to unhealthy air.[3] National and international actions are necessary to fully address the issue of global warming; therefore, California's efforts alone will not solve the problem. Action taken by California to reduce emissions of GHGs will encourage other states, the federal government, and other countries to act. By exercising a leadership role, California will also position its economy, technology

[3] Our Changing Climate – Assessing the Risks to California. California Energy Commission. Publication # CEC-500-2006-077, July 2006. Found at: http://www.energy.ca.gov/2006publications/CEC-500-2006-077/CEC-500-2006-077.PDF.

centers, academic and financial institutions, and businesses to benefit from national and international efforts to reduce emissions of greenhouse gases.

The Legislature passed and the Governor signed AB 32 to exercise this leadership role. AB 32 directed ARB to prepare a Scoping Plan outlining the State's strategy to achieve the GHG reduction limit established in the law. The reduction measures to meet the 2020 target are to become operative by 2012 (Health and Safety Code (HSC) §38562(c)).

AB 32 includes several specific requirements for ARB including:

- Identify the statewide level of greenhouse gas emissions in 1990 to serve as the emissions limit to be achieved by 2020 (HSC §38550).
- Adopt a regulation requiring the mandatory reporting of greenhouse gas emissions (HSC §38530).
- Identify and adopt regulations for Discrete Early Actions that could be enforceable on or before January 1, 2010 (HSC §38560.5).
- Prepare and approve a Scoping Plan that identifies direct emissions-reduction measures, alternative compliance mechanisms, market-based compliance mechanisms, and potential monetary and non-monetary incentives to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions by 2020 (HSC §38561).
- Ensure that early voluntary reductions receive appropriate credit in the implementation of AB 32 (HSC §38562(b)(3)).
- Convene an Environmental Justice Advisory Committee (EJAC) to advise the Board in developing the Scoping Plan and any other pertinent matter in implementing AB 32 (HSC §38591).
- Appoint an Economic and Technology Advancement Advisory Committee (ETAAC) to provide recommendations for technologies, research, and greenhouse gas emissions-reduction measures (HSC §38591).

AB 32 also includes a number of specific requirements that ARB must fulfill, to the extent feasible and in furtherance of achieving the statewide GHG emissions limit, before adopting regulations that include market-based mechanisms:

- Consider the potential for direct, indirect, and cumulative emissions impacts, including localized impacts in communities that are already adversely affected by air pollution (HSC §38570(b)(1)).

- Design any market-based compliance mechanism to prevent any increase in the emissions of toxic air contaminants or criteria air pollutants (HSC §38570(b)(2)).

- Maximize additional environmental and economic benefits for California, as appropriate (HSC §38570(b)(3)).

B. California's Climate Change Scoping Plan

The California *Climate Change Scoping Plan* was developed by ARB in coordination with the Climate Action Team and approved by the Board. The Plan lays out a comprehensive program to scale back our GHG emissions to 1990 levels by 2020, reduce our dependence on fossil fuels, stimulate investment in clean and efficient technologies, and improve public health. Effectively achieving these goals is best accomplished through a mix of complementary strategies that combine market-based compliance mechanisms, direct regulations, and voluntary actions.

The cap-and-trade program is a key element of this overall strategy. It establishes an overall limit on the emissions from sources responsible for 85 percent of California's GHG emissions, establishes the price signal needed to drive long-term investment in cleaner and more efficient types of fuels and energy sources, and affords covered entities flexibility to seek out and implement the most cost-effective options to reduce emissions.

As detailed in the Scoping Plan, the cap-and-trade program is designed to work in concert with a number of other complementary measures, such as standards for cleaner vehicles, low-carbon fuels, renewable electricity, and energy efficiency. The rationale for combining a cap-and-trade program with complementary measures was outlined by the Market Advisory Committee, which noted the following in its recommendations to the ARB:

> Before setting out the key design elements of a cap-and-trade program it is important to explain how the proposed emissions trading approach relates to other policy measures. The following considerations seem especially relevant:
>
> - The emissions trading program puts a cap on the total emissions generated by facilities covered under the system. Because a certain number of emissions allowances are put in circulation in each compliance period, this approach provides a measure of certainty about the total quantity of emissions that will be released from entities covered under the program.
>
> - The market price of emissions allowances yields an enduring price signal for GHG emissions across the economy. This price signal provides incentives for the market to find new ways to reduce emissions.

- By itself, a cap-and-trade program alone will not deliver the most efficient mitigation outcome for the State. There is a strong economic and public policy basis for other policies that can accompany an emissions trading system.[4]

C. Western Climate Initiative

The Western Climate Initiative (WCI) is a cooperative effort of seven U.S. states and four Canadian provinces (the "partners") that are collaborating to identify, evaluate, and implement policies to reduce GHG emissions, including the design and implementation of a regional cap-and-trade program. The WCI began in February 2007 with the governors of Arizona, California, New Mexico, Oregon, and Washington, who have since been joined by the premiers of British Columbia, Manitoba, Ontario, and Quebec, and the governors of Montana and Utah. Participation in the WCI reflects each partner's strong commitment to identifying, evaluating, and implementing collective and cooperative actions to address climate change.

1. The WCI Regional Cap-and-Trade Program

The central component of the WCI partner jurisdictions' comprehensive strategy is a flexible, market-based, regional cap-and-trade program that encourages the most cost-effective, reliable alternatives to reduce GHG emissions. The California cap-and-trade program intends to link to the programs established by other regional partner jurisdictions in the WCI to create a regional market system to collectively reduce GHG emissions. Similar to the California target, the regional program would cover sources that encompass about 90 percent of the region's emissions, and when fully implemented, would nearly double the reductions of a California-only program.

The WCI regional cap-and-trade program will consist of each individual jurisdictions' cap-and-trade program implemented through state and provincial regulations. Each partner jurisdiction implementing a cap-and-trade program will issue emission allowances to meet its jurisdiction-specific emissions goal. A regional allowance market is created by the partner jurisdictions accepting each other's allowances for compliance. The allowances can be sold between and among covered entities in linked jurisdictions, as well as by third parties.

Five WCI partner jurisdictions are currently working toward starting their programs in 2012: California, New Mexico, British Columbia, Ontario, and Quebec. These partners represent approximately two-thirds of the total

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[4] Market Advisory Committee. *Recommendations for Designing a Greenhouse Gas Cap-and-Trade System for California*. June 30, 2007. p. 19. Found at: http://www.climatechange.ca.gov/publications/market_advisory_committee/2007-06-29_MAC_FINAL_REPORT.PDF.

emissions in the WCI jurisdictions—a critical mass and a robust market for achieving significant GHG emissions reductions.

2. WCI Cap-and-Trade Program Design

On July 27, 2010, the partner jurisdictions of the WCI released a comprehensive strategy designed to reduce GHG emissions, stimulate development of clean-energy technologies, create green jobs, increase energy security and independence, and protect public health. The Design for the WCI Regional Program[5] is the culmination of two years of work by the partners.

The WCI program design recognizes that variations in jurisdictional authority, regulatory procedures, and administrative requirements will result in different approaches to implementation of a cap-and-trade program. Between now and the planned program start date of January 2012, the WCI partner jurisdictions will take the steps necessary to make regional trading operational. They will also expand their efforts to develop and implement other core policies and programs, such as California's complementary measures, to increase energy efficiency and fuel diversification to reduce GHG emissions. The WCI partner jurisdictions will continue to consult with stakeholders on the development of this regional effort.

D. Public Process for Regulation Development

Staff developed the regulatory proposal for the California cap-and-trade program with significant public input. The public process for the cap-and-trade program began in 2008 with the development of the Scoping Plan. At that time, staff discussed the general cap-and-trade program framework through numerous workshops and public consultations. The final Board-adopted Scoping Plan included the cap-and-trade program as a key element.

Building on the Scoping Plan structure for a cap-and-trade program, staff held more than 30 public workshops in 2009 and 2010. Staff used these workshops to discuss options for the program design with stakeholders who shared their ideas on the design of the program. Staff received and reviewed hundreds of public comments from stakeholders as part of the workshop process. Staff also gave numerous updates to the Board and met regularly with individual stakeholders to discuss their individual concerns and recommendations. As part of the regional effort, staff also participated in the WCI public process to understand the concerns of regional stakeholders.

ARB also received input and advice from the Market Advisory Committee and two advisory committees created under AB 32: the Economic and Technology

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[5] *Design for the WCI Regional Program.* Western Climate Initiative, July 27, 2010. Found at: http://westernclimateinitiative.org/component/remosotory/general/program-design/Design-for-the-WCI-Regional-Program/.

Advancement Advisory Committee (ETAAC) and the Environmental Justice Advisory Committee (EJAC). In addition, in May 2009, Cal/EPA Secretary Adams and ARB Chairman Nichols created the Economic and Allocation Advisory Committee (EAAC) to assist ARB in developing the cap-and-trade program. This panel of economic, financial, and policy experts was asked to evaluate various cap-and-trade allocation strategies and to review staff's Updated Economic Analysis of California's Climate Change Scoping Plan.[6] Staff has carefully considered the input from these committees during the program's development.

In November 2009, staff released a conceptual framework for the cap-and-trade program called the *Preliminary Draft Regulation (PDR).* Staff held a workshop on the draft in December 2009. The PDR contained preliminary regulatory language on the cap-and-trade process and structure, accompanied by narrative text that described significant issues for which specific regulatory language had not yet been developed. The primary purpose of releasing the PDR was to maximize the opportunity for public comment and to advance the public dialogue on the proposed structure and content of this key Scoping Plan measure. In response to the PDR, staff received over 130 written comments that were considered in the development of this staff proposal.

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[6] *Updated Economic Analysis of California's Climate Change Scoping Plan: Staff Report to the Air Resources Board.* March 24, 2010. http://www.arb.ca.gov/cc/scopingplan/economics-sp/updated-analysis/updated_sp_analysis.pdf (accessed September 23, 2010).

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II GENERAL SUMMARY OF PROPOSED REGULATION

A. General Overview of Proposed Cap-and-Trade Program

Under AB 32, California must reduce greenhouse gas (GHG) emissions to 1990 levels by 2020. Cap-and-trade is one of the key measures that California will employ to reduce emissions and drive long-term investment in cleaner and more efficient technologies to power the State's economy. As proposed here, the cap-and-trade program would establish a firm cap covering about 85 percent of the State's GHG emissions and allow trading of allowances to ensure cost-effective emissions reductions.

The cap-and-trade program will cover the major sources of GHG emissions in the State, including refineries and power plants, industrial facilities, and transportation fuels. The program will impose an enforceable emissions cap beginning in 2012 that will steadily decline over time. The State will distribute allowances, which are tradable permits, equal to the cap. Sources under the cap will need to turn in allowances equal to their emissions at the end of each compliance period. Sources that aggressively reduce their emissions can trade their surplus allowances to firms who find it more expensive to reduce their emissions. In the early stage of the program, most allowances will be distributed for free to provide a smooth transition into the program, allowing those covered by the program to focus on investing in emissions reductions and cleaner technologies, and limiting any concerns about competitiveness and emissions leakage.

Under the cap-and-trade program, offset credits can be used by covered entities to meet a portion of their compliance obligation. An *offset* is a credit that represents a reduction of greenhouse gases resulting from an activity that can be measured, quantified, and verified. Each offset credit represents a specific quantity of emissions reductions from a source not directly covered by the cap-and-trade program.

Implementation and enforcement of the cap-and-trade program will be key in ensuring that California meets its AB 32 goals. The proposed regulation includes strict rules for reporting emissions and trades, with substantial penalties for violations. Transparency in the trading process is important to avoid market volatility and manipulation.

This section provides a high-level overview of the elements of the proposed cap-and-trade program. Each design element is discussed in more detail later in this Chapter.

1. Cap-and-Trade

In the proposed program, a limit, or cap, is put on the amount of GHGs that can be emitted by all covered sectors. The total number of allowances created is equal to the cap set for cumulative emissions from all the covered sectors. In

addition to allowances, credits for a limited amount of emissions reductions from sources that are outside the cap coverage, called *offsets*, will be allowed for compliance. The use of offsets will allow emissions in the capped sectors to slightly exceed the allowances issued, though these additional emissions from capped sectors will be matched by emissions reductions that result from offset projects. The term *compliance instrument* covers both allowances and offsets. These compliance instruments may be traded among entities. At the end of each three-year *compliance period*,[7] covered entities are required to turn in, or *surrender*, enough compliance instruments to match their emissions during this time period. Each allowance equals one metric ton of carbon dioxide equivalent. Since the program includes some GHGs (e.g., methane) that are more effective at trapping heat than carbon dioxide is, all emissions are measured in units relative to the heat-trapping potential of carbon dioxide, or CO_2e; the "e" standing for "equivalent."

The cap-and-trade program puts a price on emitting greenhouse gases. This price provides incentives for GHG emissions reductions and innovation. It can stimulate reductions for all covered sectors without requiring individual regulations for all GHG emissions. Pricing GHGs in this way ultimately creates a market for finding the most cost-effective emissions reductions. Providing entities with the flexibility to find the most cost-effective reductions lowers the program's overall cost. Creating a market provides more flexibility than direct regulation can, and it also provides incentives that can spur local investment and the use of green technologies.

2. Fundamental Elements of the Cap-and-Trade Program

The following elements constitute the basic components of the proposed cap-and-trade program.

a. Scope

The proposed regulation phases sectors into the program. Under this phased approach, entities in the following sectors will be covered in the program according to the following timelines:

Starting in 2012 (first compliance period):

- Electricity generation, including electricity imported from outside California.
- Large industrial sources with GHG emissions at or above 25,000 metric tons of carbon dioxide equivalent ($MTCO_2e$).

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[7] A *compliance period* is the length of time for which covered entities must submit compliance instruments equal to their verified emissions.

Starting in 2015 (the second compliance period), the program expands to include fuel distributors in order to cover emissions associated with:

- Combustion of gasoline, diesel, natural gas, and propane from sources with emissions below 25,000 $MTCO_2e$, including all commercial, residential, and small industrial sources.

- Fuels used for transportation.

All sectors listed above will be covered through 2020.

b. The Cap

The limit on GHG emissions—the *cap*—is a critical part of the cap-and-trade program design because it determines the number of total allowances ARB issues. The cap is set in the proposed regulation and consists of annual cap numbers, also referred to as "budgets." Staff included annual numbers through 2020 in the proposed regulation to allow entities that have a compliance obligation to know how many allowances will be available from 2012 through 2020.

The initial cap level in 2012 will be set at the level of emissions expected from covered sources for that year—at 165.8 million $MTCO_2e$ ($MMTCO_2e$). The cap then declines starting in 2013 until 2015. In 2015 the cap will be expanded to include GHG emissions from fuel suppliers. This expansion is based on the level of GHG emissions expected from the covered fuels for the year 2015, resulting in a cap for 2015 of 394.5 $MMTCO_2e$. The cap will then continue to decline from 2015 to 2020.

The level of the cap is critical to the environmental effectiveness of the cap-and-trade program. If the cap is not set at a stringent enough level to drive GHG emissions-reduction activities, the environmental goals of the program may not be met even if all sources comply with program requirements. Staff has designed the program to be sufficiently stringent to spur GHG emissions reductions to achieve AB 32 goals. Staff has set the cap for 2020 at 334 $MMTCO_2e$, which is designed to allow California to achieve the AB 32 target in 2020.

c. Allowances

As discussed previously, an allowance is equal to one metric ton of CO_2e. ARB will issue a total of approximately 2.7 billion allowances for the cap-and-trade program through the year 2020. Annual allowance budgets for calendar years 2012–2020 are established in the proposed regulation, so that the total number of allowances issued in each year through 2020 are known. At the end of a compliance period, each covered entity is required to surrender allowances (and if it elects, a limited amount of offsets) equal to its total GHG emissions during that compliance period. ARB will also require entities to surrender compliance instruments to match a portion of their reported emissions each year during the

three-year compliance period to reduce the risk of noncompliance at the end of the three-year period. When compliance instruments are surrendered, ARB will permanently retire them.

Covered entities are not the only entities that may hold and trade allowances in the program. Entities in covered sectors with emissions less than 25,000 $MTCO_2e$ may voluntarily elect to become covered entities. Other non-covered entities may be eligible to participate voluntarily. Some examples of these non-covered entities include financial institutions or brokers, offset developers, and those who may want to obtain and voluntarily retire allowances. Once an entity holds an allowance, it can: (1) surrender it to comply with an obligation under the regulation: (2) bank it for future use; (3) trade it to another entity; or (4) ask ARB to retire it.

Staff proposes to create a gradual transition into the program through the design of the allocation system. ARB will rely primarily on free allocation at the start of the program to minimize near-term costs to California consumers and businesses and to minimize emissions leakage. The allocation design will reward those who have invested in energy efficiency and GHG emissions reductions, and will encourage continued investment in clean and efficient technologies in the future.

The outset of the program will include a small direct auction that includes a consignment feature for allowances allocated to electricity distribution utilities. Staff designed an auction program that will allow for broad participation by diverse market players and minimize the chances for manipulation. The auction is set up in a way to ensure that allowances go to those market participants that place the highest value on them.

d. Cost Containment Mechanisms

The proposed cap-and-trade program includes a number of mechanisms designed to minimize the costs of reducing GHGs without compromising the environmental integrity of the program. Some of the mechanisms that staff proposes in the cap-and-trade regulation are three-year compliance periods, banking, offsets, the Allowance Price Containment Reserve, and linkage to other trading systems.

i. Three-Year Compliance Period

A number of significant sources of California emissions are subject to significant year-to-year variations—for example, electricity sector emissions increase in low water years as hydropower generation is replaced with natural gas generation. For this reason, the proposed program has been designed with a three-year compliance cycle to help smooth out these annual variations, and to provide sources with greater flexibility to reduce emissions.

ii. Banking

In a cap-and-trade program, banking allows participants to hold spare allowances and use them for compliance in a later period. The ability to bank allowances

provides an incentive for covered entities to make early reductions since the declining cap could push allowance prices higher over time. Staff proposes to allow banking of allowances without restriction.

iii. Offset Credits

Under the proposed program, covered entities may use offset credits to satisfy a portion of their compliance obligation. In addition to providing compliance flexibility, the inclusion of offsets in the program will support the development of innovative projects and technologies from sources outside capped sectors that can play a key role in reducing emissions both inside and outside California.

Offsets must meet rigorous criteria that demonstrate that the emissions reductions are real, permanent, verifiable, enforceable, and quantifiable. To be credited as an offset, the action or project must also be additional to what is required by law or regulation or would otherwise have occurred. Under the program, ARB will issue or recognize an offset credit that could be used by a covered entity instead of turning in an allowance for the equivalent amount of CO_2e emitted.

The proposed program imposes a limit on the amount of offsets that an individual covered entity can use for compliance. Allowing a limited number of offsets into the program provides benefits and ensures that some GHG emissions reductions occur within the sectors covered by the cap-and-trade program. The proposed program includes provisions that would allow a maximum of 232 $MMTCO_2e$ of offsets through the year 2020. This limit will be enforced through a limit on the use of offsets by an individual entity equal to eight percent of its compliance obligation. Combined with the Allowance Price Containment Reserve, this limit ensures that a majority of reductions from the program come from sources covered by the program at expected allowance prices, while use of the Reserve will relax that constraint if prices rise.

iv. Allowance Price Containment Reserve

Staff proposes to establish an Allowance Price Containment Reserve (the *Reserve*). The Reserve is an account that is filled with a specified number of allowances removed from the overall cap at the beginning of the program. Covered entities may purchase reserve allowances at specified prices during direct quarterly sales. Covered entities gain flexibility through access to the Reserve if prices are high or entities expect prices to be high in the future. Staff proposes that the Reserve be filled with 123.5 million allowances out of the total of approximately 2.7 billion issued for the years 2012 to 2020.

To ensure that allowance prices do not get too low to stimulate emissions reductions, the proposed regulation establishes a price floor at the auction of $10 per metric ton. Allowances that are unsold at auction will be added to the Reserve. This may happen if not all allowances are sold at the price floor of $10.

v. Linkage to Other Greenhouse Gas Emissions Trading Systems

Linkage is the reciprocal acceptance of compliance instruments issued by another system. California could decide to link its cap-and-trade program to other emissions trading systems of similar scope and rigor, and has been working with our WCI partners to create the framework for a regional system of linked programs. Linkage can expand the coverage of the cap-and-trade program to include emissions-reduction opportunities for sources covered in another program. The proposed regulation establishes a framework for linkage. Each program considered for linkage would by subject to Board action, and will undergo a case-by-case analysis by staff as part of a formal rulemaking process.

Although the regulation does not propose to link to any programs at this time, four programs are candidates for linkage before the 2012 start date. Currently four other WCI partners—New Mexico, British Columbia, Quebec, and Ontario—are working to implement cap-and-trade programs consistent with the Design for the WCI Regional Program by January 2012. Linking to WCI partners has several advantages for California. The reduction of GHG emissions that can be achieved collectively by the WCI partner jurisdictions are approximately double what can be achieved through a California-only program. The broad scope of a WCI-wide market will provide additional opportunities for reduction of emissions, therefore, providing greater market liquidity and more stable carbon prices within the program.

California and other WCI partners have also been participating in the Three Regions collaborative process with representatives from the jurisdictions in the Regional Greenhouse Gas Initiative and the Midwestern GHG Reduction Accord. The Three Regions have joined in a cooperative effort to share experiences in the design and implementation of regional cap-and-trade programs, inform federal decision making on climate change policy, and explore the potential for further collaboration among the three regional programs in the future.

e. Program Implementation

Assuming the design of the cap-and-trade program is approved by the Board, significant work will be needed to implement the regulation. Two primary areas that will require attention are finalizing the details of the allocation system for allowances, and designing and implementing a market tracking system. ARB staff is working closely on both efforts with our partners in the WCI, since coordinated approaches to allocation and the tracking system will simplify linking the individual programs into a regional market system. ARB staff believes that it is important for California to start its program in conjunction with our WCI partners.

f. Compliance and Enforcement

A robust enforcement program will play a vital role in the success of the cap-and-trade program by discouraging gaming of the system and deterring and punishing fraudulent activities. One allowance is needed to cover one metric ton

of a covered entity's emissions, if they are turned in by the compliance deadline. If an entity does not meet the compliance deadline, it will need to surrender additional allowances. Staff designed the proposed regulation to remove, to the extent possible, financial incentives for noncompliance and to make sure that every metric ton of GHG emitted is covered by a valid compliance instrument.

To develop the enforcement program for cap-and-trade, staff consulted with legal and enforcement staffs from state and federal agencies to gain insight in this area. These agencies included the California Environmental Protection Agency, California Attorney General's Office, the California Energy Commission, the California Public Utilities Commission, the California Department of Water Resources, United States Department of Justice, the United States Securities and Exchange Commission, and the United States Commodities and Futures Trading Commission. In addition, staff consulted with academic institutions including UC Berkeley's Center for Law, Energy, and the Environment and legal scholars from other universities.

B. Reporting Requirements

The Mandatory Greenhouse Gas (GHG) Reporting Regulation (MRR) appears in Subchapter 10, Article 2, sections 95100-95199, title 17, California Code of Regulations. This regulation is a set of rules that establishes who must report GHG emissions to ARB and sets forth the requirements for monitoring, calculating, reporting, and verifying those emissions. The MRR established reporting requirements for electricity and the largest stationary sources of GHG emissions in California. Changes are needed to the existing MRR because the cap-and-trade program covers more than large stationary sources and includes electricity importers, transportation fuels, and smaller sources of fuel combustion by regulating the providers of these fuels. These changes will also ensure that the reported data are rigorous enough to support a trading program. These amendments and the MRR Initial Statement of Reasons will be considered by the Board in a separate rulemaking at the same time as the cap-and-trade regulation.

The proposed MRR amendments are also intended to align California's requirements with new federal requirements. On October 30, 2009, the United States Environmental Protection Agency (U.S. EPA) adopted its final Mandatory Reporting Rule[8] (the "EPA rule") for GHG emissions.

The revised MRR requirements, if adopted by the Board, would first apply to reporting in 2012 for 2011 emissions. Until the new requirements take effect, those entities now subject to MRR requirements will continue to report under the

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[8] U.S. Environmental Protection Agency Final Rule on Mandatory Reporting of Greenhouse Gases. Promulgated by U.S. EPA on October 30, 2009 and July 12, 2010, http://www.epa.gov/climatechange/emissions/downloads09/GHG-MRR-Full%20Version.pdf

current regulation. The following sections briefly summarize the major changes being proposed to the MRR. See the Initial Statement of Reasons and proposed regulatory language for the MRR for more information.

1. Harmonization of MRR with U.S. EPA Requirements and Cap-and-Trade

Since the adoption of California's reporting requirements, the U.S. EPA has adopted federal GHG reporting requirements. ARB is working to harmonize California's reporting requirements with the U.S. EPA rule. Many facilities in California will be subject to both reporting programs. Staff is working toward a unified reporting system to satisfy both state and federal requirements while minimizing duplicative or conflicting reporting obligations for facilities subject to both rules.

In developing harmonized reporting requirements for use in California, staff adhered to the following principles:

1. A California facility should be able to comply with both the MRR and the U.S. EPA rule by following a single set of monitoring, recordkeeping, and reporting requirements.

2. The quantification methodologies must be sufficiently reliable and accurate to be used to support a cap-and-trade program.

The most straightforward way to follow the first principle would be to adopt the U.S. EPA rule without change, but this approach would not adhere to the second principle. As U.S. EPA has acknowledged, the U.S. EPA rule has not been specifically designed to meet the needs of a cap-and-trade program.

In nearly all cases where modification to the U.S. EPA rule was necessary to support the cap-and-trade program, staff included additional requirements in the MRR, without any alterations to the U.S. EPA program. This will allow a facility to still submit a report to California while complying with the U.S. EPA rule. The U.S. EPA rule generally allows a facility to use different tier quantification methodologies. For covered sources in cap-and-trade, the MRR is generally more prescriptive than the U.S. EPA rule by requiring the use of higher tier methods and MRR-specific procedures for missing data replacement. Facilities subject to cap-and-trade requirements will report at the unit level using methods usually consistent with higher-tier options in the U.S. EPA rule, while other facilities may use any method from the U.S. EPA rule.

2. Threshold for Reporting

Entities subject to reporting under the MRR amendments are those with annual emissions equal to or greater than 10,000 $MTCO_2e$. The threshold for entities to be directly included in the cap-and-trade program is annual emissions equal to or greater than 25,000 $MTCO_2e$. Emissions from combustion of eligible biomass-derived fuels must be reported, but do not have a compliance obligation

associated with them in the cap-and-trade program. Staff proposes a lower reporting threshold for several reasons. Reporting down to a threshold of 10,000 $MTCO_2e$ is needed to determine whether the threshold for inclusion in the cap-and-trade program is set at the appropriate level to capture the largest emissions sources. The lower reporting threshold is also required to monitor potential leakage to facilities or entities below the threshold of the cap-and-trade program.

3. Verification

The cap-and-trade program demands rigorous GHG accounting, reporting, and verification of emissions data. The MRR will continue to require independent third-party verification of emission reports by entities and facilities included in the cap. Verification is not required for reporters under the 25,000 metric ton CO_2e threshold; however, they are still subject to ARB audits. ARB will continue to accredit third-party verification bodies and verifiers for emissions reporting. In the amended MRR, the verifier accreditation program will be expanded to also accredit third-party offset verifiers.

C. Applicability

The proposed cap-and-trade regulation establishes a program that covers GHG emissions from multiple sectors. In the initial compliance period, beginning in 2012, the program will cover emissions from electricity, including imported electricity; industrial fuel combustion at large sources; and industrial process emissions, excluding fugitive emissions. In the second compliance period, beginning in 2015, the program will expand to include fuel distributors, to cover emissions associated with transportation fuels and fuels combusted at industrial, residential, and commercial buildings that are not otherwise covered directly as large emissions sources. The first compliance period of the program will include about 37 percent of the economy-wide emissions in California. Starting with the second compliance period, the program will include approximately 85 percent of emissions. The program could be expanded in the future based on new information.

The proposed regulation defines and includes requirements for covered entities, opt-in covered entities, and voluntarily associated entities. Under this regulation, covered entities and opt-in covered entities will be required to register with ARB, report their emissions annually, acquire compliance instruments, and surrender compliance instruments to match their emissions for the compliance period. Voluntarily associated entities must also register with ARB. These requirements are discussed in the following sections.

1. Covered Gases

Under the proposed cap-and-trade regulation the following gases are covered: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons

(HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).[9] Staff proposes to include all GHGs listed in AB 32 in the proposed regulation, even though some may not generate a compliance obligation in the program at this time. This will allow staff to include emissions associated with these gases in the future.

2. Covered Entities

Covered entities are those that exceed the annual cap-and-trade emissions threshold and, therefore, have a compliance obligation in the program. Covered entities include: operators of large industrial sources of GHG emissions, first deliverers of electricity (the first entity that delivers electricity to the California grid), and fuel suppliers. Covered entities must submit compliance instruments to match the amount of verified emissions they report.

Staff proposes broad coverage of sources and emissions under the cap-and-trade program to provide greater certainty that economy-wide emissions reductions will be achieved and provide more opportunities for reductions and trading. Operators of large point sources and first deliverers of electricity will be included under the cap in 2012. Electricity and large industrial sources are included at the outset of the program because they represent a significant amount of emissions from relatively few sources. Accurate emissions reporting and monitoring methods and requirements already exist for these sources. AB 32 also requires ARB to account for emissions of imported electricity (HSC §38530(b)(2)). Therefore, staff proposes to include in the program emissions that result from electricity generated out of state and consumed in California.

Staff proposes to include residential and commercial fuels, as well as transportation fuels, in the program starting in 2015 because together they are the largest source of GHG emissions in California. Including transportation fuels and fuel suppliers will help achieve the objective of reducing emissions not only by 2020, but also help to drive the long-term transition to cleaner fuels well into the future. Additionally, including these fuels in the program provides a consistent price on GHG pollution throughout the economy and ensures a level playing field across all fuels and consumers. Consequently, staff concluded that there are important benefits from including transportation fuels and fuels for residential, commercial, and small industrial users. While there would be benefits to including these fuels in the first compliance period, staff believes that it is appropriate to initially bring these fuels into the program on a reporting-only basis for the first compliance period. This will provide time for both ARB and the fuel deliverers to work through any issues in the reporting system before they have a compliance obligation.

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[9] HSC § 38505, as amended by Senate Bill 104, Oropeza, 2009.

3. Point of Regulation by Emissions Source

P*oint of regulation* refers to the entities that must demonstrate compliance by submitting compliance instruments. As shown in Table II-1, staff proposes different points of regulation strategies, depending on the sector.

Table II-1: Timing and Point of Regulation by Emissions Source

Sources of Emissions	Point of Regulation	Year Entering the Program
In-State Electricity Generation	Those who generate electricity in-state and deliver it to the California electricity grid	2012
Imported Electricity	First deliverers of electricity to the California electricity grid	2012
Industrial – Combustion and Process Emissions	The source for large stationary combustion and process emission sources	2012
Carbon Dioxide Suppliers	Those who supply carbon dioxide	2012
Commercial/ Residential/Small Industrial Combustion	Where fuel is distributed, including natural gas local distribution companies (LDCs) and natural gas transmission pipelines	2015
Liquefied Petroleum Gas Combustion	Those who import or produce liquefied petroleum gas, including fractioners or refiners	2015
Transportation Fuel Combustion	Enterers and position holders of transportation fuels, and producers of biomass-derived fuels	2015

a. Electricity Deliverers

As required by AB 32 (HSC 38530(b)(2), ARB will account for emissions associated with both imported power and power generated in California. Staff proposes a first deliverer approach that regulates the first responsible party for placing power onto the California grid, because it treats all importers and in-state generators the same. The covered entity for in-state electricity generation is the source of generation. For emissions associated with imported electricity, the covered entity will be the first entity to place power onto the California grid. Electricity deliverers are responsible for deliveries of both specified and unspecified electricity delivered to the California grid. These entities include electrical distribution utilities (those that sell electricity to retail customers) and marketers (those that buy and sell in the wholesale electricity market). Typically these entities can be identified as purchasing-selling entities by the North American Electric Reliability Council (NERC) e-Tag.[10]

b. Industrial Process Emissions

For large stationary sources with industrial process emissions, the covered entity will be the facility operator. Staff believes facility operators are most likely to have the authority to plan and implement GHG reduction projects at these large stationary sources. This point-of-regulation approach is identical to that taken in the MRR.

c. CO_2 Suppliers

For use of CO_2 as an industrial gas, the covered entity would be the supplier of CO_2 because they are involved in the sale and delivery of the gas for commercial uses.

d. Fuels

To cover the emissions from transportation fuel combustion and that of other fuels by residential, commercial, and small industrial sources, staff proposes to regulate fuel suppliers based on the quantities of fuel consumed by their customers. Fuel suppliers will be required to report emissions as specified in the MRR. While many of these suppliers will have a cap-and-trade compliance obligation, some who utilize eligible biomass-derived fuel sources may be reporting for informational purposes only. In no case would an entity have a cap-and-trade obligation without having a reporting obligation.

i. Natural Gas Suppliers

For natural gas combustion emissions, the covered entity is the supplier, meaning the owner when the fuel is distributed. *Natural gas suppliers* are

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[10] North American Electric Reliability Corporation (NERC) electronic tag representing transactions on the North American bulk electricity market scheduled to flow between or across control areas.

defined as public utility gas corporations, publicly owned natural gas utilities operating in California, and owners and operators of intrastate pipelines that distribute natural gas directly to end users and are not part of utility pipeline systems.

ii. Suppliers of Transportation Fuels

For transportation fuel combustion emissions, the covered entity is the supplier of the fuel. Transportation fuel suppliers are limited to position holders (those who own fuel) at terminal racks that dispense Reformulated Gasoline Blendstock for Oxygenate Blending (RBOB) and/or diesel fuel, and enterers (those who bring in fuel from outside the State) that deliver fuel outside of the terminal system. This point of regulation is similar to the method used for imported electricity where the owner at the first point of receipt has a compliance obligation. ARB staff will continue to evaluate the concept of position holders relative to railroads and other specific types of fueling operations and may propose modifications to the regulations as appropriate.

iii. Suppliers of Liquefied Petroleum Gas

For liquefied petroleum gas (LPG) the covered entity is the LPG supplier. *Suppliers of LPG* are defined as producers, including fractioners and refiners, and importers of LPG. Staff proposes to include LPG because of its substantial contribution to the statewide GHG inventory.

4. Opt-In Covered Entities

The proposed regulation includes provisions for entities that do not meet the cap-and-trade threshold requirements but choose to voluntarily participate in the cap-and-trade program. These entities are referred to as “opt-in covered entities.” Staff included provisions for these entities to be eligible to receive free allowances for implementing more efficient processes and technologies to reduce their associated emissions. If an entity opts into the program, it is subject to all reporting, verification, and compliance obligations of covered entities from the date of opt-in through the end of the current compliance period.

5. Voluntarily Associated Entities

The proposed regulation describes requirements for entities who do not have a compliance obligation but who may participate in the auctions, secondary market, [11] and tracking system. Voluntarily associated entities may include non-governmental organizations or private individuals wishing to purchase allowances for the sole purpose of retiring them. Voluntarily associated entities may also include participants such as traders, brokers, offset providers, or

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[11] The secondary market refers to a market that is established by trading compliance instruments after initial distribution of allowances through ARB auctions or allocations.

financial institutions. Staff chose to allow these other market participants to increase liquidity in the market and to facilitate the buying and selling of allowances between emitters and counterparties. In addition, more market participants make it less likely for a particular market player to affect the price of allowances by acquiring too many.

Although voluntarily associated entities may participate in the secondary market, purchase allowances at ARB auctions, and participate in the tracking system, only covered entities and opt-in covered entities are eligible to receive allowances through direct allocation or buy them from the Reserve.

D. Compliance Instruments

The proposed regulation includes two kinds of compliance instruments—allowances and offsets—to allow covered entities to meet their compliance obligations. Approved compliance instruments can be issued by ARB or other programs that are approved by the Board for linkage. Each allowance or offset equals one metric ton of CO_2e. California-issued allowances and offsets, and approved compliance instruments from other programs, constitute the total number of compliance instruments available to covered entities to comply with the cap-and-trade program.

1. California Greenhouse Gas Allowances

ARB will issue allowances equal to allowable GHG emissions under the cap. Each allowance authorizes its owner to emit one metric ton of CO_2e and has an economic value which depends on the supply of allowances (and offsets) and the demand to emit GHGs. To achieve GHG emissions reductions, the number of allowances issued is reduced over time. These allowances can be distributed by various methods, including: auctioning, benchmarking, and grandfathering.

2. Offsets

An offset credit represents a reduction or removal of GHG emissions. These GHG emissions reductions or removals result from activities not covered by the cap-and-trade program, but must be monitored, quantified, and verified on an individual project basis. This credit can then be sold and used by a covered entity to meet a portion of its compliance obligation under the cap-and-trade program. Like an allowance, each offset credit authorizes its owner to emit one metric ton of CO_2e.

The number of offset credits that a covered entity may use to meet its compliance obligation will be limited. Offset credits must be real, additional, permanent, verifiable, enforceable, and quantifiable. Specific considerations and design elements of the offset program can be found in Chapter III—Overview of the Compliance Offsets Program.

3. Allowances and Offsets from Other Programs

The proposed regulation provides a framework for allowances and offsets from other approved programs (such as another cap-and-trade program, an offset registry, or a sector-based crediting program) to be used to meet compliance obligations. The use of such instruments can help reduce compliance costs for emitters by expanding the available opportunities for low-cost emissions reductions and the market for new technologies.

The proposed regulation establishes a process by which each program would be evaluated on a case-by-case basis before being considered by the Board. In approving an external program, the Board would also specify what compliance instruments from that program would be accepted for compliance use in California's program. Recognition of another program's compliance instruments or linkage would be implemented by program-specific contracts or memoranda of understandings, as applicable. This Chapter's Section L: Linkage and Section N: Recognition of Compliance Instruments from Other Programs discuss the process for approving other programs.

E. Registration and Accounts

1. Development and Implementation of a Market Tracking System

The proposed program will require a market tracking system (MTS) to record information about the holders of compliance instruments and trades of compliance instruments among market participants. ARB is working closely with our WCI partners on two possible approaches, (1) developing a single MTS that will serve all WCI partner programs, or (2) ensuring that the different tracking systems that are developed can communicate in a manner to allow linkage of the market programs.

The primary goal of the MTS will be to support the effective implementation of the cap-and-trade regulation and to reduce the costs and administrative burden associated with long-term cap-and-trade responsibilities. Additionally, the MTS will collect the information necessary for a secure, liquid, and transparent allowance market.

The MTS as a whole is scheduled to be operational in 2012. ARB is working to make the auction, market registry, trade data repository, and compliance sub-systems of the MTS operational by the end of the third quarter of 2011 to enable the cap-and-trade program to begin operation on January 1, 2012.

2. Registration

The proposed regulation includes requirements for any entity that wishes to hold compliance instruments, including registration with ARB. When an entity registers with ARB, it must disclose all affiliated entities, provide information to allow ARB to oversee the market, and agree to be subject to ARB's regulatory requirements. Once registered with ARB, an entity can possess an ARB account for holding, transferring, and surrendering compliance instruments. Each entity will specify who has the authority to access its accounts when it registers.

3. Accounts

ARB will establish three types of accounts in the MTS to track ownership and trades of compliance instruments: Holding Accounts, Compliance Accounts, and Limited Use Holding Accounts. All entities holding compliance instruments must have a Holding Account. Covered and opt-in entities will meet their compliance obligations by transferring allowances and offsets from their Holding Accounts to their Compliance Accounts. Because they have no compliance obligation, voluntarily associated entities will only be approved for Holding Accounts to buy, sell, and voluntarily retire compliance instruments.

Limited Use Holding Accounts will be created for electricity utilities that will receive free allowances. Holders of these accounts may only sell their directly allocated allowances on a consignment basis through the general quarterly auction held by ARB or, for publicly owned utilities, transfer them to their Compliance Account. For more information on Limited Use Holding Accounts, please refer to Section I of this Chapter—Direct Allocations of California Greenhouse Gas Allowances.

4. Designation of an Authorized Account Representative

Staff proposes that transfers of compliance instruments only would be recorded by the accounts administrator (the ARB Executive Officer or designee) if the transaction is authorized by the account representative. An authorized account representative must be designated by the account holder to conduct transactions. Staff is proposing procedures for authorized account representatives to ensure integrity of transfers between accounts by preventing controversy over who has authority to conduct a transaction.

F. California Greenhouse Gas Allowance Budgets

The initial 2012 allowance budget was set based on the best estimate of actual emissions in 2012 for those sources that will be covered at the outset of the program. In 2015, the program will expand to cover fuel suppliers. The allowance budget in 2015 expands to reflect this increased coverage.

The 2020 target for the cap-and-trade program was initially set through the Scoping Plan process as the emission level needed from capped sources to reach the overall AB 32 economy-wide target. The estimated 2020 cap from the Scoping Plan (365 $MMTCO_2e$) was based on ARB's top-down inventory of greenhouse gas emissions. Since the adoption of the Scoping Plan, the MRR has resulted in facility level data, which has allowed staff to develop a better estimate of the emissions from sources in the program. As a result, staff adjusted the Scoping Plan estimate of the 2020 cap to account for the revised estimate of emissions covered by the cap-and-trade program. Subsequently, the cap for 2020 has been set at 334.2 $MMTCO_2e$. Since the Scoping Plan, staff have refined the coverage of the cap-and-trade program and improved emissions estimates for the covered entities using facility-level data gathered through the MRR program.

After staff set the initial allowance budgets for 2012, 2015, and 2020, it defined annual budgets for the intervening years. Staff established a linear decline from 2012 to 2015 and then from 2015 to 2020. Staff believes that a linear trajectory is the most straightforward method for reducing the cap. The specific methodology and data used for setting the annual allowance budgets can be found in Appendix E: Setting the Program Emissions Cap.

Annual allowance budgets for calendar years 2012–2020 are established in the proposed regulation, so that the total number of allowances issued in each year through 2020 are known. Table II-2 shows the number of allowances created for each year from 2012 through 2020.

These annual budgets were set to include all GHG emissions associated with imported electricity. Each time California links to a WCI partner jurisdiction from which California imports electricity, staff will need to reevaluate these annual budgets to prevent double-counting of these emissions.

The proposed regulation includes three-year compliance periods, with the first commencing on January 1, 2012. At the end of each three-year period, covered entities are required to surrender enough compliance instruments to match their verified emissions from that period. A three-year compliance period provides some temporal flexibility by allowing covered entities to manage planned or emergency changes in operations over the short term, as well as to deal with low water years that might affect the generation of hydroelectric power.

Table II-2: Annual Allowance Budgets from 2012–2020

	Allowance Budget Year	Annual Allowance Budget (Millions of CA GHG Allowances)
1st Compliance Period	2012	165.8
	2013	162.8
	2014	159.7
2nd Compliance Period	2015[12]	394.5
	2016	382.4
	2017	370.4
3rd Compliance Period	2018	358.3
	2019	346.3
	2020	334.2

G. Compliance Requirements for Covered Entities

The program will apply an emissions threshold of 25,000 $MTCO_2e$ annually to determine which entities will have a compliance obligation.[13] Covered entities must comply with program requirements if they emit this threshold or greater. Any entity whose emissions exceed the threshold in any year of a compliance period has a compliance obligation for that compliance period and the next compliance period, unless it has shut down all processes. To comply with the regulation, covered entities must report their emissions annually according to the requirements of the MRR and submit sufficient compliance instruments to cover their verified emissions at the end of each three-year compliance period. Covered entities must also surrender compliance instruments to match a portion of their reported emissions each year.

[12] In 2015, annual allowance budgets are adjusted to reflect emissions from fuel suppliers.
[13] Emissions from combustion of eligible biomass-derived fuels must also be reported, but do not have a compliance obligation associated with them. Anything that is not verified as an eligible biomass-based fuel would be counted when calculating applicability and compliance obligation.

5. Calculating Compliance Requirements

a. Operators of Facilities

An operator of a facility has a compliance obligation if its emissions exceed the 25,000 $MTCO_2e$ inclusion threshold, including process, industrial gas, or stationary combustion emissions. In the case that the operator receives an adverse verification statement[14] or does not report its GHG emissions by the deadline in the MRR, the compliance obligation will be assigned by ARB. This assigned emissions level will be based on staff's evaluation of the following: normal days and hours of operation, previous emissions data reports, potential maximum fuel and process material input and output capacities, wholesale and retail transactions (for electric power entities), and information reported to ARB or other agencies related to the reporting entity's facility.

b. First Deliverers of Electricity

The electricity sector includes both in-state generation and electricity imported into the State. Sources of California's electricity include natural gas, large hydropower, coal, nuclear, cogeneration, and renewable energy facilities. In-state electricity sources supplied approximately 68 percent of California's electricity in 2008.[15] In-state generation was responsible for 44 percent of electricity emissions. Imported electricity accounted for 31 percent of California's electricity supply, and 56 percent of California electricity sector emissions.

Compliance obligations for emissions from the electricity sector are based on the emissions from plants that generated the electricity, if the source of the electricity generation is known. If the source is unknown, the compliance obligation is based on megawatt-hours (MWh) and a default emission factor, which is discussed below.

Compliance obligations for electricity are calculated based on the emissions from the generating facility, if the facility is known. This is referred to as *specified power.* In this case, ARB knows what fuel was used to generate the electricity. For specified power, staff developed reporting factors that determine how many GHG emissions to assign to the specified power based on the fuel source used to generate the electricity. The threshold for determining compliance obligations for specified power is 25,000 $MTCO_2e$ through 2014. In the first compliance period, in-state power plants below the 25,000 $MTCO_2e$ threshold are not covered, even if it is specified as in-state power generation.

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[14] A verification statement rendered by a verification body attesting that the verification body cannot say with reasonable assurance that the submitted emissions data report is free of material misstatement.

[15] California Energy Commission. 2008. Net System Power Report. Additionally, Total System Power for 2008. Found at: http://energyalmanac.ca.gov/electricity/system_power/2008_total_system_power.html.

Electricity generated outside of California and imported into the State from an unknown source is referred to as *unspecified power.* This type of electricity is purchased on the electricity market, which experiences a large number of transactions each hour. The electricity is bought and sold many times before it is delivered to the California electricity grid. For this type of electricity, there is no threshold for the compliance obligation, because it is not possible to trace it back to the generator. Since ARB does not know the source of electricity, staff does not know the amount of GHG emissions to assign to it. Therefore, staff proposes to use a default emissions factor for unspecified power. Staff recommends the emissions factor be based on average emissions associated with the available electricity generation that could be sold on the spot market and brought into California. The GHG emissions will be calculated by multiplying this emission factor by the MWh delivered.

Changes in the reported mix of imported electricity that shift emissions within the Western Electricity Coordinating Council (WECC) region but do not reduce emissions overall should not result in a reduced compliance obligation. Staff is developing requirements to ensure reductions are real and not the result of incomplete accounting. In this way, the California cap-and-trade program will encourage low-emitting electricity generation for both in-state production and imported power.

In 2015, when natural gas is covered by the regulation, emissions from all electricity generated in-state will be indirectly covered for any specified power plants. Beginning in 2015, the compliance threshold for facilities supplying specified imported electricity will be zero, to account for the addition of natural gas fuel coverage and to be consistent with the approach for covering all electricity deliveries in the program beginning in that year.

Electricity generating facilities that are solely powered by nuclear, hydroelectric, wind, or solar energy do not have a compliance obligation because these fuel sources do not directly emit GHGs.

c. Fuel Suppliers

Fuel suppliers are responsible for the emissions resulting from the combustion of the fuel they supply. In this way, a fuel supplier is acting on behalf of its customers who are emitting the GHGs. Facilities and fuel suppliers are distinct in that facilities are treated as physical locations and, therefore, they are covered entities based on operational control. Fuel suppliers are treated as corporate entities that are responsible for compliance.

i. Suppliers of Natural Gas

Because large industrial facilities and electricity deliverers will be responsible for emissions stemming from natural gas combustion, suppliers of natural gas will have a compliance obligation for the combustion emissions of all gas delivered, less the emissions from gas that is delivered to covered entities. This approach will ensure that these emissions are not double-counted.

ii. Suppliers of Transportation Fuels

Suppliers of transportation fuels will have a compliance obligation for the combustion emissions from fuel that they sell, distribute, or otherwise transfer for consumption in California, including RBOB, and Distillate Fuel Oils No.1 and 2.

iii. Suppliers of Liquefied Petroleum Gas

Suppliers, including producers and importers, of liquefied petroleum gas (LPG) will have a compliance obligation for the combustion emissions from fuel sold in California. LPG producers, including fractioners and refiners, of liquefied petroleum gas have a compliance obligation for emissions that results from the full combustion or oxidation of all fuel sold, distributed, or otherwise transferred in California. LPG importers have a compliance obligation for emissions that result from full combustion or oxidation of all fuel imported into California.

d. Other Sectors and Categories of Emissions

i. Combined Heat and Power

Staff proposes that emissions associated with electricity generated from combined heat and power (CHP) operations have a compliance obligation if the industrial facility's total emissions exceed 25,000 $MTCO_2e$.

ii. Biomass-Derived Fuels

Staff proposes to treat direct and indirect emissions from combustion of biomass-derived fuels equally under the proposed regulation. Combustion emissions from specified biomass-derived fuels are excluded from compliance obligations if the biomass-derived fuel is reported and verified pursuant to the MRR. If the start-up fossil fuels that supplement biomass-derived fuel combustion at facilities and unverified biomass-derived fuels exceed the cap-and-trade threshold, the facility would be subject to cap-and-trade requirements based on emissions from these sources.

The MRR requires rigorous verification to validate any emissions reported as biomass-derived fuel emissions that would not generate a compliance obligation. In the absence of certification of the fuel by an accredited certifier of renewable biomass-derived fuels, a verification body must verify a biomass-derived fuel that will not be subject to a compliance obligation pursuant to provisions in MRR. If the verification body is unable to verify the biomass-derived fuel, it will be subject to a compliance obligation for emissions associated with its combustion.

To avoid potential double-counting of emissions reductions from biomass-derived fuels, any source of biomass-derived fuels that applies for offset credits under any ARB-approved offset protocols will be ineligible to be exempt from generating a compliance obligation. This includes but is not limited to the California offset program or any other mandatory or voluntary offset program.

iii. Landfills and Wastewater Treatment Facilities

The proposed regulation excludes emissions from the combustion of biomass produced in solid waste management and wastewater treatment facilities from compliance obligations, if they can verify or certify their biomass through the MRR verification process. Facilities whose emissions from the combustion of fossil fuels and unverified or uncertified biomass-derived fuels exceed 25,000 $MTCO_2e$ will have a compliance obligation. A few large wastewater treatment facilities or landfills may fall into this latter category.

iv. Waste-to-Energy Electricity Generation

Electricity deliverers that use biomass-derived fuels (e.g., waste-to-energy facilities) would have a compliance obligation for any biomass-derived fuel that is not verified through the MRR process. Emissions from deliveries associated with the combustion of fossil fuels and unverified or uncertified biomass-derived fuels that exceed 25,000 $MTCO_2e$ will have a compliance obligation.

6. Timing of Compliance Obligations

Staff proposes to require three-year compliance periods to provide increased compliance flexibility and address price volatility that may be caused by annual variations in electricity sector emissions. Staff also recognizes that there is a need to require covered entities to submit a portion of its compliance obligation more frequently to ensure they are making progress toward their obligations. Covered entities could emit GHGs and then declare bankruptcy or otherwise cease operation before fulfilling their compliance obligations at the end of the three-year compliance period. Any compliance instrument that an entity owns at the time of bankruptcy could be included in its collection of assets for bankruptcy proceedings, thereby prohibiting claims to it by ARB. This form of default would hinder California's ability to meet the cap and the requirements of AB 32.

To reduce the impact of such a scenario, the proposed regulation requires covered entities to turn in a percentage of its verified emissions at intervals during the compliance period. ARB is proposing an "annual compliance obligation" to reduce the potential for a covered entity to default on a three-year compliance obligation.

In addition to the annual compliance obligation, the total obligation for a compliance period is resolved after positive or qualified positive verification statements for the third year are received and reconciled.

A covered entity will surrender compliance instruments to meet its compliance obligation by transferring the serial numbers from its Holding Account to its Compliance Account. Once transferred, compliance instruments may not be transferred back to a Holding Account. Entities can surrender allowances from the allowance budget years within the three-year compliance period, or from an earlier compliance period, to satisfy their compliance obligation. Allowances issued by ARB for an allowance budget year later than the compliance period

cannot be used for compliance in the current period, except for allowances purchased from the Reserve.

a. Annual Compliance Obligation

A covered entity will be required to surrender compliance instruments in each of the first two years of a compliance period equal to 30 percent of its verified emissions for that year. For a covered entity that reports emissions in April under the MRR, the proposed surrender will be due by May 15 of the same year. For a covered entity that reports in June under the MRR, the surrender will be due by July 15 of the same year.

b. Triennial Compliance Obligation

The triennial surrender obligation is the covered entity's total verified emissions over the three-year compliance period, less the two annual surrender payments. ARB will work with covered entities to resolve any data issues related to verification. After ARB makes a final determination of the amount of an entity's compliance obligation based on its verified emissions and the validity of its surrendered compliance instruments, it will determine whether the covered entity has submitted a sufficient number of compliance instruments. The surrender deadline will be November 1 of the calendar year following the third year of the compliance period.

c. Untimely Surrender of Compliance Instruments

In the proposed regulation, covered entities must submit one allowance or offset credit by the compliance deadline for each metric ton of CO_2e emitted. Any emissions that exceed the number of valid compliance instruments surrendered by the deadline will be considered *excess emissions,* and the entity will be subject to excess emissions provisions. The excess emissions provision is intended to discourage untimely compliance. Four allowances issued by California or a linked program must be turned in for each metric ton of excess emissions. To avoid constricting the total supply of allowances, three of the surrendered allowances will be placed into the Reserve and offered for purchase. One of the allowances will be retired to fulfill the entity's original compliance obligation.

7. Offset Quantitative Limit

To drive emissions reductions and incentivize innovation from sources within capped sectors, staff proposes to limit the number of offsets that may be used to meet a compliance obligation. The limit is expressed as a portion of the covered entity's emissions. Using the sum of the annual allowance budgets, staff calculated the total limit on the use of offsets and applied the limit to all covered entities in the program in all of the compliance periods.

The Preliminary Draft Regulation (PDR) described a four percent limit on the use of offsets for an individual entity's compliance obligation. This established a level of program stringency by allowing only 111 million offsets to be used over the life

of the program, in addition to the number of allowances issued by ARB. The proposed regulation would establish an Allowance Price Containment Reserve in which ARB will place a total of 121 million allowances at the beginning of the program. By removing these 121 million allowances from the program, the level of stringency is increased, which could result in higher allowance prices. To address this, staff proposes that additional offsets, equal to the amount of allowances that are placed into the Reserve, be allowed in the program. This means that a maximum of 232 million offset credits may be used over the life of the program. This results in an offset limit in which a maximum of 8 percent of an individual entity's compliance obligation can be met using offsets.

H. Allowance Allocation

Allocation refers to how ARB distributes the allowances it issues. Allowances can be sold, freely allocated based on specific criteria, or some combination of the two. Because allowances are tradable among those in the market, they have value whether they are auctioned or freely distributed. If ARB sells allowances, an auction is the fairest and most transparent way to distribute allowances. When allowances are auctioned, they are distributed to the winning bidders. The proceeds collected from the sale of the allowances sold at auction could be used for a variety of purposes, including public benefit.

Staff proposes an allocation approach designed to give businesses and industries in the State sufficient time to reduce their emissions in a cost-effective manner, without unnecessary short-term costs. Therefore, in the proposed regulation, staff proposes a phased approach to the development of an auction system, beginning with a high percentage of free allocations to program participants. Staff also recognizes that the long-term success of the program will require significant investment in emissions reductions. However, under current economic conditions, an early emphasis on auction could hamper the ability of California sources to invest in low-carbon technologies. Further, as discussed below, freely allocating allowances in the early years of the program will help prevent leakage. Allocating the allowances for free using emissions efficiency benchmarks will reward companies that have already made investments in energy efficiency and carbon reductions, and will not penalize those that produce goods in California. The overall allocation approach includes: creation of an Allowance Price Containment Reserve for cost-containment purposes, free allocation to the industrial sector for transition assistance and leakage prevention, free allocation to electrical distribution utilities on behalf of ratepayers, and auction of the remaining allowances.

1. Establishment of an Allowance Price Containment Reserve

Key to the proposed cap-and-trade program is providing compliance flexibility while ensuring that emissions goals are achieved. To expand flexibility and reduce compliance costs, staff proposes to create an Allowance Price Containment Reserve. The ability of covered entities to purchase allowances from the Reserve will increase the supply of allowances in the market, thereby

moderating the price as long as allowances remain in the Reserve. This reserve will hold allowances that will be made available for purchase by covered entities at fixed prices at direct quarterly reserve sales held three weeks after each general auction. Allowing covered entities to purchase allowances from the Reserve at fixed prices will limit increases in the market price as it approaches the established fixed reserve price. The Reserve will be filled: (1) at the beginning of the program with a portion of allowances from each budget year, (2) with ARB allowances that remain unsold at a direct auction, and (3) with allowances surrendered to comply with excess emissions provisions.

Staff proposes to redirect allowances at the beginning of the program and place them into the Reserve. Staff proposes that a greater percentage of allowances come from later years of the program to provide more flexibility in the early years of the program. The Reserve will be filled with 1 percent of allowances from each year from 2012 through 2014, 4 percent of allowances from each year from 2015 through 2017, and 7 percent of allowances from each year from 2018 through 2020. This is equal to approximately 5 percent of total allowances in the program from 2012 through 2020.

The Reserve will be organized into three equal tiers. Allowances in each tier will be available for purchase at fixed prices. Staff proposes to sell reserve allowances at prices of $40/metric ton for the first tier, $45/metric ton for the second tier, and $50/metric ton for the third tier in 2012. These prices will escalate by 5 percent plus the cost of inflation each year, such that the reserve prices are approximately $60/ metric ton, $67/ metric ton, and $75/ metric ton in 2020. Staff chose these prices to set them above the expected cost of abatement in the California program based on the economic analysis presented in Appendix N: Supporting Documentation for the Economic Analysis, the Updated Economic Analysis of California's Climate Change Scoping Plan,[16] the Updated Economic Analysis of the WCI Regional Program,[17] and trading prices in the European Union Emissions Trading Scheme (EU ETS). Staff also notes that British Columbia, one of our WCI partners, has a carbon tax that is scheduled to be $30/metric ton in 2012. Direct sales of reserve allowances will take place three weeks after each quarterly auction. Covered entities will place bids for the number of allowances they wish to buy from each tier at each price.

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[16] *Updated Economic Analysis of California's Climate Change Scoping Plan: Staff Report to the Air Resources Board.* March 24, 2010. http://www.arb.ca.gov/cc/scopingplan/economics-sp/updated-analysis/updated_sp_analysis.pdf (accessed September 23, 2010).

[17] Updated Economic Analysis of the WCI Regional Cap-and-Trade Program. July 2010. Found at: http://www.westernclimateinitiative.org/component/remosiory/Economic-Modeling-Team-Documents/.

Direct quarterly reserve sales are discussed in more detail in this Chapter's Section J: Auction and Sale of California Greenhouse Gas Allowances.

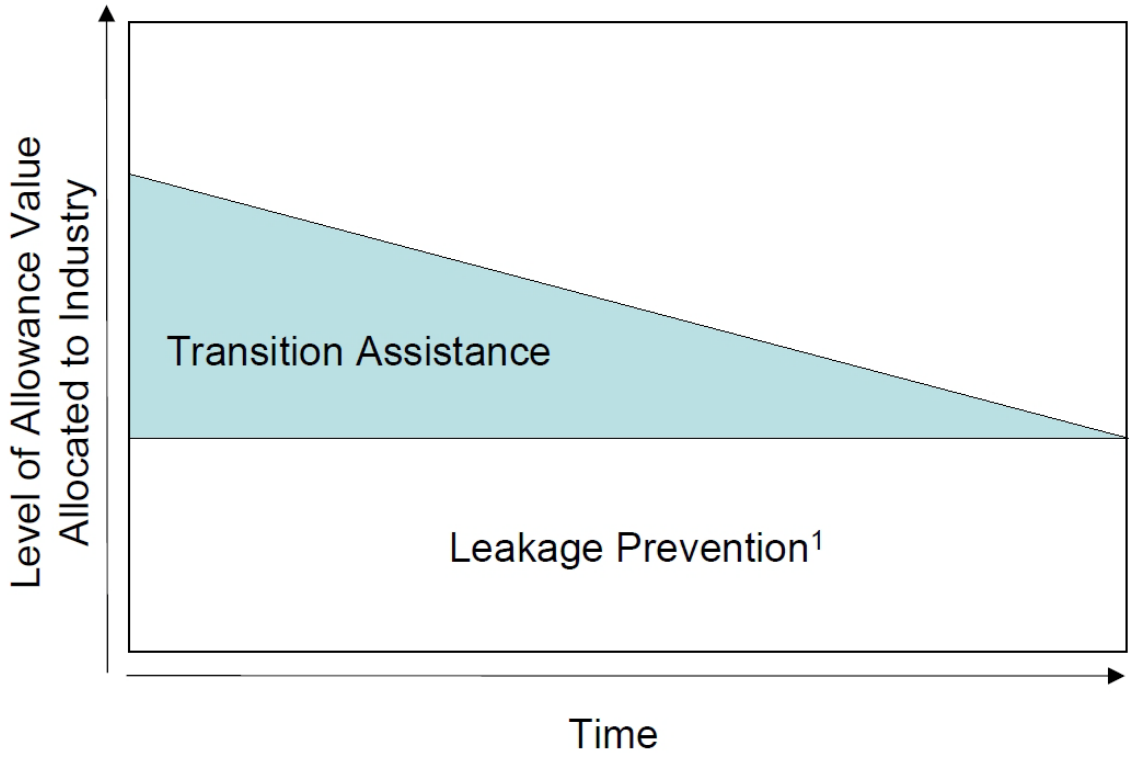
2. Allocation to the Industrial Sector for Transition Assistance and Leakage Prevention

Staff proposes to allocate allowances to the industrial sector for two purposes: (1) to provide transition assistance and (2) to prevent leakage. Transition assistance provides free allocation to the industrial sector at the outset of the program to avoid sudden or undue short-term economic impacts and promote a transition to a low-carbon economy. As depicted in Figure II-1, this transition assistance will decline as covered entities gradually adjust to the carbon price and adopt energy- and carbon-saving strategies. This level of free allocation will decline over time to settle at a level needed to prevent leakage.

If not appropriately compensated for in the design of the program, requirements for some energy-intensive trade-exposed (EITE) industries to reduce emissions in California, either through inclusion in a cap-and-trade program or through source-specific regulation, have the potential to create a disadvantage for California facilities relative to out-of-state competitors who do not face similar requirements. If production shifts outside of California to a region not subject to GHG emissions-reduction requirements, emissions could remain unchanged or even increase. This is referred to as emissions "leakage." AB 32 requires ARB to design measures to minimize leakage to the extent feasible. The cap-and-trade program is designed to minimize leakage in several ways, including accounting for both out-of-state and in-state electricity generation and linkage with partner jurisdictions in the WCI. Staff's allocation approach is also intended to minimize emissions leakage for those in the industrial sector.

Staff analyzed the potential for emissions leakage by looking at emissions intensity and trade exposure. *Emissions intensity* is a measure of the impact that carbon pricing will have relative to a sector's economic output. Those with higher emissions per unit of output are considered to be more emissions intensive. *Trade exposure* is a measure of a sector's ability to pass through a cost. Without assistance, the competitiveness of industries that are both highly emissions intensive and trade exposed has the potential to be negatively affected relative to competitors that do not face similar GHG emission reduction requirements. To minimize the potential for leakage, staff proposes to rely heavily on free allocation in the program's early years. See Appendix K: Leakage Analysis for a detailed analysis.

Figure II-1: Representation of Allowance Value Distribution for Transition Assistance and Leakage Prevention



[1] Mitigation of carbon costs that cannot be passed on due to leakage risk

Staff believes that free allocation to industrial entities at risk of emissions leakage will help maintain the competitiveness of California industries. For as long as ARB assesses that the risk of leakage persists, allowances will be allocated for free to those at risk.

To determine whether a sector is at risk of emissions leakage, staff developed a methodology to assess a sector's emissions intensity and trade exposure. Staff presents this in Appendix K: Leakage Analysis. The number of allowances that an individual facility will be allocated within a specific sector will be based on an emissions efficiency benchmarking approach. Under this approach, more efficient facilities will receive a greater amount of free allowances relative to their actual emissions. The amount of free allowances distributed under this approach will vary with economic conditions. This means that, in an economic downturn, there will likely be fewer allowances distributed for free due to a decrease in production or output. When economic activity is robust and output increases, a greater number of allowances will be freely allocated. The efficiency benchmarks for each sector are described in the regulation. As staff continues to work with stakeholders to finalize the regulation, there may be updates to these efficiency benchmarks. Any updates will be publicly noticed in accordance with the Administrative Procedures Act.

3. Allocation to Electrical Distribution Utilities

Electrical distribution utilities provide electricity to residential and small commercial customers. These entities include Investor Owner Utilities (IOUs) and Publicly Owned Utilities (POUs). Staff proposes to allocate allowances to electrical distribution utilities, as opposed to the generators, because electrical distribution utilities are best situated to utilize the value of allowances for ratepayer benefit.

To ensure that electricity ratepayers do not experience sudden increases in their electricity bills associated with the cap-and-trade regulation, staff proposes to allocate allowances for free to electrical distribution utilities on behalf of ratepayers. The proposed regulation stipulates that electrical distribution utilities must use the value associated with these allowances for the benefit of retail ratepayers of each electrical distribution utility, consistent with the goals of AB 32. They may not be used for the benefit of entities or persons other than their ratepayers. Allowance value could be used for rebates, customer bill relief, or to pay for GHG-reducing measures such as energy efficiency, renewable electricity generation, or other similar programs.

4. Voluntary Renewable Energy Allowance Set-Aside

The proposed regulation includes a placeholder for setting aside a small portion of the allowance pool to address the potential impacts of the cap-and-trade program on the voluntary renewable energy (VRE) market. At present individual decisions to purchase renewable energy in California can lead to reductions in greenhouse gas emissions. Implementation of the cap-and-trade program could change that dynamic because the amount of greenhouse gas emissions allowed will be pre-established by the cap level. As a result, decisions to purchase renewable energy free up emission allowances that would have been needed to generate electricity from fossil fuels, allowing other regulated entities to emit more than they could have otherwise. In essence, the voluntary purchase of renewable energy lessens the regulatory burden on greenhouse gas emitters.

Without an allowance set-aside for VRE purchase, once the cap-and-trade program is in place, the voluntary use of electricity generated from renewable resources and delivered to California would no longer contribute additional greenhouse gas emission reductions because the level of allowable emissions is determined by the cap. A VRE set-aside has been implemented in the cap-and-trade system in the US Northeast (the Regional Greenhouse Gas Initiative, or RGGI). In order to implement an effective VRE set-aside, ARB would need to establish clear accounting rules to determine the relationship of voluntary renewable energy generation and GHG emissions avoided. Additionally, a process for reviewing VRE purchase claims would be needed as part of the process of retiring allowances from the set aside. Because the accounting rules and process for retiring allowances from the set aside have not yet been developed and undergone review, the current regulation only includes a placeholder for future inclusion of this mechanism.

5. Auction of Allowances

Covered entities, opt-in covered entities, and voluntarily associated entities may all participate in the general quarterly auctions to buy allowances. When allowances are auctioned, the allowances are distributed to the winning bidders. The value of the allowances not freely distributed to the industrial sector and electrical distribution utilities that are auctioned is represented by the money paid to the State, which would then have the opportunity to use the revenue for public benefit.

According to the proposed regulation, after allowances have been placed into the Reserve and distributed to the industrial and electricity sectors, the remaining allowances issued for each year will be auctioned. The amount of allowances auctioned will increase over time as transition assistance is phased out and when distributed use of fuels is phased into the program in 2015. When ARB determines that the risk of emissions leakage abates for specific sectors, additional allowances may be auctioned. Auctioning can help establish price discovery; that is, provide a clear signal to market participants of the value of an allowance.

Some allowances will be auctioned directly by ARB; the proceeds will be placed into the Air Pollution Control Fund and made available for appropriation by the Governor and the Legislature for the purposes outlined in AB 32. How the Governor and Legislature apportion this portion of total allowance value will be important to the legacy of the cap-and-trade program. Staff recommends that these revenues be used primarily for the protection of California's consumers and to further the goals of AB 32. The following uses would achieve those ends:

- *Per Capita Consumer Rebate Program.* A significant amount of the allowances auctioned by the State in the second and third compliance period will likely be purchased by fuel suppliers to cover emissions associated with distributed fuel uses. Staff anticipates that these fuel providers will be able to fully pass the cost of acquiring these allowances to the consumers of these fuels. A per capita lump sum distribution of the proceeds raised at auction would help consumers avoid negative impacts of higher fuel expenditures while still providing the correct incentives to reduce fossil fuel use.[18]

- *Community Benefit Fund.* Staff recommends the creation of a Community Benefit Fund to recognize the community protection goals of AB 32.[19] ARB or another agency could administer a competitive grant program designed to promote projects that simultaneously reduce GHGs and co-

[18] See the recommendations of the Economic and Allocation Advisory Committee (Appendix L).
[19] Consistent with Health and Safety Code section 38565.

pollutants, finance adaptation/preparedness for climate change health impacts, create improvements to mass transit and land use planning, facilitate natural resource conservation, and support non-utility energy efficiency programs.

- *Low Carbon Investment Fund.* Staff received many suggestions that a portion of total allowance value be directed toward public investments in the energy innovation goals of AB 32. Various names have been proposed for this type of program including the "California Carbon Trust" and the "Investment Advisory Board."[20] Conceptually, this use of auction proceeds could be structured as a competitive grant program administered by ARB or another entity. Project types could include research, development and demonstration projects in zero- or low-GHG technologies, and/or support for a green technology workforce training program.

I. Direct Allocations of California GHG Allowances

The proposed regulation includes formulas which determine how many allowances each individual facility will be allocated for free. The number of allowances that an individual facility will receive is based on its output and the sector-specific emissions efficiency benchmark for those in the industrial sector, and a mix of historical emissions and sales for electrical distribution utilities. Staff is evaluating different approaches for allocation of allowances associated with the distributed use of natural gas. In the first compliance period, staff proposes to freely allocate the majority of allowances to the industrial and electricity sectors. Appendix J: Allowance Allocation, provides a more detailed discussion of the allocation approach being proposed, including discussion of how benchmarks will be applied in specific sectors.

1. Direct Allocation to Industrial Sectors

Staff proposes to use an updating output-based, free allocation methodology, combined with an emissions efficiency benchmark for allocating to industrial sources. This means that the amount of allowances given to each facility is based on its production activities in recent years compared with a sector-specific benchmark—the more a facility produces, the more free allowances it receives. The purpose of updating output-based benchmarking is to incentivize continued in-state production by tying the allowance value an entity receives to the amount

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[20] See the recommendations of the Economic and Allocation Advisory Committee (Appendix L) and the recommendations of the California Public Utilities Commission (CPUC) and the California Energy Commission (CEC) (Appendix M), as well as *Recommendations of the Economic and Technology Advancement Advisory Committee*. February 2008. http://www.arb.ca.gov/cc/etaac/ETAACFinalReport2-11-08.pdf (accessed 10/10/10).

of its in-state production. This method of allocation helps level the playing field with out-of-state manufacturers.

Staff also proposes to use emissions efficiency benchmarking to reward more efficient facilities on an emissions-per-unit-of-output basis. Benchmarking establishes an emissions performance standard for each sector. Depending on the processes of an industrial sector, it may use one of two types of benchmarks in the proposed cap-and-trade regulation: product-based and thermal energy-based.

A *product-based* benchmark sets an emissions performance standard per unit of output. For each unit of product that is manufactured, the benchmark will establish a standard level of emissions associated with its production. Ideally, staff would apply a product-based benchmark in every case. This type of benchmarking rewards efficiency throughout the production process all the way to the end product. However, applying a product-based benchmark is not feasible in the near-term for some sectors where the production processes are very similar, but they produce a wide array of products. For example, food processors produce hundreds of different products using a very similar production process (e.g., using heat or steam from an industrial boiler). In this case, staff would have to create benchmarks for many individual products, which is administratively burdensome and not feasible in the near-term. For these sources, staff proposes a fall-back approach using thermal energy-based benchmarks.

A *thermal energy-based* benchmark sets an emissions performance standard based on how efficiently a facility sources its energy. For such facilities, staff proposes to look at the types of fuels they use to determine the efficiency of their production processes. Since natural gas is the dominant fuel used in California manufacturing facilities, staff proposes to use the emissions factor associated with natural gas combustion as the benchmark for these sources. In this case, if a facility used a cleaner fuel source, like biomass, or combusts the fuel more efficiently, it would be rewarded with more allowances relative to its actual emissions. If a facility used a higher emitting fuel (like coal) or has an inefficient combustion process, it would not receive as many allowances relative to its actual emissions.

2. Direct Allocation to Electrical Distribution Utilities

Allowances will be freely allocated to the entities that provide retail electricity to California ratepayers, referred to as *electrical distribution utilities.* Requirements for how the freely allocated allowance value can be used differ for IOUs and POUs.

For IOUs, the allowances directly allocated to them must be auctioned at general quarterly auctions. The proceeds from these auctions must be used by the utility to mitigate the bill impacts of AB 32 programs on their distribution customers. Staff proposes that ARB place all allowances freely allocated to IOUs into their

Limited Use Holding Accounts. At each general auction, the utility must consign their allowances (put them up for sale at the auction). If the auction settlement price[21] exceeds the minimum set in the regulation, allowances are sold and the proceeds will go to utilities for the benefit of their ratepayers in the form of rebates, customer bill relief, or other AB 32 uses. If there are allowances that remain unsold at the general auction, they will be transferred back to the entity's Limited Use Holding Account for sale at the next auction.

In the current California electricity market, electricity is produced by both IOUs and independent generators. An IOU will have a compliance obligation for the emissions resulting from generation it operates. An independent electricity generator will have a compliance obligation for the emissions from the generation it operates. Both the IOU and the independent generator will purchase allowances at auction for their emissions. Because the price of electricity in the wholesale electricity market will reflect the cost of those purchased allowances, staff expects that independent generators will incorporate their cap-and-trade compliance costs into their bids in the wholesale power markets.[22] These costs will be paid by the IOUs when the power is purchased.

By requiring IOUs to put their allowances up for auction, the regulation maintains the current competitiveness of the deregulated California electricity market. In this way, utility-owned generation and independent generation have equal access to allowances.

Most POUs own and operate their own generation and do not compete with independent generators in the way IOUs do. Because of this, allowances directly allocated to POUs may either be consigned for sale at the general quarterly auctions or used directly to meet their compliance obligations. If a POU decides to auction some of its allowances at the general auction, the same auction rules apply to the POUs as those described above for the IOUs.

Each year, IOUs and POUs must report to ARB on the monetary value of auction proceeds and how the use of this value of the freely allocated allowances complies with the cap-and-trade regulation.

Staff is continuing to evaluate possible methods for allocating allowances among the electrical distribution utilities. The allocation must further the cap-and-trade emissions-reduction objectives, including providing incentives to cost-effectively

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[21] The *auction settlement price* is the price that all successful bidders will pay for their allowances and the price to be paid to those entities which consigned allowances to the auction.

[22] Some generators have reported that some existing contracts do not include provisions that would allow full pass-through of cap-and-trade costs. These contracts pre-date the mid-2000s and many may be addressed through the recently announced combined heat and power settlement at the California Public Utilities Commission. Staff is evaluating this issue to determine whether some specific contracts may require special treatment on a case-by-case basis.

reduce emissions. Additionally, the allocation must enable all the utilities to serve their customers reliably and affordably.

Staff recognizes that substantial effort is being asked of the electricity sector to realize environmental and energy security goals for California, which include addressing the following policy objectives:[23]

- Energy efficiency and demand response are the top priority for meeting future energy needs.
- Renewable energy is the preferred electricity supply resource, reflected in recently adopted renewable energy procurement requirements under the Renewable Electricity Standard (RES).[24]
- Combined heat and power and distributed generation are priorities, including the California Solar Initiative and the New Solar Homes Partnership.
- Continued reductions in the impacts of power plants on air quality and coastal and estuarine environments will be achieved with power plant efficiency and control improvements.
- Electrification of transportation is expected to contribute to energy security as well as environmental goals.

Utilities are committing significant resources to achieve these policy objectives, most of which help reduce GHG emissions.

Staff must also consider that, although all the utilities are moving toward these common policy goals, they currently have very different GHG emissions profiles and emissions-reduction opportunities. Some utilities, particularly in Southern California, have relied more on coal-fired electricity generation and have long-term commitments that were developed prior to concerns about GHG emissions and AB 32. Although Senate Bill 1368 (SB 1368, Perata, Chapter 598, Statutes of 2006) and its implementing regulations will result in substantial displacement of coal-based electricity imports from long-term commitments, existing contracts and ownership agreements have substantial remaining time periods; for instance, some stakeholders have stated that their existing agreements run through 2027 and would be costly to terminate. In Northern California, hydroelectric resources are more abundant, and those, combined with natural gas, result in a lower-

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[23] A summary is presented in *California's Clean Energy Future. An Overview on Meeting California's Energy and Environmental Goals in the Electric Power Sector in 2020 and Beyond*, California Energy Commission Report CEC-100-2010-002, September 2010, at: http://www.climatechange.ca.gov/energy/index.html (accessed 10/14/2010).

[24] *Renewable Electricity Standard*. California Air Resources Board. Found at: http://www.arb.ca.gov/energy/res/res.htm (accessed 10/10/10).

emitting generation portfolio. Additionally, the absence of long-term contracts tied to high-emitting resources provides more flexibility to reduce emissions prior to 2020.

This diversity of resources and emissions-reduction opportunities across utilities creates challenges for defining an allowance allocation method that provides proper incentives, is affordable for all utilities, and is considered equitable. Approaches proposed by stakeholders, the California Public Utilities Commission (CPUC), and the California Energy Commission (CEC)[25] have suggested balancing historical emissions and electricity sales to allocate allowances. By considering historical emissions, allocation can recognize the diversity of generating resources across utilities. Recent investments to reduce emissions can also be rewarded by using historical emissions that, for example, preceded the enactment of AB 32. By considering retail sales, allocation can reflect differences in the amount of electricity delivered by each retail provider. The sales metric would reward utilities that achieve lower emissions intensities, consistent with the long-term goal of reducing GHG emissions from the sector overall.

To date, staff's analyses of options based on historical emissions and sales have not identified an allocation method that provides appropriate incentives for emissions reductions and is considered affordable and effective for all utilities. The contracts for high-emitting resources pose a particular challenge. Some contracts expire as soon as 2016, providing substantial opportunity for emissions reduction prior to 2020. Other commitments run past 2020, limiting the opportunity to reduce emissions from the existing resource in the next 10 years, even as substantial investments are made to acquire new low-emitting resources. Simply considering historical emissions and sales does not adequately reflect these divergent circumstances. Also, the allocation method must avoid inadvertently providing an incentive to continue using high-emitting resources, but rather must provide incentives to ensure that all cost-effective efforts are undertaken to achieve necessary emissions reductions.

Staff is continuing to examine options and obtain feedback. With input from stakeholders, staff's analysis is examining additional factors that could be considered beyond historical emissions and sales, including, among other things, the dates of contract expirations, the rate of achievement of renewable and other low-emitting resources, incentives for early reductions in commitments for high-emitting resources, and other program design features. Staff will continue to work with stakeholders and will review comments received during the comment period on this proposal. Staff may bring a more detailed proposal to the Board

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[25] The California Public Utilities Commission and the California Energy Commission presented recommendations to ARB about the design of a cap-and-trade program for the electricity sector in October 2008. Those recommendations are included as Appendix M.

based on this ongoing effort, and will circulate any such proposal for review in a subsequent 15-day comment period.

3. Allocation of Allowances Associated with Distributed Use of Natural Gas

Beginning in 2015, natural gas distribution utilities will be responsible for the emissions associated with natural gas delivered to customers not directly covered under the cap-and-trade program, including residential, commercial, and small industrial customers. Following comparable arguments to those applied in the electric sector, the investor-owned natural gas distribution utilities have proposed allocation to the gas utilities based on the proportionate share of total capped emissions from residential and commercial natural gas use over a historical period.

Under the utilities' proposal, the allowances allocated to the sector would decline over time in proportion to overall cap decline. The utilities requested that ARB allow 90 percent of the allowances to be directly retired to reduce the utility compliance obligations, with the remaining 10 percent offered on consignment by the utility at auction. The proceeds raised from the sale of this 10 percent would be used to fund customer energy efficiency and other greenhouse gas reduction programs.

ARB is considering this proposal along with alternative approaches. One alternative would be for ARB to allocate allowances to the utilities but require them to offer all allowances on consignment at auction. Proceeds from the sale of these allowances could then be used to provide rebates to customers on a non-volumetric basis. The CPUC would determine the final amount of proceeds dedicated to rebate programs or to customer energy efficiency and other GHG-reduction programs. This treatment would be analogous to how investor-owned utilities are expected to protect their customers in the electricity sector.

Another alternative under consideration would be to have the allowances associated with emissions from dispersed natural gas combustion auctioned and the allowance value returned to customers through action by the Governor and the Legislature. This approach is analogous to how other distributed fuel use (i.e., gasoline, diesel, and propane) is treated under staff's current proposal.

J. Auction and Sale of California Greenhouse Gas Allowances

ARB staff developed its auction design proposal based on a set of objectives that were discussed with stakeholders including:

- Promoting open access to the auction.
- Ensuring fairness and transparency of the procedures.
- Minimizing administrative and transactions costs to participants.

- Promoting economic efficiency.
- Preventing manipulative behavior.
- Revealing the market valuation of allowances.
- Minimizing price volatility.
- Promoting allowance market liquidity.

Staff has carefully examined rules for auction in existing GHG emissions trading systems, and is proposing an auction design closely resembling that used in the Northeast Regional Greenhouse Gas Initiative (RGGI). Staff also continues to participate in the development of recommendations for auction design in the WCI. Preliminary WCI recommendations are consistent with most of the main design features in the ARB staff proposal.[26]

1. Timing of Allowance Auctions

The first allowance auction will take place in February 2012. The auctions will continue based on the calendar quarter for the remainder of the program. These auctions are general auctions in which covered entities, opt-in covered entities, and voluntarily associated entities may bid for allowances.

At each general quarterly auction, one-quarter of the total allowances available for auction in the budget year will be auctioned. A number of allowances from future budget years will also be auctioned. In addition to these allowances, any party with a Limited Use Holding Account in the system may offer their allowances for sale at the general quarterly auction. Any party using this "consignment" option will be paid the auction settlement price for their allowances. If any allowances offered on consignment remain unsold after the auction, ARB will transfer them back to the owners' accounts.

Three weeks after the regular quarterly auction, ARB will also offer allowances in the Reserve for sale at fixed prices to covered entities.

2. Auction Format and Reserve Price

In each auction, participants can submit bids by specifying how many allowances they want at a specific price. Allowances will be sold in 1,000 unit bundles. Participants can submit as many bids as they like, as long as they can prove to the auction operator that they can pay for allowances they win. The bids will be sealed, which means a participant does not know what price others have bid. A

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[26] Western Climate Initiative. Markets Committee Task 6: *Auction Design White Paper.* April 14, 2010. Found at: http://www.westernclimateinitiative.org/component/remository/func-startdown/231/.

sealed bid makes it difficult for participants to manipulate the auction price or collude with others to change the auction price for their mutual benefit.

The auction will be settled in a single round of bidding. The auction operator will award allowances beginning with the highest bid. The operator will award allowances to each bid in declining order until all allowances are awarded. However, the auction operator will not accept any bids below the reserve price. If the auction settlement price equals the reserve price, unsold allowances will be placed into the Reserve, or in the case of IOUs and POUs offering their allowances on consignment, back to their Limited Use Holding Accounts. Allowances placed back into the Reserve will be offered at the direct quarterly reserve sales that occur after each general auction, as described below.

The reserve price in the proposed regulation has been set at $10/metric ton for auctions in 2012. This is the same level as the price floor that was established in the Waxman-Markey cap-and-trade legislation introduced in the United States Senate in 2009[27]. Staff believes setting the reserve price at this dollar amount will send a signal to technology developers, as well as those investing in GHG offset projects. For all years following 2012, this reserve price will be increased by 5 percent plus a consumer price index. The auction reserve price is one of the components of a linked regional market program for which consistency across the individual programs is especially important. For this reason, ARB staff will work closely to evaluate this issue with other WCI jurisdictions while evaluating their programs for possible linkage. Staff may propose an adjustment to the reserve price as part of changes made to link California's program with the programs established by WCI partner jurisdictions.

3. Auction Administration and Registration

The auctions will be conducted by ARB or may be contracted to a third party that is hired by ARB to act as the auction operator. Any auction operator hired by ARB to conduct auctions will be subject to ARB oversight, and no auctions will be final until ARB approves the results. If California links with other WCI jurisdictions, then the auction operator may sell California and linked jurisdictions allowances in the same auction.

ARB will announce the auction on its website at least 60 days prior to each auction. This announcement will specify the date, time, and location of the auction; information that must be submitted to ARB by those wishing to participate in the auction consistent with the proposed regulation; and the number of allowances that will be auctioned.

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[27] American Clean Energy and Security Act of 2009, H.R. 2454, 111th United States Congress, 1st Session. (2009).

All entities wishing to participate in an auction must register for each auction at least 30 days prior to the date of the auction. The proposed regulation specifies the information each auction participant must submit to take part in the auction. The registration process allows ARB to update information on participants. ARB retains the ability to deny registration approval to any participant with a history of violating auction or market rules. Each entity must also provide a bid guarantee. A *bid guarantee* provides assurance to ARB that the purchaser of allowances at auction has the financial capability to buy them. A bid guarantee can be a bond issued by a financial institution, cash in the form of a wire transfer or certified funds, or a irrevocable letter of credit issued by a financial institution.

Staff proposes to implement a limit, known as a purchase limit, on the amount of allowances that a single entity and its affiliates are able to purchase at any single auction to ensure that all entities with a compliance obligation have fair and equitable access to allowances sold at auction. Each covered entity and opt-in covered entity can purchase of a maximum of 10 percent of the total number of allowances offered for each budget year. Each voluntarily associated entity can purchase a maximum of four percent of the total number of allowances offered at each auction. ARB believes this purchase limit, together with direct allocations to covered entities and the option to use offset credits, would allow covered entities to obtain a sufficient part of their compliance obligation at auction. In addition, ARB proposes to exempt the investor-owned utilities from the purchase limit because entities do not receive a direct allocation that they can use for their own compliance needs.

4. Direct Quarterly Sales of Allowances from the Allowance Price Containment Reserve

Staff recognizes that unforeseen events, such as a drought year that results in low hydroelectricity generation and high electricity sector emissions, could create a shortage of allowances and result in periods of high market prices. The proposed regulation includes a reserve pool of allowances to manage potential price spikes. Covered entities will have the option of buying from the reserve pool at fixed prices. The reserve allowances will not be available to voluntarily associated entities.

Sales from the Reserve will take place three weeks after each quarterly auction. Allowances in each tier can be purchased at a fixed price. Staff proposes to set these prices at $40/metric ton, $45/metric ton, and $50/metric ton. These prices will increase each year. Covered entities will place bids for the number of allowances they wish to buy from each tier. Many of the administrative procedures, such as the requirement for a bid guarantee, will be the same as for the auction. The Reserve administrator will award allowances from each tier until the tier is exhausted. Empty tiers will not be refilled. If too many bids are submitted for a tier, the Reserve administrator will prorate the available allowances to the bidders.

Purchases from the Reserve will be subject to the Holding Limit described in Section K: Trading and Banking. In addition, allowances purchased from the Reserve will be transferred by the administrator directly to the purchasing entity's Compliance Account, from which it cannot be removed until it is surrendered. Staff proposes this to ensure that allowances are only purchased to meet compliance needs, not to provide a supply of allowances for speculative activity.

5. Identifying Corporate Affiliations and Beneficial Purchases

Staff proposes to require disclosure of affiliations of registered entities, along with entities purchasing or holding instruments on behalf of another entity. These disclosures are essential to market monitoring. The information is also crucial to evaluating the purchase and holding limits when auction purchases are made.

K. Trading and Banking

Trading allowances establishes a price for each metric ton of GHG emissions. Participation of covered entities ensures the market price reflects the cost for reducing emissions per metric ton, as well as market participants' expectations of how that cost will change over time. An entity would buy an allowance if the market value of the allowance is less than the entity's cost of reducing emissions. Alternatively, an entity may sell an allowance to another entity at the current market price if it can make direct reductions at a cost lower than the allowance price. An entity that anticipates that the cost of direct reductions will be more expensive in the future may purchase and hold allowances for sale in the future.

Staff is proposing rules to prevent market manipulation, since some entities may attempt to manipulate the market for compliance instruments, as has been observed in other markets. Some rules involve information disclosures to assist in monitoring the market. Staff is also proposing prohibitions on trading activities that involve fraud, reporting false or misleading information, misrepresentations, and manipulations that are commonly used in other markets.

One prohibition in the proposed regulation deals with efforts to "corner" a market —an entity purchases such a large share of available compliance instruments that other market participants have no choice but to buy from them. To combat this tactic, staff proposes the use of a holding limit, which is the maximum share of available compliance instruments that an entity or group of affiliated entities may own. All types of registered entities will face a limit on allowances placed in their Holding Accounts, which entities use for buying and selling. Covered entities will have an exemption from the holding limit for allowances they place in their Compliance Accounts up to the amount of their most recent year's verified emissions. This exemption allows them to accumulate compliance instruments to meet their surrender obligation without violating the limit. Without this limited exemption, ARB would have to set the holding limit so high that it could not prevent hoarding. Holdings by affiliated entities will be evaluated as if they belonged to a single entity.

Transactions, such as trades or surrender of compliance instruments, are transfers of serial numbers between accounts. All transfers are accomplished through submission of a transaction report to the accounts administrator. Staff proposes that these reports include such information as account numbers and authorized account representatives of both parties, the serial numbers of instruments to be transferred, settlement and delivery dates, and price if applicable. The rules also set a time limit for reporting the transaction. The accounts administrator may reject reports if the transaction does not conform to the regulations.

California compliance instruments do not expire. This allows an entity to hold the instrument until it is needed. Staff proposes this "banking" feature to allow entities to save instruments across compliance periods. This is intended to limit price variability, as entities buy additional instruments during times of relative oversupply and use or sell them when supplies are short and prices are higher.

Allowances issued for a future year cannot be used for surrender in an earlier compliance period. The one exception is an allowance purchased from the Reserve, which may be used as soon as it is bought. This approach is proposed to prevent the threat of "cascading borrowing." This situation occurs when entities are able to use future allowances for current compliance, and it creates a growing shortage of instruments in later compliance periods.

Staff also proposes that entities without a compliance obligation may voluntarily submit allowances to ARB for retirement. The process simply requires them to submit a transaction report that names the ARB Retirement Account as the destination account for the transaction.

L. Linkage

The concept of *linkage* involves integrating one greenhouse gas emissions trading system with one or more other systems. When two cap-and-trade programs—for example, California and another WCI partner jurisdiction—recognize allowances and offsets from each other's systems, they are linked. The two systems must agree to accept allowances and offsets to meet surrender obligations interchangeably between them. If California were to link to another program, allowances could flow in both directions between California and the other system. To accomplish this in California, ARB would accept allowances or offsets issued by other approved programs to meet a compliance obligation in the California cap-and-trade program.

If California were to link, covered entities would generally use allowances and offsets from a linked program if they were less expensive than making reductions on-site or purchasing California allowances and offsets. Sources in both programs would seek out the lowest cost reductions to be found across systems, which should lead to a more liquid and better functioning market. For this reason, linkage allows for increased cost-containment by reducing the aggregate cost of

meeting the cap. While the proposed regulation establishes a framework and criteria for linkage, staff is not proposing to link to any programs at this time.

1. Evaluating Linkages

Each cap-and-trade program will have slightly different design elements. If design features exist or are later adopted into a linked program they will be made indirectly available to California participants, regardless of whether the same provisions exist in the design of the California program. Therefore, it is critical that before California links to another program, ARB evaluate the design features of a potential linked program. There must also be assurances that the program will continue to implement the agreed-upon program design moving forward.

When evaluating a program for linkage it is important to consider the implications that linkage may have on California's program, including the indirect impacts that could occur. When California establishes a linkage there may be unintended consequences for the California cap-and-trade program. These consequences could occur if the linked system makes changes to the design of its program in the future or links to another system.

2. Process for Approval of Linkages

A regulatory action by the Board will be needed to approve linkage with another program. Before a program would be brought to the Board for approval, it would undergo an analysis culminating in a separate rulemaking process. Each rulemaking process would occur prior to staff proposing regulatory amendments incorporating the linkage, and would include a public process, CEQA evaluation, and statement of reasons. The linkage section in the regulation would be amended to include specific provisions for each approved linkage.

3. Criteria for Evaluating a Program for Linkage

Following staff's evaluation of the implications of the linkage, staff would propose linkage to the Board. In evaluating whether California should link to another program, staff will consider criteria that the potential linked program must meet, as discussed below.

The potential program must be operated by a sub-national or national government that has committed to a similarly stringent binding and declining cap. That cap must also cover one or more economic sectors, such as in the California cap-and-trade program.

The key to maintaining the environmental integrity of the California cap-and-trade program is the effectiveness of its monitoring, reporting, verification, and enforcement provisions. Although, these provisions do not need to be identical, ARB needs to be confident that the linked program has provisions for monitoring, reporting, verification and enforcement that are reliable and sufficient to ensure the environmental integrity of the program.

Certain other features of a cap-and-trade program, mainly those designed to contain costs, need to be harmonized before ARB links to another program. In particular, these include cost-containment provisions such as offset credits, linkage to other programs, an auction floor price, and banking and borrowing.

The potentially linked program must contain provisions to ensure that offset credits issued by, and accepted into, its system provide the same integrity as those issued by California's program. Because the design and operation of an offset program is key to maintaining the environmental integrity in any cap-and-trade program, the potential program must have a mechanism that limits the use of offset credits in its program, similar to California's quantitative usage limit.

In addition to including similar cost-containment mechanisms, the potentially linked program must have sufficient requirements for market tracking, registration, enforcement, and information transfer. The system must have a market tracking system that is able to provide that compliance instruments, when voluntarily retired or used to meet a compliance obligation in any program, are disqualified from further use in any program. This mechanism will ensure that the same allowances and offsets are not used more than once in multiple programs.

The potentially linked program must also have a comprehensive registration requirement for all market participants and be capable of transferring information on all registrants to California's market tracking system. The program must be able to: transfer information on creation, approval, and retirement of compliance instruments; serve as a permanent repository of ownership information on all transactions involving approved compliance instruments, from the time they are created or approved to the time they are retired, including prices, those who transact compliance instruments, and other documentation; and provide a complete history of ownership of all approved compliance instruments to linked programs that may retire the compliance instruments issued, or approved for use, under its system. These requirements are necessary for ARB to be able to track the owner of a specific compliance instrument at any time, even if it did not originate in California's market tracking system.

It is important for linked programs to have a similar level of enforcement provisions as those of ARB. The potentially linked program must have an enforcement mechanism that can: provide general market surveillance; identify suspect transactions; undertake investigations and enforcement actions; ensure that consequences for noncompliance are substantially the same in all programs linked to its system; respond in a timely manner to requests by ARB for information on market participants under investigation by ARB; and transfer to ARB, in a timely manner, a complete record of all enforcement actions undertaken by the program's jurisdictional enforcement authority.

The potentially linked program must also be capable of transferring market-sensitive information necessary to monitor market trends on a regional basis, including: prices, aggregate emissions, positions of major market participants,

issuance of offset credits, and information that can be released to the public in a coordinated and consistent manner. By requiring transparency and collecting pertinent market and trading information ARB, as well as the public, can monitor and track market transactions and trends.

4. Potential Linkage with Western Climate Initiative Partners

Although California is unable to include regulatory language for linkage to programs that are still being developed, some WCI partners may be ready to implement their cap-and-trade programs in the near term.

WCI partners developed a model rule released in July 2010 called the Design for the WCI Regional Program.[28] Four other WCI Partner jurisdictions—New Mexico, British Columbia, Ontario, and Quebec—are working to implement their cap-and-trade programs by January 2012. Although these partner jurisdictions have not finalized their programs, staff has been working closely with them and is confident that these partners are moving forward with cap-and-trade programs generally consistent with the Design for the WCI Regional Program. As these programs move closer to implementation, staff will evaluate them and return to the Board with recommendations for linkage.

Staff is looking to link with WCI partner programs for several reasons, including:

- Achieving greater emissions reductions and improving the cost-effectiveness of the program by including additional low-cost emissions-reduction opportunities throughout the region.

- Reducing the risk of emissions leakage and maintaining competitiveness by expanding the geographic coverage.

- Improving market liquidity and reducing market volatility and manipulation by enlarging the supply of compliance instruments.

Linkage provisions adopted through a separate regulatory process would need to specify how the cap limits would be adjusted to include linkage to WCI partner jurisdictions where California is an importer of electricity. Currently, the proposed regulation accounts for emissions of imported electricity in the allowance budgets. To prevent double-counting of these emissions, California would have to subtract these emissions from cap levels in the case of future linkages. In this case, ARB would specify in the approval of linkage the equivalent number of allowances that

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[28] *Design for the WCI Regional Program.* Western Climate Initiative, July 27, 2010. Found at: http://westernclimateinitiative.org/component/remosotory/general/program-design/Design-for-the-WCI-Regional-Program/.

would need to be retired in the California system to account for the emissions of imported electricity from the linked jurisdiction.

New Mexico's proposed regulation[29] varies from the Design for the WCI Regional Program in a number of areas, including not accounting for emissions associated with imported electricity. AB 32 requires ARB to account for emissions associated with imported electricity and to minimize leakage. Staff plans to work closely with New Mexico and the relevant utilities to determine what can and should be done to allow California to appropriately account for imported electricity. If an appropriate mechanism can be developed and implemented, and all other aspects of New Mexico's program are acceptable for linkage, ARB staff would be able to recommend to the Board that California's program should link with New Mexico's program.

M. Offset Credits Issued by ARB

Individual projects can be developed to achieve GHG reductions from activities not otherwise regulated or covered under the cap-and-trade program. These projects, called *offset projects,* can generate offsets, or verifiable emissions reductions whose ownership can be transferred to others, including entities with a compliance obligation under a cap-and-trade program. In addition to providing compliance flexibility, the inclusion of offsets in the program will support the development of innovative projects and technologies from sources outside capped sectors that can play a key role in reducing emissions both inside and outside California.

As required by AB 32, any reduction of GHG emissions used for compliance purposes must be real, permanent, quantifiable, verifiable, enforceable, and additional (HSC §38562(d)(1) and (2)). Offsets issued by ARB must be quantified according to Board-adopted methodologies. The proposed regulation includes provisions to verify and enforce the reductions incentivized through the generation and retirement of offset credits. The regulatory criteria for compliance offsets will ensure that the reductions are quantified accurately and are not double-counted within the system.

Staff recognizes that a robust supply of offset credits can help to contain the costs of a cap-and-trade program. To promote the supply of offset credits, staff proposes that: (a) ARB issues offset credits for projects using ARB-approved protocols, and (b) ARB recognizes offset credits from ARB-approved offset programs. These programs could include sectoral programs such as those reducing emissions from deforestation and forest degradation in developing

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[29] Proposed Greenhouse Gas Cap-and-Trade Program, New Mexico Environment Department. (2010). Found at: http://www.nmenv.state.nm.us/cc/CapandTradeRegulation.htm.

countries (REDD). Offset credits from linked programs (such as WCI partner jurisdictions) would also be eligible for use in California's cap-and-trade program. ARB staff incorporates provisions in the proposed regulation to allow these two methods to be used following Board approval of specific protocols or programs.

The proposed regulation includes provisions to specify requirements for third-party verifiers, offset project developers, and offset credit users, as well as penalties for noncompliance. Since offset projects can be located outside of California, all offset credits must be verified by an ARB-accredited verifier, and ARB has the ability to audit all accredited verifiers. Offset verification procedures in the proposed program are designed to reduce subjectivity and uncertainty. These procedures help ensure the rigor and validity of offset credits. The offsets verification program requires that verifiers demonstrate competence in each specific project type, employ conflict of interest assessments and mitigation requirements, and include random verifier audits and strict performance evaluations to ensure that offset verification activities are conducted accurately and properly. The program's underlying registry system for compliance instruments is being designed to provide strong enforcement capabilities, including mechanisms to prevent double-counting, impose public disclosure requirements, and ensure ownership.

For offset credits issued by ARB, all offset protocols used in the compliance program must be adopted by the Board. The proposed regulation establishes the process by which the Board will approve and amend offset protocols based on staff's evaluation and a public process. These protocols will be made publicly available so that anyone interested in developing an offset project can do so according to Board-approved standards. Approved protocols serve as a cornerstone to ensure that reductions are appropriately quantified, monitored, reported, and documented. Those taken to the Board for adoption will consist of standardized methods that quantify reductions based on specific criteria and pre-established calculation methods. This approach will result in streamlining the calculation of project baselines and determining the additionality of projects using standard eligibility criteria that ensure projects are additional.

Staff has developed four compliance offset protocols, which can be found in Parts II through V of the Staff Report, for use under the compliance offset program. These protocols include the U.S. Forest Projects Protocol, the Livestock Manure (Digester) Projects Protocol, the Urban Forest Projects Protocol, and the U.S. Ozone Depleting Substances Projects Protocol. They are incorporated by reference in the proposed regulation and are being considered for adoption by the Board as part of this rulemaking package. While the program contains provisions to allow offset projects from North America, staff is only taking offset protocols applicable in the United States to the Board for approval as part of this rulemaking package.

ARB has coordinated with the other WCI partner jurisdictions in developing the offset program, including identifying specific project types for first priority and a

review of existing protocols for those project types.[30] While ozone-depleting substances projects were not included in this priority review, ARB considers it to be a promising offset project type. The WCI partner jurisdictions are currently reviewing this protocol, including assessing it relative to the WCI offset criteria recommendations. Staff will continue to work within WCI to address any issues that may arise with use of this protocol in the context of linking with a WCI partner.

To ensure that there is a ready supply of offset projects developed according to Board-approved protocols, staff proposes to work with qualified third-party offset programs to bring offset credits from new offset projects into the offset program. Staff recognizes that third-party offset programs have existing capabilities and infrastructure that can be deployed quickly to enhance the supply of offset credits. The proposed regulation includes conditions and processes under which third-party programs can be approved to generate offset credits for compliance use according to ARB-approved protocols.

The proposed regulation establishes requirements for offset projects that want to be issued offset credits. These include using a Board-approved protocol, meeting the requirements for additionality, being located in North America, and complying with all applicable laws and regulations at the national, state or provincial, and local levels.

The proposed regulation requires that project developers "list" their projects (i.e., submit information pertaining to their offset projects). *Listing* establishes a mechanism for project developers to record information on their offset projects for ultimate issuance of offset credits. Project listing requires the submittal of information on each project for transparency purposes. The requirements for what information must be submitted can be found for each type of offset project in the corresponding offset protocol, which are incorporated by reference in the proposed regulation. When listing, project developers must also attest to ARB that all information they submit for listing purposes is truthful and accurate. These attestations will be used for enforcement purposes.

Monitoring requirements in the proposed regulation include measurement and data collection for key project parameters, as well as related procedures and quality control procedures. The monitoring requirements address questions regarding what needs to be measured, how often, and acceptable methods and instrumentation for data collection. The staff proposal requires measurement

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[30] Det Norske Veritas. *Review of Existing protocols Against WCI Offset Criteria.* For the Western Climate Initiative. April 2010. Found at: http://www.westernclimateinitiative.org/component/remosiory/Offsets-Committee-Documents/WCI-Review-of-Existing-Offset-Protocols.

device calibration according to the manufacturer's recommended procedures. General monitoring requirements can be found in the proposed regulation, while specific requirements for each type of offset project can be found in the individual protocols. Protocol-specific monitoring requirements increase consistency among projects of the same type and allow monitoring requirements to be tailored to each project type.

The proposed regulation requires reporting on the performance of offset projects, including a process for summarizing project monitoring data, calculating the GHG reductions achieved in the applicable period, and documenting that information in a project report. The required content and level of detail demanded in project reports, referred to as *Offset Project Data Reports* in the proposed regulation, vary between project types.

In the proposed regulation, staff includes requirements for a verification program that are consistent with international standards and subject to ARB oversight. This oversight includes verifier accreditation, verification body accreditation, requirements for verification services, and conflict-of-interest requirements. The proposed regulation includes enforcement provisions that apply to parties that participate in the offset program. These parties include offset project developers, verifiers, and covered entities.

The proposed regulation establishes a Forest Buffer Account—a permanence mechanism for ensuring that GHG emissions remain out of the atmosphere—to replace offset credits in the event of an unintentional reversal. The Forest Buffer Account acts as an insurance policy; the developer pays a premium up front to be fully covered later in the event of a loss. A portion of all offset credits issued to offset projects developed according to ARB's U.S. Forest Projects Protocol must be placed into the Forest Buffer Account to cover unintentional reversals. The forest project operator is required to follow the methods in the U.S. Forest Projects Protocol for calculating the project's risk rating. The risk rating is based on a number of default and calculated factors that differ, depending on the individual project. The factors and equations that must be used to determine each project's risk rating are provided in the U.S. Forest Projects Protocol.

To ensure enforceability of compliance offsets, ARB needs to have the ability to investigate and take action for violations or noncompliance with the regulations. There are two primary reasons that ARB may need to invalidate offset credits after they have been issued: (1) fraud or malfeasance on behalf of the project developer, the third-party verifier, verification bodies, or others involved in producing the documentation used to support the issuance of offset credits, or (2) a reversal in the forest sector. If an offset credit is invalidated and has been used for compliance or retired, it must be replaced. If the offset credit has already been retired, staff is proposing, in all cases of fraud or malfeasance, that the entity that used or retired it be responsible for replacing any invalidated offset credits. The covered entity may then take appropriate action through third-party contractual arrangements they may have established prior to purchase. In the

event that the offset credit has not yet been used or retired, it will be canceled in the market tracking system and removed from any Holding or Compliance Accounts. If there is an unintentional reversal in the forest sector, staff will deduct the necessary amount of offset credits from the Forest Buffer Account and retire them, whether or not they have been used or retired within the system. If there is an intentional reversal in the forest sector, staff proposes that the forest project developer replace the invalidated offset credits, whether or not they have been retired within the system.

N. Recognition of Compliance Instruments from Other Programs

1. Early Action Offset Credits

The proposed regulation includes a process for accepting offset credits from qualified existing offset projects into the ARB compliance offsets program to help create an initial supply of offset credits for the cap-and-trade program. Beginning in 2005, the Climate Action Reserve (CAR) and its predecessor, the California Climate Action Registry, began adopting voluntary GHG accounting protocols to encourage voluntary early action to reduce GHG emissions. ARB recognizes the rigor of the voluntary accounting procedures CAR adopted to establish that GHG emissions reductions are real, additional, and permanent. Staff proposes to allow eligible offset credits and ongoing projects under protocols developed for four project types to transition into ARB's compliance offset program. These project types are the four for which protocols are proposed for adoption as part of the cap-and-trade regulation: (1) U.S. Forest Projects, (2) Urban Forest Projects, (3) U.S. Ozone Depleting Substances Projects, and (4) Livestock Manure (Digesters) Projects.

Staff includes requirements in the proposed regulation that an offset program must meet in order to have its early action offset credits used for compliance purposes.

2. Sector-Based Offset Crediting Mechanisms

The regulation establishes a framework for accepting sector-based offset credits from developing countries. While staff is not proposing to approve any sector offset crediting programs or adopt any protocols for sector-based offset credits at this time, this framework should help provide a necessary incentive for developing countries to reduce their emissions and work toward meeting compliance-grade, sector-based offset credit requirements in California.

Each sector-based crediting program will need to be approved by the Board, and staff anticipates that a limited number of sector-based programs will be approved in the near-term because of the intensive review each program will undergo. Staff also proposes that the first sectors to be considered for approval be developed through existing partnerships, such as the Governors' Climate and Forests Task Force (GCF) and the International Carbon Action Partnership (ICAP). To that end, Reducing Emissions from Deforestation and Forest Degradation (REDD) is likely to be the first type of sector-based crediting

program brought to the Board for consideration, as is discussed in more detail in Chapter III: Overview of the Compliance Offsets Program.

Some general requirements have been proposed in the regulation that sector-based crediting programs should meet before being considered by the Board, but more detailed criteria and methodologies must be established for each sector prior to Board approval and acceptance of sector-based credits.

O. Enforcement and Penalties

ARB has authority in existing Health and Safety Code provisions to enjoin and set penalties for violations of its regulations. As such, staff has established in the proposed cap-and-trade regulation violations unique to the cap-and-trade program. These include defining a separate violation for each compliance instrument for each day that has not been surrendered as required, and a separate violation for each day or part of a day for which any other part of the regulation has been violated.

1. Jurisdiction

Staff recognizes that not all participants in the California cap-and-trade program will be located in California. The regulation contains a list of activities involved in the cap-and-trade program that would establish the jurisdiction of California over the entity. These include: registration, the purchase or holding of a compliance instrument issued by ARB, verification of an offset to be issued by ARB, or the receipt of any form of compensation resulting from participation in the transfer of allowances or offsets issued by ARB.

2. Authority to Suspend, Revoke, or Restrict Accounts or to Modify an Executive Order

In addition to conventional penalties, staff proposes that ARB may limit the ability of a registered entity to fully participate in the market as a response to violations by the entity. For voluntarily associated entities, staff proposes that the Executive Officer be able to suspend, revoke, or place transaction restrictions on the Holding Accounts of violators. For covered entities, staff proposes that the Executive Officer be able to place transaction restrictions on the Holding Accounts of violators. Staff also proposes that the Executive Officer be able to revoke the registration of entities in the Other Registered Participants category if they violate the regulations. Finally, staff proposes that the Executive Officer be able to suspend, revoke, or modify an existing Executive Order in response to violations by an entity.

P. AB 32 Requirements

AB 32 contains standards that apply to regulations that will be adopted for all GHG emissions-reduction measures (HSC section 38562) and additional requirements for market-based regulations such as a cap-and-trade program (HSC section 38570(b)). AB 32 also calls for ARB to direct public and private investment to the extent feasible toward disadvantaged communities and provide

an opportunity for small business, schools, affordable housing associations, and other community institutions to participate in and benefit from statewide efforts (HSC section 38565). AB 32 further requires that the GHG reductions be real, additional, permanent, quantifiable, verifiable, and enforceable.

The cap-and-trade program was developed in accordance with these AB 32 requirements, and this Staff Report presents supporting details. The following provides a brief response to each of the specific requirements set forth in sections 38562(b), 38562(d), and 38570(b) of the Health and Safety Code. The text in italics is verbatim from the particular section.

38562(b) In adopting regulations pursuant to this section and Part 5 (commencing with Section 38570), to the extent feasible and in furtherance of achieving the statewide greenhouse gas emissions limit, the state board shall do all of the following:

> *(1) Design the regulations, including distribution of emissions allowances where appropriate, in a manner that is equitable, seeks to minimize costs and maximize the total benefits to California, and encourages early action to reduce greenhouse gas emissions.*
>
> Staff has designed the proposed cap-and-trade program, including the allowance allocation system, to minimize the cost of implementation and compliance and to maximize the overall benefits. The allowance allocation system is equitable within and across sectors of the California economy, and its primary reliance on efficiency benchmarks and auction encourages early action to reduce emissions. In addition, the ability to bank allowances for future use provides an incentive for early action to reduce emissions.
>
> By ensuring that most GHG emissions in California are covered by the program, and that incentives are in place to ensure that the most cost-effective reductions are made, the program design shares the emissions-reduction burden equitably.
>
> *(2) Ensure that activities undertaken to comply with the regulations do not disproportionately impact low-income communities.*
>
> Staff has evaluated both the health and economic effects of the proposed program to ensure, to the extent feasible, that no disproportionate negative impact will occur in low-income communities. The overall health and environmental effects of the regulation are expected to be positive, and the program has been designed to minimize any economic costs that might affect low-income communities.
>
> *(3) Ensure that entities that have voluntarily reduced their greenhouse gas emissions prior to the implementation of this section receive appropriate credit for early voluntary reductions.*

ARB staff has recommended a system for distributing allowances in the industrial sector that will primarily rely on efficiency benchmarks for any free allocation. This type of approach rewards those who have already invested in emissions reductions. In addition, a portion of the allowances will be auctioned, and those who have taken early action will be less reliant on purchasing allowances at auction. This allowance allocation system provides appropriate credit for those who have taken steps to voluntarily reduce their emissions before the start of the cap-and-trade program.

(4) Ensure that activities undertaken pursuant to the regulations complement, and do not interfere with, efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminant emissions.

The proposed regulation is not expected to adversely affect federal or State ambient air quality standards. This issue has been analyzed and the results are provided within Chapter VI: Environmental Impacts of the Proposed Regulation, which summarizes the environmental analysis of the proposed regulation. In addition, staff analyzed the potential effect of the cap-and-trade program on air pollutant emissions, as discussed in Chapter VII: Co-Pollutant Emissions Assessment. California's existing programs to meet federal air quality standards will provide substantial emissions reductions. Staff's analysis indicates that the effect of the cap-and-trade regulation on criteria and toxic emissions is expected to be small compared to the emissions reductions resulting from California's existing programs to meet federal air quality standards.

(5) Consider cost-effectiveness of these regulations.

The flexibility of the cap-and-trade program, together with specific design features included in the regulation to help contain costs, ensures that the reductions needed to meet the requirements of the regulation will be cost-effective. Staff estimates that the allowance prices in the program, which provide a measure of the marginal cost of emissions reductions needed to comply, will be between $15 and $30 per metric ton in 2020. See Chapter VIII: Economic Impacts of the Proposed Regulation for a detailed discussion.

(6) Consider overall societal benefits, including reductions in other air pollutants, diversification of energy sources, and other benefits to the economy environment and public health.

The cap-and-trade program is a key element of the overall Scoping Plan strategy to scale back California's greenhouse gas emissions to 1990 levels by 2020, reduce our dependence on fossil fuels, stimulate investment in clean and efficient technologies, and improve air quality and

public health. By establishing an overall limit on GHG emissions, the program establishes the price signal needed to drive long-term investment in cleaner and more efficient types of fuels and energy sources, while affording covered entities flexibility to seek out and implement the most cost-effective options to reduce emissions. The program will also complement and support California's existing efforts to reduce criteria and toxic air pollutants.

(7) Minimize the administrative burden of implementing and complying with these regulations.

The proposed regulation will require a market tracking system (MTS) to record information about the holders of compliance instruments and trades of compliance instruments among market participants. The primary goal of the MTS will be to support the effective implementation of the cap-and-trade regulation and to reduce the costs and administrative burden associated with long-term cap-and-trade responsibilities.

The cap-and-trade program will also rely on a revised version of the Mandatory Reporting Regulation (MRR) as the primary mechanism for emissions reporting. A set of revisions to the MRR are being proposed by ARB staff concurrently with the proposed cap-and-trade regulation. These revisions are intended to align California's reporting requirements with the federal reporting rules recently enacted by U.S. EPA, and to ensure that the information collected by those covered by the cap-and-trade program is of sufficient quality to support the market program.

These requirements have been designed to strike a balance between the need for transparency in this new market and the need to minimize the administrative burden on those covered by the regulation and on ARB staff.

(8) Minimize leakage.

Staff proposes an allocation approach designed to minimize leakage and to give businesses and industries in the State sufficient time to reduce their emissions in a cost-effective manner. Allocating the allowances for free to industrial sources using emissions efficiency benchmarks will reward companies that have already made investments in energy efficiency and carbon reductions, and will benefit those that continue to produce goods in California.

(9) Consider the significance of the contribution of each source or category of sources to statewide emissions of greenhouse gases.

The cap-and-trade program has been designed to cover all emission sources for which adequate quantification of the emissions is sufficient to include in a market program. The program design exempts small sources

from direct coverage in the program by establishing an emissions threshold for inclusion of 25,000 $MTCO_2e$. However, because transportation fuels and use of natural gas by residential and commercial users is a significant portion of California's overall GHG emissions, the emissions from these sources are covered indirectly through the inclusion of fuel distributors.

38562(d) Any regulation adopted by the state board pursuant to this part or Part 5 (commencing with Section 38570) shall ensure all of the following:

(1) The greenhouse gas emission reductions achieved are real, permanent, quantifiable, verifiable, and enforceable by the state board.

The Mandatory Report Regulation is being revised to ensure that all reported data for sources in the cap-and-trade program provide the high quality data needed for a market-based program. This will ensure that any emissions reductions at covered sources will be real, permanent, quantifiable, verifiable, and enforceable.

The offsets portion of the cap-and-trade program also includes extensive requirements to ensure that any credits for offset projects are limited to emissions reductions or removals that are real, permanent, quantifiable, verifiable, and enforceable.

(2) For regulations pursuant to Part 5 (commencing with Section 38570), the reduction is in addition to any greenhouse gas emission reduction otherwise required by law or regulation, and any other greenhouse gas emission reduction that otherwise would occur.

The cap-and-trade program does not require specific emissions reductions from any sources, but instead places an overall limit on the emissions that are allowed by the covered sources. Because the emissions reductions from other Scoping Plan measures are insufficient to reduce emissions below the cap level, the cap-and-trade program will require emissions reductions in addition to those otherwise required by law or regulation.

(3) If applicable, the greenhouse gas emission reduction occurs over the same time period and is equivalent in amount to any direct emission reduction required pursuant to this division.

The cap-and-trade program places a limit on emissions from 2012 through 2020, and will require emissions reductions from those sources covered by the program over that time period. Other measures adopted under AB 32 are designed to get emissions reductions over the same time period to help achieve AB 32's emissions target for 2020.

AB 32 allows market-based mechanisms, such as a cap-and-trade program, to help meet the statewide GHG emissions-reduction goals.

Market mechanisms are used to supplement, rather than replace, direct regulation approaches. The purpose of using alternate compliance mechanisms is to accomplish AB 32's environmental goals in the most cost-effective way.

38570(b) Prior to the inclusion of any market-based compliance mechanism in the regulations, to the extent feasible and in furtherance of achieving the statewide greenhouse gas emissions limit, the state board shall do all of the following:

(1) Consider the potential for direct, indirect, and cumulative emission impacts from these mechanisms, including localized impacts in communities that are already adversely impacted by air pollution.

Staff's analysis of the potential for direct, indirect, and cumulative emissions impacts, including localized impacts in communities that are already adversely impacted by air pollution, is discussed in Chapter VII: Co-Pollutant Emissions Assessment. Staff's analysis indicates that the cap-and-trade regulation is expected to have a beneficial impact on emissions overall. California's existing programs to meet federal air quality standards will provide the majority of emissions reductions through 2020. The regulation has the potential to provide additional NO_x reductions if all greenhouse gas reductions are implemented locally, even without consideration of the criteria pollutant and toxic emissions reductions that the cap-and-trade program is expected to provide from transportation fuels and commercial and residential gas use. While the flexibility inherent in the cap-and-trade program could allow some facilities to increase GHG emissions, any related criteria or toxic emissions increases at these facilities would mean a smaller decrease in local emissions in 2020 when the existing air quality programs are taken into account. The cap-and-trade program will provide an incentive for covered facilities to decrease greenhouse gas emissions and any related emissions of criteria and toxic pollutants.

(2) Design any market-based compliance mechanism to prevent any increase in the emissions of toxic air contaminants or criteria air pollutants.

ARB's analysis indicates that the cap-and-trade regulation is expected to have a beneficial impact on air emissions by reducing emissions of criteria pollutants and toxics. As discussed in Chapter VII: Co-Pollutant Emissions Assessment, based on the available data, current law and policies that control industrial sources of air pollution, and expected compliance responses, ARB believes that emissions increases due to the regulation at the statewide, regional, or local level are extremely unlikely, at best. Nevertheless, as described in Section Q: Program Monitoring, ARB is committed to monitoring the implementation of the cap-and-trade

regulation to identify any situations where the cap-and-trade program has led to an increase in criteria pollutant or toxic emissions.

(3) Maximize additional environmental and economic benefits for California, as appropriate.

The cap-and-trade program is a key element of the overall Scoping Plan strategy to scale back our greenhouse gas emissions to 1990 levels by 2020, reduce our dependence on fossil fuels, stimulate investment in clean and efficient technologies, and improve air quality and public health. By establishing an overall limit on the GHG emissions, the program establishes the price signal needed to drive long-term investment in cleaner and more efficient types of fuels and energy sources, while affording covered entities flexibility to seek out and implement the most cost-effective options to reduce emissions. The program will also complement and support California's existing efforts to reduce criteria and toxic air pollutants.

Staff's evaluation of the cap-and-trade program is consistent with these requirements of AB 32. In addition, the evaluation is consistent with ARB's Environmental Justice Policy adopted by the Board in 2001.[31] State law defines environmental justice as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.[32] ARB is committed to making environmental justice an integral part of its activities. The Board approved its Environmental Justice Policies and Actions (Policies) on December 13, 2001, to establish a framework for incorporating environmental justice into ARB's programs consistent with the directives of State law. These policies apply to all communities in California, but recognize that environmental justice issues have been raised more in the context of low-income and minority communities.

As part of the economic, emissions, and environmental assessment of the cap-and-trade regulation, staff assessed the emission reduction opportunities available to sources covered by this regulation. This evaluation considered the potential for the incentives and flexibility inherent in the cap-and-trade program to result in direct, indirect, and cumulative emission impacts, including localized impacts in communities that are already adversely impacted by air pollution. Based on the available data and current law and policies that control

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[31] http://www.arb.ca.gov/ch/programs/ej/ejpolicies.pdf

[32] Senate Bill 115 (Solis, Statutes of 1999, chapter 690); California Government Code § 65040.12(c)

localized air pollution, and expected compliance responses to the cap-and-trade regulation, ARB concludes that, increases in localized air pollution, including toxic air contaminants and criteria air pollutants, attributable to the cap-and-trade program are extremely unlikely. For more information see Chapter VII. Co-Pollutant Emissions Assessment and Appendix P: Co-Pollutant Emissions Assessment.

Q. Program Monitoring

The cap-and-trade program is made up of many elements, must serve a large number of important objectives at the same time, and relies on the cumulative actions of a large number of participants operating in a complex market system. Accordingly, unanticipated effects and results could occur over the life of the program. ARB will monitor the program to ensure that it is achieving emissions reductions and other AB 32 objectives and is not resulting in unanticipated outcomes. ARB is committed to review and revise policies, protocols, and procedures as more information becomes available.

Once the cap-and-trade program is implemented, ARB will monitor whether, over time, the program is meeting all of the objectives set forth in AB 32. These objectives include certain beneficial outcomes that should be maximized, and also certain adverse consequences that should be minimized or avoided.

Using the results of monitoring, ARB will regularly (at a minimum, once every three-year compliance period) evaluate whether the objectives identified by statute are being achieved. Periodic evaluation will be coordinated with other actions and information-collection occurring at the end of compliance periods.

ARB will conduct its evaluation sufficiently in advance of the end of each compliance period to allow ARB sufficient time to adjust the cap-and-trade program, if warranted, before commencement of the next compliance period. If ARB determines during its periodic review that the cap-and-trade program is not achieving the objectives as defined by AB 32, or if substantial, unanticipated adverse environmental effects are identified, ARB will revise the operation of the program accordingly.

ARB has designed the regulation to avoid unintended consequences. However, given the complexity of the program, it is important to incorporate systems to monitor and evaluate the performance of the cap-and-trade program. ARB proposes to monitor emissions leakage, the generation and use of offset credits, and the potential for emissions increases to ensure that the program continues to meet the diverse objectives described in Health and Safety Code sections 38562(b) and 38570(b) over time.

1. Achieving the Greenhouse Gas Limit

At its core, the cap-and-trade regulation sets a limit on greenhouse gas emissions. ARB ensures that the cap is met by distributing a limited number of allowances to emit greenhouse gases. At the end of each three-year compliance

period, ARB will determine whether the limit has been met by examining whether the number of compliance instruments turned in by covered entities matches the emissions reported under the Mandatory Reporting Regulation plus the allowable number of offsets. ARB will post the results of its evaluation on its website or otherwise make this information publicly available.

The regulation requires entities that do not meet their compliance obligation by the deadline to turn in additional allowances, and provides for enforcement actions against covered entities that do not meet their obligations. If these mechanisms are not sufficient to ensure that the cap is met, ARB will reevaluate the regulation to strengthen these provisions.

ARB will also monitor both the price that is bid to purchase allowances at the quarterly auctions and the price at which allowances are bought and sold on the secondary market to determine whether the market is functioning as expected. Monitoring the price and the status of bids for allowances in the Allowance Price Containment Reserve will also help alert ARB staff to price increases and the need to determine whether these increases are due to legitimate unforeseen events or market manipulation.

2. Detecting Market Manipulation

ARB has collaborated closely with numerous experts to craft regulatory requirements that will provide the means to identify and ultimately prevent market manipulation. However, as with any regulation, we cannot guarantee that all regulated parties will abide by the letter and the spirit of regulatory requirements. Because of this issue, the regulation proposes registration of all market participants to ensure that third-party participants can be vetted; and requires disclosure of affiliates for whom allowances are owned ("beneficial holdings"), to help identify potential collusion or other forms of market manipulation. If market manipulation or other illicit activities are detected, ARB will work with the appropriate authorities to initiate enforcement activity and, if necessary, reevaluate regulatory requirements to avoid future incidents.

3. Leakage

ARB has designed the regulation to minimize leakage by placing covered entities on an equal footing with their non-covered competitors (both those that are out-of-state, and those that are below the threshold for inclusion in the program), and ARB is committed to monitor how covered sectors address carbon costs once the program is in place. The focus of this monitoring will be on whether industries in a sector increase their product price in response to the carbon cost, whether or not the price increase (or inability to increase the price) led to a change in market share for the covered entities, and the relative share of the California market served by in-state production and by imports. ARB staff will also work with covered sources and other interested parties to identify additional sources of information at the state level that could improve ARB's ability to monitor leakage. Should ARB find that leakage is occurring despite the

safeguards in the regulation, ARB will examine mechanisms to address leakage, including border adjustments or changes to the allowance distribution system.

4. Offset Projects

The regulation proposes a robust monitoring program for offset projects—both the verification that the offsets are real, additional, and enforceable, and that Offset Project Operators, verifiers, and Offset Project Registries are operating according to regulatory requirements. Offset Project Registries are required to conduct oversight of their registry program and randomly audit verifications to ensure that ARB regulatory requirements are being met by Offset Project Operators and verification bodies. ARB will have a rigorous oversight of its approved Offset Project Registries. Each year, the Offset Project Registries will provide ARB with a report providing basic information related to any offset project listed using a Compliance Offset Protocol and any findings related to verification audits. ARB will make this report publicly available. The Offset Project Registries will be required to provide any information related to an offset project when requested by ARB as part of its oversight of the Offset Project Registry. During the course of an offset project, the Offset Project Registry will track and report any guidance or information provided to an Offset Project Operator related to a compliance offset project to ARB every month. This will ensure that ARB understands any issues or concerns related to its compliance offset program as Offset Project Operators are implementing the actual offset projects.

In addition, the ARB regulatory offset verification program is designed to provide a transparent process by which ARB can review verification documents and fully understand any findings uncovered during the course of verification of an offset project by an ARB accredited verification body. ARB will also develop an audit and oversight program for offset project verifications.

5. Offset Protocols

Offset protocols include several elements to support existing health and environmental protection measures. Specifically, each individual offset protocol requires all offset projects to be developed in compliance with all federal, state, and local laws, regulations, ordinances, and any other legal mandate, including all CEQA and National Environmental Policy Act (NEPA) requirements where applicable. The Offset Project Operator is required to attest to ARB that their offset project meets these requirements. If, during verification, it is found that the offset project does not meet any of these requirements, the project is ineligible to be issued ARB offset credits until the project is in compliance. In addition to regulatory compliance, during project listing, Offset Project Operators must provide detailed project information, which must be posted on the Internet and available for public review.

Because of the possibility that forest projects could unintentionally “reverse,” negating the benefits of those projects because of fire, pest infestation, or disease, ARB is requiring the creation and maintenance of a Forest Buffer Account to be populated by a percentage of ARB-issued offset credits from forest

offset projects. ARB will regularly monitor the number of offset credits in this Buffer Account to ensure it is sufficient to offset unintentional reversals. If the Buffer Account is found to be insufficient, ARB will revisit the contribution required by forest offset projects to this account.

Even with these safeguards, ARB recognizes that there could be unanticipated impacts from offset projects. ARB will monitor and assess offset project documentation and potential impacts from offset project implementation at a minimum of once each compliance period. In the event that unintended impacts are identified during this review, and they are substantial enough to interfere with or undermine the achievement of the objectives for the cap-and-trade program as defined by AB 32, including the objectives set forth in 38562(b) and 38570(b), ARB would develop and implement appropriate responses to rectify identified health or environmental effects. Potential responses ARB would consider, if warranted, include, but are not limited to, revising the types and/or geographic location of offset projects and disallowing the use of some types of offset credits. These potential future responses are not, however, warranted based on currently available information, and their imposition today would unnecessarily conflict with AB 32's other objectives. Monitoring of the implementation of the U.S. Forest Projects Protocol is further discussed in the Adaptive Management section of Appendix O: Functional Equivalent Document.

6. Emissions Increases

ARB's analysis indicates that the cap-and-trade regulation is expected to have a beneficial impact on air emissions by reducing emissions of criteria pollutants and toxics. Based on the available data, current law and policies that control industrial sources of air pollution, and expected compliance responses, ARB believes that emissions increases due to the regulation at the statewide, regional, or local level are extremely unlikely, at best.[33] Nevertheless, ARB is committed to monitoring the implementation of the cap-and-trade regulation to identify any situations where the cap-and-trade program has led to an increase in criteria pollutant or toxic emissions.

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[33] Not all emissions increases at facilities covered by the cap-and-trade program will result from the program itself. The cap-and-trade program will place a new regulatory requirement and a new cost on GHG emissions from all covered facilities, so that the program provides an incentive to minimize increases or to decrease GHG emissions and any related emissions of criteria or toxic emissions. While the program provides flexibility that could allow increased production due to economic growth, such increases would not be caused by the cap-and-trade program. Staff believes that only in very limited circumstances would a localized emissions increase be the actual result of the incentives created by the cap-and-trade program (e.g., shifting of production within a company from an inefficient facility with higher compliance costs to a more efficient facility that results in higher emissions at the more efficient facility).

As discussed in the Adaptive Management section of Appendix O: Functional Equivalent Document, at least once each compliance period, ARB will use information collected through the mandatory reporting regulation, the cap-and-trade regulation, the industrial efficiency audit, and other sources to evaluate how facilities are complying with the cap-and-trade regulation. ARB will also solicit information from local air districts regarding permit modifications and new permit applications for covered sources. This information will be used to identify compliance activities that could lead to increased emissions and to determine whether further investigation of potential criteria pollutant and toxic emissions is warranted.

If unanticipated adverse localized emissions impacts that can be attributed to the cap-and-trade regulation are identified during this periodic review, ARB will consider whether these impacts affect the achievement of the program objectives. If so, ARB will promptly develop and implement appropriate responses. Potential responses ARB would consider include, but are not limited to, using allowance value from the cap-and-trade program to mitigate localized emissions increases, providing incentives for energy efficiency and other emissions-reduction activities within the community, or restricting trading or prohibiting certain compliance responses in specifically identified communities. These potential future responses are not, however, warranted based on currently available information, and their imposition today would unnecessarily conflict with AB 32's other objectives.

III OVERVIEW OF THE COMPLIANCE OFFSETS PROGRAM

A. Offset Credits Issued by ARB

Individual projects can be developed to achieve GHG reductions from activities not otherwise regulated or covered under the cap-and-trade program. These projects can generate offset credits, or verifiable emissions reductions whose ownership can be transferred to others, including entities with a compliance obligation under the cap-and-trade program. In addition to providing compliance flexibility, the inclusion of offset credits in the program will support the development of innovative projects and technologies from sources outside capped sectors that can play a key role in reducing emissions both inside and outside California. Offset projects can reduce emissions, thereby generating offset credits that can be used by entities who must comply with the program. The use of an offset credit allows a covered entity to forgo some amount of on-site reductions by offsetting emissions elsewhere. Therefore, the integrity of the offsets program is crucial to achieving the AB 32 goal.

As required by AB 32, any reduction of GHG emissions used for compliance purposes must be real, permanent, quantifiable, verifiable, enforceable, and additional (HSC §38562(d)(1) and (2)). Offset credits issued by ARB must be quantified according to Board-adopted methodologies. The proposed regulation includes provisions to verify and enforce the reductions incentivized through the generation and retirement of offset credits. The criteria for compliance offset credits will ensure that the reductions are quantified accurately and are not double-counted within the market tracking system.

Offset credits can provide covered entities a source of low-cost emissions reductions. Reductions achieved through the offset program must be measured using rigorous quantification methods. Offset protocols provide a basis to determine whether offset projects are also additional. Establishing that offset projects are additional is one of the most important factors for the validity of individual offset credits. After a project uses an approved offset protocol to quantify its emissions reductions, it must continue to monitor, report, and verify its emissions reductions.

1. Role of the Offsets Program

The offsets program is designed to increase compliance flexibility and contain costs associated with complying with cap-and-trade program requirements. Because offset credits are expected to cost less than allowances, they are considered by many to be the most important cost-containment tool in the cap-and-trade program. Offset credits allow greater flexibility for covered entities to cover their emissions by offering an additional supply of compliance instruments in the market, which can create a demand for lower-cost emissions reductions and reduce the overall cost of achieving the emissions cap.

In addition to increasing the cost-effectiveness of the program, the California offsets program can benefit other AB 32 goals by:

- Stimulating emissions-reduction opportunities and technological innovation in sectors outside of the capped sectors.
- Encouraging early emissions-reduction activities while providing a transition period for industry to develop and deploy low-GHG technologies.
- Promoting technology and knowledge transfer between developed and developing countries, such as helping to preserve rainforests in danger of deforestation.
- Providing environmental, social, and economic benefits, such as reduced air or water pollution through improved land management practices and wildlife habitat.

Staff recognizes that a robust supply of offset credits can help to contain the costs of a cap-and-trade program. To promote the supply of offsets, staff proposes that: (a) ARB issues offset credits for projects using ARB-approved protocols, and (b) ARB recognizes offset credits from ARB-approved offset programs. Approved programs could include sectoral programs such as those Reducing Emissions from Deforestation and Forest Degradation (REDD) in developing countries. Offset credits from linked programs (such as WCI partner jurisdictions) would also be eligible for use in California's cap-and-trade program. ARB staff incorporates provisions in the proposed regulation to allow these two methods to be used following Board approval of specific protocols or programs.

Staff has developed four compliance offset protocols, , which can be found in Parts II through V of the Cap-and-Trade Program Staff Report, for use under the compliance offset program.. These protocols include the U.S. Forest Projects Protocol, the Livestock Manure (Digester) Projects Protocol, the Urban Forest Projects Protocol, and the U.S. Ozone Depleting Substances Projects Protocol. They are incorporated by reference in the proposed regulation and are being considered for adoption by the Board as part of this rulemaking package. While the program contains provisions to allow offset projects from North America, staff is taking offset protocols applicable in the United States to the Board for approval as part of this rulemaking package.

For these four protocols, staff relied on Climate Action Reserve (CAR) work on the four protocols for use in the voluntary offsets market. Staff recognizes the extensive contributions that stakeholders and experts have made to the CAR protocols, including fashioning effective solutions to difficult problems. Accordingly, ARB is relying on this work to help support ARB's offset quality objectives, as well as provide continuity and stability for offset projects both within California and other parts of the United States.

In addition to these four protocols, staff intends to review and adopt additional offset protocols in the future. Staff will evaluate additional offset project types and protocols. Protocols developed by third parties may be reviewed and, if applicable, be considered for adoption by ARB.

To ensure that there is a ready supply of offset projects developed according to Board-approved protocols, staff proposes to work with qualified third-party offset programs to bring offset credits from new offset projects into the offset program. Staff recognizes that third-party offset programs have existing capabilities and infrastructure that can be deployed quickly to enhance the supply of offset credits. The proposed regulation includes conditions and processes under which third-party programs can be approved to generate offset credits for compliance use according to ARB-approved protocols.

In addition to protocols developed and approved by ARB, staff proposes to recognize offset credits from existing offset projects under protocols developed for the four project types for purposes of early action. The proposed regulation includes a process for offset credits from qualified existing offset projects to be accepted into the compliance offsets program, to help create an initial supply of offset credits for the cap-and-trade program.

2. Transparency in the Offsets Program

Transparency is critical to the environmental integrity and effective administration of an offset program. The proposed regulation establishes an open and transparent offsets system to build confidence in the long-term success of the cap-and-trade program. ARB will ensure that information regarding offset projects and assessments will be made publicly available. The proposed regulation establishes requirements for offset projects and the offset credits they are issued to be listed on a publicly available webpage.

3. ARB as an Offset Program Administrator

An important procedural aspect of the offset program relates to the entity that issues offset credits. Staff proposes for ARB to play the role of a credit-issuing body, with provisions for third parties to fulfill some of these responsibilities subject to ARB oversight.

Offset credits are created for GHG reductions or removals that have been quantified, verified, and recorded. Credit-issuing bodies review all project quantification and verification information to determine if GHGs have been reduced. Once the credit-issuing body determines that the reduction occurred, usually based on third-party verification statements, they create (or issue) offset credits, each of which represents one metric ton of CO_2e.

As the offset program administrator, ARB would fulfill specific roles during the offset credit creation process. These roles include: approving compliance offset protocols as required by AB 32; reviewing and listing offset projects in the system; overseeing monitoring, reporting, and verification activities; and making

the determination of whether offset credits should be issued and, if so, how many. The regulation also proposes provisions to allow third parties that operate offset programs to fulfill some of these same roles, subject to ARB audits and oversight. These registries would be allowed to list offset projects in their own system and oversee monitoring, reporting, and verification activities. These third-party offset programs—referred to as *Offset Project Registries* in the proposed regulation—must meet requirements included in the proposed regulation and be approved by ARB. They must share all information they collect for offset projects with ARB, and make this information publicly available. Staff proposes to allow Offset Project Registries to assume these roles to access their existing capabilities and infrastructure so that the offsets program can be deployed quickly to enhance the supply of offset credits. The obligations and services of Offset Project Registries are discussed later in this Chapter.

4. General Requirements for Offset Credits Issued by ARB

The proposed regulation includes provisions to ensure all offset credits used for compliance purposes are real, additional, permanent, quantifiable, verifiable, and enforceable. Ensuring the environmental integrity of the offsets program is critical to guaranteeing the credibility of the entire cap-and-trade program, achieving the environmental objectives of real emissions reductions, and preserving the value of offset credits to project developers, offset buyers, and all market participants. To assure offset quality, the proposed regulation includes rigorous and transparent quantification methodologies, training and oversight of independent ARB-accredited verifiers, and a registration and tracking system.

The proposed program relies on offset protocols that are developed with stakeholder input, standardized, and approved by the Board. The offset quantification and the regulatory offset verification requirements are designed to reduce subjectivity and uncertainty. These procedures are the cornerstone of the offsets program and will help ensure the rigor and integrity of offset credits. The offsets verification program will require that verifiers demonstrate competence in each specific project type, employ conflict-of-interest assessments, and include random verifier audits and strict performance evaluations to ensure that verification activities are conducted accurately and consistently. The registry system for compliance instruments is being designed to provide strong enforcement capabilities, including mechanisms to prevent double-counting, public disclosure requirements, and methods to clearly define ownership.

5. Approving Compliance Offset Protocols

Offset credits issued by ARB must be generated using offset protocols adopted by the Board. The proposed regulation establishes a process by which the Board will approve and amend protocols and their quantification methodologies based on staff's evaluation and a public process. These protocols will be made publicly available so that anyone interested in developing an offset project can do so according to Board-approved standards.

Four protocols are part of this rulemaking package, as described below. ARB staff will periodically propose new offset protocols or revisions to previously approved protocols to reflect the current regulatory environment and latest scientific information, to the Board. Before ARB staff brings new protocols or updates to existing protocols to the Board, a public stakeholder process will be conducted to develop, review and revise the offset protocols. Before the Board adopts a new protocol there will be a separate CEQA review to assess the environmental impacts associated with that protocol.

Four Protocols for Board Approval

As part of this rulemaking package, staff is bringing four offset protocols to the Board for approval:

- **U.S. Ozone Depleting Substances (ODS) Projects Protocol:** Destruction of ODS from refrigerant and foam-blowing agents sourced from and destroyed within the United States. Production of ODS is being phased out through the Montreal Protocol, but there are significant banks from which these gases will be emitted in coming years unless they are destroyed. ODS destruction has stratospheric ozone benefits in addition to climate benefits.

- **Livestock Manure (Digesters) Projects Protocol:** Capture and destruction of methane from anaerobic manure treatment and/or storage facilities on dairy cattle and swine farms within the United States.

- **Urban Forest Projects Protocol:** Urban tree planting projects by municipalities, educational campuses, utilities, and partner organizations to sequester carbon.

- **U.S. Forest Projects Protocol:** Increasing sequestered carbon or avoided GHG emissions due to forest management activities in three project types: reforestation, improved forest management, and/or avoided conversion within the United States.

ARB has coordinated with the other WCI partner jurisdictions to develop the offset program, and three of these proposed protocols have been reviewed as part of that effort.[34] The U.S. Ozone Depleting Substances Projects Protocol has not been part of this review process to date, but the WCI Partner jurisdictions are

[34] Det Norske Veritas. *Review of Existing Protocols Against WCI Offset Criteria.* For the Western Climate Initiative. April 2010. Found at: http://www.westernclimateinitiative.org/component/remository/Offsets-Committee-Documents/WCI-Review-of-Existing-Offset-Protocols.

currently reviewing it and assessing it relative to the WCI offset criteria recommendations. Staff will continue to work within WCI to address any issues that may arise with use of this protocol in the context of linking with a WCI Partner.

Staff is relying on the work that the Climate Action Reserve (CAR) has done to develop these four protocols for use in the voluntary offset market. In reviewing these protocols for possible use in the cap-and-trade program, staff examined all aspects of the protocols, including but not limited to the following:

- Mechanisms for ensuring permanence in forest projects, to ensure that they are effective and enforceable by ARB.
- Technical details, including incorporating minor adjustments to emission factors.
- Modifications to each protocol to align them with the requirements of the cap-and-trade program, such as aligning project start eligibility dates and crediting periods, or alignment of terms and definitions.

On June 23, 2010, staff held a workshop to discuss the transition of the four CAR protocols for use in a compliance program. Specifically, this workshop focused on options for aligning the most recent versions of these protocols with the offset criteria proposed in the cap-and-trade regulation. In addition to seeking public input, a CEQA review of each protocol has been completed and is included as part of this regulatory package in Appendix O: Functional Equivalent Document.

6. Requirements for Compliance Offset Protocols

Compliance offset protocols serve as a cornerstone to ensure that reductions are appropriately quantified, monitored, reported, and documented. Protocols taken to the Board for adoption will consist of standardized methods that quantify reductions based on specific criteria and pre-established calculation methods. This approach will streamline the calculation of project baselines and determination of additionality of projects by using standard eligibility criteria that ensure that projects are additional. Protocols approved by the Board will include project-type-specific monitoring and reporting requirements and methods for addressing leakage.

a. Additionality

Protocols approved by the Board provide a basis to determine whether offset projects are additional. Approved protocols are designed to ensure that the determination of additionality will be replicable for all offset projects of the same type. Additionality in the offset program requires that ARB only credit projects that would not have otherwise occurred in the absence of an offsets mechanism. Staff designed the offset system with this requirement to be consistent with AB 32, which requires that emissions reductions used for compliance must be “in addition to any greenhouse gas emissions reduction otherwise required by law or

regulation, and any greenhouse gas emissions reduction that otherwise would occur" (HSC §38562[d][2]). Most existing offset programs have excluded project activities required by law or regulation from receiving offset credits in their programs. However, staff expects some GHG emissions-reduction activities not required by law or regulation to occur under a business-as-usual scenario. ARB is defining *additionality* to exclude these offset projects from receiving credit.

The proposed regulation establishes that an offset project, which has already begun to generate offset credits under a protocol approved by the Board, may continue to generate offset credits until the end of its crediting period, even if in the future regulations are adopted that mandate reductions from projects that have already begun to generate offset credits. At the time a newly adopted regulation takes effect, a project type or technology would cease to be additional for new offset projects wishing to enter the system. Generally an offset project will be developed if the revenue it expects to generate over the length of the crediting period will cover its upfront investment and ongoing maintenance costs. This means that an offset project will be implemented only if it is expected to be financially beneficial to do so over that length of time. Therefore, staff believes that offset projects should be credited for emissions reductions throughout the entire crediting period. Crediting periods are discussed in more detail later in this Chapter.

b. Project Baselines

Project baselines are a core component of the quantification process and the determination of additionality. Project baselines are conservative estimates of business-as-usual reductions or removals for an offset project. The difference between the project baseline and the reductions achieved by the offset project is what will be considered beyond business-as-usual, and therefore creditable as an offset. Therefore, in the proposed regulation, staff proposes to require that protocols include a method for calculating project baselines to quantify a project's emissions reductions. The GHG reductions or removals can only be assessed if the baseline reflects an accurate and realistic business-as-usual emissions scenario.

c. Accounting for Leakage

In the context of offset credits, *leakage* refers to a shift in emissions due to the offset project activity to another place that negates some or all of the emissions reductions achieved by the offset project. Leakage can occur with offset credits because they are based on individual projects. The proposed regulation requires that protocols include a clear methodology to account for leakage when quantifying emissions reductions from offset projects. Two types of leakage must be accounted for in offset projects, if applicable for the specific offset project type: activity-shifting and market-shifting leakage. Any leakage associated with an offset project type will be factored into the final calculation of emissions and emissions reductions for individual offset projects.

d. Accounting for Uncertainty

When uncertainty exists in quantifying GHG reductions, ARB will only issue offset credits when there is a high level of confidence that reductions actually occurred. Staff proposes to employ a principle of conservativeness in the quantification of emissions reductions. This method will ensure that the accounting will underestimate rather than overestimate any reductions when there is a high level of uncertainty. Staff prefers this approach to applying an arbitrary discount factor to account for uncertainty after emissions reductions have been verified. Applying a single discount factor across projects to account for risk and uncertainty could penalize projects that achieve truly real and additional emissions reductions.

e. Permanence Requirements

Permanence refers to the period of time that an emissions reduction must stay absent from the atmosphere. In general, it is equal to the duration of an emitted GHG in the atmosphere. Requiring permanence in the offsets program ensures that if there is a risk of reversal, the atmosphere can be made whole. It also ensures that offset credits are equivalent to emissions reductions that would be achieved from covered entities at their facilities. Permanence is particularly an issue in projects with a risk of GHG reversal, such as sequestration-based projects. Disturbances, such as fire, insects, disease, and project mismanagement or failure can return sequestered carbon or release GHGs to the atmosphere.

In the case of sequestration-based projects, the proposed regulation requires an upfront commitment by the project developer to permanently maintain GHG reductions to ensure permanence. To achieve this, staff proposes to establish a Forest Buffer Account to provide insurance, in the case of an unintentional GHG reversal. The details of the Forest Buffer Account are discussed later in this Chapter. Although staff includes the Forest Buffer Account to deal with unintentional reversals, there are still risks that intentional reversals can occur in forest projects. In this, case the forest owner must replace all credited carbon that has been reversed.

f. Crediting Periods

Each protocol must establish a crediting period for the relevant offset project type. The crediting period refers to the period that an offset project is allowed to be issued compliance offset credits. Without certainty about a project's life span, there may be too much risk for a project to attract investors. Therefore, staff understands there must be some guarantee that the emissions reductions achieved according to a protocol will be eligible to generate offset credits for a given period. However, some types of offset projects could no longer be valid for generating offset credits in the future. This could be because the offset projects have become unadditional because business practices change or the sources are now suited for direct regulation or another market-based incentive program. Staff determined that there must be a balance between guaranteeing investment

certainty and allowing ARB to update methods and quantification, as well as to reevaluate and readjust baseline and additionality requirements in protocols in the future.

To achieve this balance, staff proposes to set a range for crediting periods. For non-sequestration projects, each protocol will include a crediting period between seven and 10 years. Staff believes that this is sufficient time needed to make an investment attractive for most non-sequestration projects. For sequestration-based projects, each protocol will include a crediting period between 10 and 30 years. Staff recommends this period for sequestration projects because they require long-term investment and commitment by project developers, and these projects achieve gradual GHG removals over longer timescales. Staff will establish a crediting period for a specific project type in each protocol.

The proposed regulation includes two types of crediting periods: an initial crediting period and a renewed crediting period. The initial crediting period occurs once and begins on the date that the first verified GHG reductions occur according to an offset verification statement submitted by an ARB-accredited verifier. Offset projects may qualify for renewed crediting periods if they continue to meet the requirements for additionality. An offset project must also utilize the most updated version of an approved protocol for that offset project type at the time of renewal. An offset project that does not involve sequestration of GHGs may be renewed twice. Staff believes this is generally the amount of time that an offset project in industrial sectors will remain additional. There is no limitation on the number of times a crediting period may be renewed for sequestration-based offset projects; however, when added together the crediting periods may not exceed a total of 100 years.

7. Requirements for Offset Projects

The proposed regulation establishes requirements for offset projects if they want to be issued offset credits. These include using a Board-approved protocol, meeting the requirements for additionality, being located in an applicable jurisdiction, and complying with all applicable laws and regulations at the national, state or provincial, and local levels. Throughout this Staff Report, those that develop offset projects are referred to as offset project developers, without elaborating on who these parties may be. Under the proposed regulation, those that have legal authority to implement offset projects—referred to as *Offset Project Operators* in the proposed regulation—must identify themselves to ARB or an Offset Project Registry. In most cases these are facility operators or landowners. Many times facility operators or landowners will contract with third- party investors to assist in the development, implementation, and maintenance of the project. Staff recognizes that some facility operators and landowners may not be the parties implementing and overseeing the offset project; therefore, staff is allowing these parties to identify another party—referred to as an *Authorized Project Designee* in the proposed regulation—to be identified as responsible for the offset project. In the proposed regulation, a facility operator or landowner may delegate responsibilities, such as

communications with ARB or an Offset Project Registry regarding the offset project, to an Authorized Project Designee. In some cases, the facility operator or landowner may also assign rights to own offset credits that are issued to the offset project to the Authorized Project Designee or another third party.

a. Requirement to Use a Compliance Offset Protocol

An offset project developer must use a protocol approved by the Board to qualify for the issuance of offset credits. Staff will make all approved protocols available on ARB's public website.

b. Requirements for Additionality

Offset project developers must ensure that offset credits generated under their project are considered additional. To be additional GHG reductions must result from activities that:

1. Are not required by or undertaken to comply with any federal, state or local law or ordinance, including any regulation, consent order, and stipulated agreement or Memorandum of Understanding.

2. Are not considered common practice or would not have occurred under a business-as-usual scenario.

3. Were not commenced prior to January 1, 2007.

4. Exceed a project baseline calculated by a protocol for an offset project of that type.

Establishing the eligibility date for an offset project is critical to determining the additionality of offset projects. The eligibility date is the date from which a project can be issued offset credits by ARB. ARB will not issue offset credits for emissions reductions until after they have been verified. For the issuance of offset credits, ARB is proposing that offset projects which commence on or after January 1, 2007, be eligible. This date is the implementation date of AB 32 and provides for a better likelihood that the project was implemented to achieve AB 32 goals. Staff is also proposing that when recognizing offset credits issued according to non-ARB offset protocols or those issued by other programs approved by ARB, the eligibility date may differ from the date for ARB-issued offset credits. For purposes of recognizing projects undertaken to achieve early action GHG reductions, staff may recognize offset credits issued prior to January 1, 2007. The specific eligibility date requirements will be established depending on the evaluation of a specific program or set of protocols.

c. Locations of Offset Projects

While staff proposes to allow offset projects from North America to be credited under ARB-approved protocols, staff is only taking protocols to the Board for approval as part of this rulemaking package that are applicable for projects in the United States and its territories. Staff plans to evaluate how the four protocols

being taken to the Board can be expanded to include projects in Mexico[35] and Canada. Although staff encourages offset projects to be developed in California, it recognizes out-of-state projects will expand the scope of the program to allow for more low-cost GHG reduction possibilities to be incorporated and reduce the overall costs of the program. Therefore, staff recommends that ARB issue offset credits for projects located in the U.S., Canada, and Mexico. Staff proposes that all GHG reductions for offset projects, whether they are located within or outside of California, be verified by an ARB accredited third-party verifier, and that ARB have the ability to audit all accredited verifiers.

Offset credits from projects located outside of North America may also be used for compliance if they are issued by an outside program that is approved by the Board, though no such approval of another program is being recommended at this time. Recognition of offsets issued by other programs is discussed in more detail in Section B of this Chapter.

Staff's intent in approving protocols is that the standard for additionality will be set to reflect the most stringent regulatory or legal requirements among linked WCI partners. This would result in the most conservative assessment of GHG reductions, helping to ensure the integrity of the offset system. Setting an additionality standard based on the most stringent regulation in the region would remove any incentive to weaken or solely maintain environmental protections to qualify more offset projects. For some project types it will be difficult to apply this standard in the protocols based on regional differences. For these project types, staff may address regional differences using alternative methods.

d. Environmental Assessment Requirements

In the proposed regulation, staff includes requirements that offset projects meet all local, state, and federal laws for environmental assessments. The purpose of including this requirement is to ensure that offset project developers assess and disclose any potential impacts associated with implementing their offset projects. While staff is not requiring that offset projects meet specific requirements for environmental assessments, this requirement acknowledges the importance of all potential projects adhering to the environmental laws of the jurisdiction in which the project is located. For example, new offset projects in California may be subject to local permitting processes and, if not exempt, environmental review under CEQA.

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[35] Staff does not intend to evaluate an ODS protocol for offset projects in Mexico because the substances covered under the protocol have not yet been completely phased out in developing countries.

8. Listing Offset Projects

The proposed regulation requires that project developers "list" their projects—or submit information pertaining to their offset projects—with ARB or an Offset Project Registry. Listing establishes a mechanism for a project developer to record information on their offset project for ultimate issuance of offset credits. Project listing requires the submittal of information on each project for transparency purposes. The requirements for what information must be submitted can be found for each type of offset project in its corresponding protocol, all of which are incorporated by reference in the proposed regulation. Before listing, a project developer must register for an account with ARB to hold compliance instruments and must attest to ARB that all information they submit for listing purposes is truthful and accurate. These attestations will be used for enforcement purposes.

All listed projects and associated information will be posted on a publicly available website. Once ARB or an Offset Project Registry has determined that all the information submitted by the project developer is complete and that the offset project generally meets the requirements for additionality, it will be listed as a "proposed" project on the website. This status will change to an "active" project once the project developer submits its verification statements (attested to by an ARB-accredited verification body) and ARB or an Offset Project Registry issues an offset credits for the GHG reductions. Changing the status of the offset project from "proposed" to "active" will allow the public to know that the offset project has begun to be issued offset credits and has completed its first verification process.

The listing process is not intended to be an approval process for offset projects. The determination that an offset project meets all the regulatory requirements occurs at the time an accredited verifier issues a positive or qualified positive offset verification statement and ARB or the Offset Project Registry issues an offset credit based on that statement. This means that some offset projects may be listed as a proposed project but never have the status changed to an active project or receive offset credits.

Offset project developers are required to list their offset projects for an initial crediting period no later than the date they submit their project's first annual reporting data. For renewed crediting periods, project developers must submit their listing information no earlier than 18 months before and no later than 9 months after the conclusion of the previous crediting period. This timeframe establishes the period of time in which additionality would be assessed and will also determine which protocol version should be utilized.

9. Monitoring, Reporting, and Record Retention Requirements for Offset Projects

Ongoing monitoring of offset projects is necessary to ensure that offsets credited to the project have occurred, and to provide the necessary data for quantifying and verifying GHG reductions. Monitoring requirements in the proposed

regulation include measurement and data collection for key project parameters, as well as related procedures and quality control procedures. The monitoring requirements address what needs to be measured, how often it needs to be measured, and what methods and instrumentation are acceptable for data collection. General monitoring requirements can be found in the proposed regulation, while specific requirements for each type of offset project can be found in the individual protocols. Protocol-specific monitoring requirements increase consistency among projects of the same type, while allowing monitoring requirements to be tailored to each project type.

Staff includes separate requirements for the substitution of missing fuel analytical data in the proposed regulation, in the case that an offset project's gas or fuel analytical monitoring data equipment breaks down. In turn, it is necessary to collect data that would be needed to support the missing data substitution procedures for fuel use. The offset project developer may benefit from such a provision because it could reduce or eliminate the need for more punitive data substitution in a missing data situation.

The proposed regulation requires reporting on the performance of offset projects, including summarizing project monitoring data, calculating the GHG reductions achieved in the applicable period, and documenting that information in a project report. The required content and level of detail demanded in project reports—referred to as *Offset Project Data Reports* in the proposed regulation—vary between project types.

Staff proposes an annual reporting frequency. Reductions can be aggregated by year and reported once every six years in the case of urban forest projects. Staff chose these timeframes because reporting represents a project cost due to the resources required to prepare and subsequently verify reported data. Staff believes these timeframes strike a balance between cost and accountability, and are cost-effective for the various types of offset projects. All reports will be due on April 1 of the subsequent year for which GHG reductions are being reported. These general requirements for offset project reporting are described in the proposed regulation. There are also specific reporting requirements for each type of offset project in the individual protocols. In addition to meeting these requirements, project developers must submit a statement to ARB attesting to the accuracy and truthfulness of the Offset Project Data Reports they submit. If a project developer fails to submit their reported data by the appropriate deadline, they will be disqualified from being issued offset credits based on the reported GHG reductions covered in that particular data report.

The proposed regulation includes requirements for project developers to retain records and documents pertaining to monitoring and reporting activities. Project developers must retain all information used to develop their Offset Project Data Reports. The information retained must also be sufficient to allow for verification of the GHG reductions contained in each report. These general record retention requirements can be found in the proposed regulation, while specific

requirements for each type of offset project are described in the individual protocols, if applicable. Developers of non-sequestration-based projects are required to retain these records for five years after the crediting period in which that data report is submitted ends. Developers of sequestration offset projects must retain these records for the length of time that the offset project is issued offset credits plus 100 years.

10. Verification for Offset Projects

Verification is the process of reviewing offset project information to ensure that claimed GHG emissions reductions have been achieved in accordance with the proposed regulation. According to the proposed regulation, verification will occur after project implementation and prior to offset credit issuance.

In the proposed regulation, staff includes requirements for a verification program that are consistent with international standards and subject to ARB oversight. This oversight includes verifier accreditation, verification body accreditation, requirements for verification services, and conflict of interest requirements. The proposed regulation includes enforcement provisions that apply to parties that participate in the offset program. These parties include offset project developers, verifiers, and covered entities.

To establish a high level of trust in the program and address public concerns related to the integrity of offset projects, staff has developed a verifier accreditation process and conflict-of-interest process that ensures quality in the evaluations and prevents potential bias when offset projects are verified by independent third parties.

The verifier and verification body accreditation program established in the MRR for purposes of emissions reporting will be expanded to include the accreditation of verifiers and verification bodies for offsets. Expanding the accreditation program will involve project type or protocol-specific training for verifiers accredited through the MRR program.

a. Offset Verification Services

Staff includes several key elements for offsets verification in the proposed regulation. The first is a mandatory site visit during the first year of verification. Site inspection allows the verification team to ensure that all GHG sources, sinks, and reservoirs within the defined offset project boundary are included in the project's reduction and removal estimates and that the reported data are complete as required by the proposed regulation and the applicable protocol. It is also an opportunity for the verifier to assess the adequacy of the data management and data acquisitions systems used to collect and process data underlying reduction and removal estimates. At the same time, the verification team may conduct a review of contracts and other documents to substantiate reported data and ensure that data sampling and monitoring were conducted as applicable in the regulation and applicable protocol.

The offset verification team is also required to develop a verification plan. Verification plans provide documentation of planned activities, site visits, and document reviews. The plan will be submitted by the verification body to ARB or an Offset Project Registry, if applicable, with a Notice of Verification Services, ten days prior to a kick-off meeting with the offset project developer. The Notice of Verification Services allows for ARB to plan in advance for any additional oversight of the verification, with dates of verification activities proposed in advance.

A critical element of offset verification is the sampling plan. This plan is used to conduct data checks on the reported GHG sources, sinks, and reservoirs. Offset verification does not call for a duplication of all calculations, but rather checking specific subsets of the reported data based on several criteria. Selection of data subsets for checking involves a review of the largest contributions to overall GHG sources, sinks, and reservoirs that result in reduction or removals, as well as the sources, sinks, and reservoirs associated with the greatest uncertainties in estimation. Therefore, the sampling plan includes a ranking of source contributions to overall GHG sources, sinks, and reservoirs and a ranking of sources, sinks, and reservoirs with the greatest calculation uncertainty.

The offset verification team conducts a qualitative risk assessment based on the uncertainty of the data acquisition equipment, data sampling and frequency, data processing, reduction or removal calculations, data reporting, and management policies or practices applied to the Offset Project Data Reports. For example, in evaluating the uncertainty of the data acquisition equipment, an offset verifier may check the age of a meter or the maintenance record for the meter. For data processing, the offset verifier may check how the data management system records and tracks data that supports reduction or removal estimates. The risk assessment qualitatively evaluates how much confidence rests with the underlying infrastructure that generates reduction or removal estimates.

The proposed regulation does not prescribe the number of data checks that the offset verification team must perform. The offset verification team must exercise professional judgment in choosing these. Ultimately, the offset verification team must have reasonable assurance that the reported emissions reductions or removals do not contain a material misstatement that would overestimate reductions or removals or a material misstatement that would underestimate by more than 5 percent the reported emissions reductions or removals, and that all applicable regulatory requirements in the proposed regulation and the applicable protocol have been met in the estimation and reporting of those reduction or removal estimates.

During the course of the offset verification, the offset verification team is required to maintain an issues log of any findings that may affect materiality or conformance with the proposed regulation. The offset verification team must also log how those issues are resolved to the satisfaction of the team so that the verification body may then provide a positive offset or qualified offset verification

statement. Any findings that result in a change of the initial Offset Project Data Report submitted to ARB or an Offset Project Registry must be documented. This careful documentation provides transparency in the offset verification process and allows ARB to follow the verification in detail as part of its oversight role.

b. Completing the Offset Verification Process

Upon completion of review by the offset verification team, the verification body may submit a positive offset verification statement to the operator—and ARB and/or an Offset Project Registry—if the offset verification team has found no material error in the Offset Project Data Report, and if the team finds the report meets the requirements of the regulation. The verification body may submit a qualified positive offset verification statement if the team has found no material error in the report, but it may include one or more nonconformance(s) with quantification, monitoring, or metering requirements that do not result in material error. The verification body may also submit an adverse verification statement if the team has found material error or is otherwise unable to state that the Offset Project Data Report meets the requirements of the regulation. When providing the offset verification statement, the verification body will have an opportunity to add any comments or qualifiers they deem necessary to provide a complete context for the verification. The verification body will also submit a detailed verification report to the offset project developer that includes the verification plan, sampling plan, issues log, and additional documentation. The detailed verification report is retained by the project developer, but is made available to ARB or an Offset Project Registry upon request. The detailed verification report may be used by ARB or an Offset Project Registry at its discretion, to review the work of the verification body or review the verification process or the submitted data.

If a verification body and offset project developer cannot agree on the verifiability of the reported reductions or removals, or the need to revise the Offset Project Data Report, the project developer may petition ARB or an Offset Project Registry for review of the offset verification statement. ARB could use any experts at its disposal to review questions, and both parties would be held to the subsequent ARB decision.

11. Verifier and Verification Body Accreditation

A key element for ensuring the credibility of the offsets program is independent verification of reductions or removals to ensure the completeness and accuracy of the estimates and conformance to the regulation. Under the proposed regulation, verification for offsets will be performed by qualified and trained third-party verifiers that meet specifications for education and experience, and demonstrate that there is no conflict of interest for verifying reductions or removals due to current or previous relationships with the project developer. Verifiers will be required to attend a multi-day ARB-approved verifier training

course and successfully complete an exit exam prior to being accredited to provide verification services for offset projects.

For offset verification, staff recognizes the need for project type- or protocol-specific verifiers, especially in the case of forestry projects or those including carbon sequestration. These sectors often have complex baseline and emissions-reduction calculation methods, contractual arrangements, and sales and purchase complexities that require verifiers to have special knowledge. ARB will offer project type-specific training in addition to general verification and lead verifier training. All lead verifiers and general verifiers may take the additional project type-specific training if there is a training offered by ARB. Lead verifiers who lack experience in environmental or financial auditing would have additional training. Based on guidance from existing programs, such as the International Organization for Standardization (ISO), these various requirements aim to ensure quality and consistency in the conduct of verification activities.

12. Conflict of Interest for Offset Projects

Conflict of interests arise when an individual or organization have interests in one activity that could possibly influence its objectives in another activity. Conflict-of-interest safeguards are especially important in the offsets program because verification bodies and the offset project developers enter into contracts for performing verification activities, in which they agree on a monetary payment for services rendered. In an offset verification scenario, the verifier reviews the amount of GHG emissions reductions reported, as well as the project developer's conformance with the requirements of the regulation. The monetary value of this contractual relationship depends on the complexity of the project verified by the verification body. The proposed regulation contains requirements and criteria for potential conflict-of-interest assessments between verification bodies and offset project developers to prevent them from occurring.

The conflict-of-interest requirements in the proposed regulation ensure that the verification process is independent and free of any external bias or interests of the verifier influencing the review of data reported by the offset project developer. The proposed regulation provides guidance and criteria as to what types of relationships and practices are unacceptable between a verification body and the offset project developer.

Prior to providing verification services to an offset project developer, the verification body must evaluate the level of potential conflict between itself and the developer. The proposed regulation provides requirements and criteria for determining whether a potential conflict is low, medium, or high. If the potential conflict is determined to be high, then offset verification may not commence between that verification body and the project developer. If the potential conflict is found to be low, then the verification may commence. If there is a medium level of risk for conflict of interest, and the verification body wishes to pursue offset verification services, it must provide a plan for how it will mitigate any

conflict before finding the risk as acceptable and proceeding with the offset verification process.

ARB plans to train its accredited offset verifiers to properly assess conflict-of-interest situations based on the criteria laid out in the regulation. ARB's role in the conflict-of-interest process will be actively auditing the offset verifiers to ensure they appropriately assess and certify their conflict of interests before they move forward with providing offset verification services.

The proposed regulation contains a requirement for offset project developers to change offset verifiers after six years to avoid potential conflict-of-interest issues from lengthy business relationships. This results in a new set of eyes to review the reduction or removal estimates provided by the project developer. Staff includes this requirement to reduce complacency that may occur given the familiarity a verification body may feel toward an offset project developer after that time period.

13. Issuance and Registration of Offset Credits

Once emissions reductions or removals from projects listed through the ARB process have been verified and issued a positive offset or qualified positive offset verification statement, ARB or an Offset Project Registry will issue offset credits in an amount equal to the GHG reductions or removals verified. Each offset credit that is issued by ARB or an Offset Project Registry will be assigned a unique serial number and be entered (registered) into the respective registry systems and subsequently the account of the registered owner of the offset credits, unless the offset credit is being diverted into ARB's Forest Buffer Account for forestry permanence purposes. Owners of offset credits will be notified by ARB or an Offset Project Registry within 45 days of the determination for issuance of offsets.

Offset credits do not constitute a property right and may be invalidated by ARB. Once issued, offset credits can be traded, sold, or used as part of an entity's compliance obligation. To ensure that offset credits are not double-counted, the serial numbers must be taken out of circulation when an offset credit has been retired or used for compliance.

Before offset credits issued by Offset Project Registries can be used for compliance in the cap-and-trade program, all information for that offset project submitted by the project developer to the Offset Project Registry—including listing, reporting, and verification information—must be transferred from the registry to ARB. The offset project developer must also submit a series of attestations to ARB stating that all information they have submitted to a registry is truthful and accurate. These attestations provide an enforcement link between the project developer and ARB. In the event that ARB needs additional information regarding the initial information submitted, ARB will notify the project developer and allow time for this review. After all information is satisfactory and the attestations are made, ARB will issue an offset credit within 30 days. ARB

will place it into the owner's Holding Account once it has confirmation that any corresponding offset credit has been retired in the originating registry.

14. Forest Buffer Account

The proposed regulation establishes a *Forest Buffer Account*—a permanence mechanism for ensuring GHG emissions remain out of the atmosphere—to replace offset credits in the event of an unintentional reversal. The account acts as an insurance policy; the developers pay a premium up front to be fully covered in the event of an unintentional loss of sequestered carbon. An unintentional reversal of stored GHGs means any reversal, including wildfires or disease, that is not the result of the forest project developer's negligence, gross negligence, or willful intent. Ultimately, the risk of impermanence may affect the cap, if obligated metric tons are lost, and the liable party is not able to make good on their obligation. In the case of an unintentional or an intentional reversal, the forest project operator must notify ARB of the reversal and how many metric tons were reversed. If the unintentional reversal reduces the project's stored carbon below its project baseline, the project will automatically be terminated, but the developer may relist the offset project under certain conditions. If the reversal is intentional, the offset project will be terminated, and it may not be relisted.

The proposed regulation requires that a portion of all offset credits issued by ARB to offset projects developed according to ARB's U.S. Forest Projects Protocol be placed into the Forest Buffer Account to cover unintentional reversals. The forest project operator is required to follow the methods in the U.S. Forest Projects Protocol for calculating the project's risk rating. The risk rating is based on a number of default and calculated factors that differ depending on the individual project. The factors and equations that must be used to determine each project's risk rating are provided in the protocol.

The project must place offsets into a buffer mechanism, regardless of whether a forest project originates with ARB or an Offset Project Registry. If a forest project originates through the use of an Offset Project Registry, all offset credits that are set into the Offset Project Registry's buffer account must be transferred to ARB at the time that a forest offset credit is brought into the compliance offset program.

Staff will monitor the use of the Forest Buffer Account over time. If the account appears to be diminishing at a faster rate than it is being replenished, ARB may need to adjust the U.S. Forest Projects Protocol to require that more offset credits are placed into the buffer pool in the future. If the buffer pool is ever exhausted, staff would evaluate options for replenishing it, including potentially retiring allowances from the Reserve.

15. Invalidation of Offset Credits

To ensure the enforceability of compliance offsets, ARB needs to have the ability to investigate and take action for violations or noncompliance with the proposed regulation. There are two primary reasons that ARB may need to invalidate offset credits after they have been issued: (1) fraud or malfeasance on behalf of

the project developer, the third-party verifier, verification bodies, or others involved in producing the documentation used to support the issuance of offset credits, or (2) a reversal in the forest sector. If an offset credit has been used for compliance or retired and is subsequently invalidated, it must be replaced within 30 days. If the offset credit has already been retired, staff is proposing in all cases of fraud or malfeasance that the entity that used or retired it be responsible for replacing the invalidated offset credits. The covered entity may then take appropriate action through third-party contractual arrangements they may have established prior to purchase. These arrangements currently exist in the voluntary offset market, and staff expects that as the offset market becomes more established, that a standardized contract for third-party liability will be established. In the event that the offset credit has not yet been used or retired, it will be canceled in the market tracking system and removed from any Holding or Compliance Accounts.

If there is an unintentional reversal in the forest sector, staff will retire the appropriate number of offset credits from the Forest Buffer Account, whether or not they have already been used or retired within the system. If there is an intentional reversal in the forest sector, staff proposes that the forest project developer replace the invalidated offset credits within 30 days, whether or not they have been retired within the system. Staff is proposing to hold the project developer liable for intentional reversals in the forest sector because the risk of reversal is more prevalent. Buyers will have little incentive to invest in forestry projects if the liability falls back to them. Instead they will pursue projects with more certain emissions reductions.

16. Offset Project Registries

Staff includes provisions in the proposed regulation to allow third-party offset programs (Offset Project Registries), that meet ARB standards, to perform many of the responsibilities in the offset creation process to take advantage of their resources and expertise and minimize the administrative burden of the offsets program on ARB staff. The responsibilities that Offset Project Registries may take on include: listing offset projects; overseeing monitoring; reporting; and verification activities; and issuance of ensuing offset credits. These services are also referred to as *registry services.* All offset credits issued according to Board-approved protocols must be verified using ARB-accredited verifiers. ARB would still need to perform required CEQA analyses, adopt compliance protocols, and oversee Offset Project Registry activities. ARB oversight of the conduct of Offset Project Registries and ARB-accredited verifiers is critical to the overall quality of the program.

The proposed regulation includes comprehensive requirements that an Offset Project Registry must meet to be approved by ARB, including the submittal of: an application, information regarding its staff and Board members, and proof of professional liability insurance. ARB will then evaluate the application and information submitted to ensure that it meets the regulatory criteria in the proposed regulation and does not have any conflict of interests. If the program is

approved, ARB will issue an Executive Order designating the Offset Project Registry to provide registry services which will be valid for five years. At the end of the five years it may reapply to continue offering registry services to ARB. ARB may also decide to modify, suspend, or revoke this approval for good cause.

Offset Project Registries are required to make specific information publicly available on all of the listed offset projects. They are also required to perform annual audits of 20 percent of a representative sample of listed offset projects. This information must be submitted to ARB, along with an annual report of its findings. The Offset Project Registry must also make its staff and all documentation related to any offset project it lists available to ARB for audits, and it must retain all records related to its audits and its listed offset projects for a specified period of time, as laid out in the proposed regulation.

B. Recognition of Compliance Instruments from Other Programs

1. Early Action Offset Credits

Beginning in 2005, the Climate Action Reserve (CAR) and its predecessor, the California Climate Action Registry began adopting voluntary GHG accounting protocols to encourage voluntary early action to reduce GHG emissions. ARB recognizes the rigor of the voluntary accounting procedures CAR adopted to establish that GHG emissions reductions are real, additional, and permanent. CAR has issued approximately 7.5 million credits for offset reduction projects to date under its voluntary program.[36] Staff proposes to allow eligible offset credits and ongoing projects using protocols developed for four project types and adopted by CAR's Board to transition into ARB's compliance offset program. Recognition of early action offset credits will increase the supply of eligible compliance offset credits available in the short term.

Staff is proposing to allow offset credits issued according to the following protocols developed for four project types to be used for compliance purposes:

- Climate Action Reserve Livestock Protocol versions 1.0 through 3.0.
- Climate Action Reserve Urban Forestry Protocol versions 1.0 through 1.1.
- Climate Action Reserve Ozone Depleting Substances Protocol version 1.0.
- Climate Action Reserve Forestry Protocol version 2.1, or Climate Action Reserve Forestry Protocol versions 3.0 through 3.2, if the offset project has a conservation easement of has contributed offset credits based on its reversal risk to an insurance buffer account.

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[36] Information found at: http://www.climateactionreserve.org/. (accessed October 24, 2010)

If an offset project has used one of the above-mentioned protocols, its offset credits may be used for compliance purposes if the GHG reductions meet the following criteria:

- Occurred between January 1, 2005, and December 31, 2014.
- Result from an offset project with an offset project commencement date prior to January 1, 2012.
- Result from an offset project located in the United States.
- Have not been retired, canceled, or used to meet a voluntary commitment or a surrender obligation in any voluntary or regulatory system.
- Meet the requirements for verification and conflict of interest for offset projects as required by the proposed regulation and required under AB 32 for all GHG reductions and GHG removals used for compliance purposes.

If an offset credit meets all of these requirements it may be used for compliance purposes. To avoid double-counting, the third-party offset program that issued the offset must retire it in their system before it is issued within ARB's tracking system.

Staff is aware that several voluntary offset programs currently use and may, in the future, use these protocols to issue offset credits. In the proposed regulation, staff includes requirements that an offset program must meet in order to have its offset credits issued according to these protocols for compliance purposes. If the program is an Offset Project Registry has been issued an Executive Order, it will be approved for purposes of recognizing early action offsets. If it has not been issued an Executive Order, it must prove it meets the requirements spelled out in the proposed regulation.

2. Sector-Based Offset Crediting Programs

Because climate stabilization requires global cooperation to reduce GHG emissions, staff proposes a framework for including sector-based offset credits from subnational programs in developing countries in the proposed regulation. Sector-based crediting is a concept that has emerged in international climate forums as an opportunity to broaden the scope and scale of emissions reductions in developing countries. It offers a bottom-up approach to developing-country mitigation, whereby host jurisdictions commit to establishing programs to reduce emissions in a particular sector of their economy, while jurisdictions in developed nations provide markets and other incentives to help finance those reductions.

The term *sector* refers to an economic activity or a group of related economic activities that occurs across a government jurisdiction. The cement and forest sectors are two examples. In a sector-based crediting program, a host jurisdiction's entire sector would need to meet an emission target before crediting

could be used in a California compliance market. The program's host jurisdiction would establish its own baseline (which would represent existing conditions for the particular sector) and a crediting baseline (which would represent a significant reduction in GHG emissions from its existing condition for the entire sector within that jurisdiction). Emissions reductions that occur below the crediting baseline could be issued credits that can be used by covered entities in the California compliance market, subject to approval of that program by the Board.

Sectoral approaches allow jurisdictions to focus on those economic sectors that have contributed the most significant GHG emissions within their jurisdiction or that have the potential for significant future emissions. By moving from a project-by-project approach, a sector-based crediting program can cover a larger geographical area or market and reduce the risk of emissions leakage within the jurisdiction. By crediting a sector based on some target level of reductions, competitiveness concerns among trade-exposed sectors can also be alleviated.

The regulation establishes a framework for accepting sector-based offset credits from developing countries. While staff is not proposing to approve any sector-crediting programs or adopt any protocols for sector-based offset credits at this time, this framework should help provide a necessary incentive for developing countries[37] to reduce their emissions and work toward meeting compliance grade sector-based offset credit requirements in California.

California has been working with state and provincial partners in two major initiatives exploring and developing sector-based offset crediting mechanisms. First, Governor Schwarzenegger established the Governors' Climate and Forests Task Force (GCF) in 2008. The GCF is a consortium of states and provinces aimed at establishing a market for forest carbon offset credits from reducing emissions from deforestation and forest degradation (REDD). Second, California has also been a leader and co-founder of the International Carbon Action Partnership (ICAP), a consortium of states and countries pursuing the development of carbon markets.

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[37] *Developing countries,* for the purpose of this regulation, are defined as those identified as Non-Annex 1 Parties by the United Nations Convention on Climate Change (UNFCCC). These countries have been recognized as being especially vulnerable to the adverse impacts of climate change and include countries with low-lying coastal areas, those prone to desertification and drought, and those that rely heavily on fossil fuel production due to their economic vulnerability to climate change mitigation measures. *Least Developed Countries,* as identified by the United Nations, are included in this list due to their limited capacity to respond to climate change and adapt to its adverse effects. California will also take into consideration opportunities where emissions reductions also have significant health benefits.

a. Sector-Based Crediting Program Approval

Each sector-based crediting program will need to be approved by the Board, and ARB's review of each sector-based crediting program will include a public consultation process pursuant to the Administrative Procedure Act. Staff anticipates a limited number of sector-based programs will be approved in the near-term because of the intensive review each program will undergo. Initially, staff anticipates that the Board would limit itself to working with subnational jurisdictions that have the most advanced and promising infrastructure necessary to develop sector-based programs. Staff also proposes that the first sectors to be considered for approval be developed through existing partnerships such as the GCF and ICAP. To that end, REDD is likely to be the first type of sector-based crediting program brought to the Board for consideration, as is discussed below in more detail.

Some general principles that will guide ARB's review of sector-based crediting programs include the following:

- Whether the sector represents a significant portion of the host jurisdiction's economy-wide GHG emissions.
- Whether the opportunities for reductions resulting from the program are especially significant.
- Whether the host jurisdiction has employed robust emissions monitoring, reporting, and verification practices.
- Whether the host jurisdiction has a GHG emissions-reduction strategy that incorporates reductions from its own domestic actions or policies in addition to reductions that result from a carbon offset program.
- Whether the program has homogeneity of the product, production process, and concentration of firms located or operating within the jurisdiction.
- Whether the host-jurisdiction's program includes means for public participation and consultation in the program design process.

Following Board approval of a program, offset credits generated from the program can be used for compliance in the California cap-and-trade program, consistent with the regulation. ARB will evaluate opportunities for additional programs after the first programs are established and tested.

b. Crediting Pathways to Emissions Reductions

Staff proposes the inclusion of two crediting pathways for ARB-approved sector-based crediting programs. A *crediting pathway* refers to how a sector-based crediting program issues credits for reducing or avoiding emissions, or for removing and sequestering carbon from the atmosphere.

The first type of crediting pathway would be used when an ARB-approved program achieves sector-wide emissions reductions from mitigation policies undertaken by or in coordination with the jurisdiction. The second crediting pathway occurs when an ARB-approved program issues credits to project developers for project-level activities that are "nested" within a jurisdiction-wide sectoral program. A nested system must coordinate the accounting of reductions at the project within the jurisdiction's own sectoral planning and accounting.

Under either crediting pathway, sector-based credits used for compliance in the California program must be additional to the host jurisdiction's legal requirements and in excess of the host jurisdiction's own commitment toward GHG emissions reductions for that sector. This additionality requirement ensures that the host jurisdiction is responsible for achieving a reasonable level of emissions reductions across the sector prior to credits being issued to covered entities.

c. Quantitative Limit

Because sector-based offset crediting programs are new and evolving, staff proposes to limit the number of sector-based offset credits allowed in the California compliance market to 25 percent of the overall quantitative offset limit during the first and second compliance periods, and 50 percent of the limit during the third compliance period.

d. General Sector-Based Offset Credit Program Elements

For the Board to consider a given sector-based crediting program for approval, the program would need to satisfy several criteria. While the proposed regulation establishes general requirements, staff will need to develop more sector-specific criteria and methodologies dependent upon the specific program considered prior to Board approval.

Programs must establish a business-as-usual reference-level baseline that accurately reflects the sector's historic and/or potential future GHG emissions for that jurisdiction's entire sector. The program would need an agreed level of deviation from the reference-level baseline, or *crediting baseline,* which is achieved through the jurisdiction's direct policies and mitigation actions. Sector-based credits could then be used for compliance once GHG emissions are reduced beyond the program's established crediting baseline. Emissions reductions must be verified by a third party to ensure reductions are real, additional, quantifiable, and permanent.

The program must also include a robust and transparent system for inventory, monitoring, and reporting to track and evaluate GHG reduction activities for the sector's emissions performance over time. Inventory and monitoring for land-use sectors should reflect, at a minimum, Intergovernmental Panel on Climate

Change (IPCC) Tier 2 methodologies,[38] which apply country or region-specific emission factors and higher temporal and spatial resolution rather than more general default factors and course resolution. The program will also need to establish an accounting mechanism that has the ability to reconcile accounting at both the project and sector level, as well as nest into a national accounting system, if one exists. A program must also include a registry, mechanisms for credit retirement, and protection against reversals where applicable. Each sector may require its own set of unique set of criteria beyond the general criteria currently included in the regulation.

e. Reducing Emissions from Deforestation and Forest Degradation (REDD)

Staff proposes that the first sector-based credits to be incorporated in the cap-and-trade program come from Board-approved REDD sector-based crediting programs. This recommendation is based on the important role that forests play in climate change in terms of sequestering carbon, and in particular, the role that tropical forests play in directly affecting the climate. According to the Technical Summary from the IPCC Working Group,[39] CO_2 emissions from tropical deforestation and degradation account for approximately 17 percent of global greenhouse gas emissions to the atmosphere, representing the second largest emissions sector after fossil fuel use.

The significance of deforestation emissions has brought the issue to the forefront of both domestic and international negotiations. Attention has focused on developing a REDD mechanism that offers incentives for domestic actions to further avoid deforestation and to transition to a low-carbon economy. In the above-mentioned Technical Summary, the IPCC has stated that "Reduced deforestation and degradation is the forest mitigation option with the largest and most immediate carbon stock impact in the short term per hectare and per year globally." For California's cap-and-trade program, sector-based credits from avoided deforestation are a potentially promising opportunity for covered entities to reduce compliance costs while ensuring net reduction of GHG emissions to the atmosphere.

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[38] Paustian, K. et al. IPCC Guidelines for National Greenhouse Gas Inventories. Volume 4, Chapter 1, (2006). Found at: http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/4_Volume4/V4_01_Ch1_Introduction.pdf. See Page 1-11, Box 1.1 Framework of Tier Structure for Agriculture, Forestry, and Other Land Use Methods.

[39] Nabuurs, G. J., O. Masera, et al. (2007). Forestry. Climate Change 2007: Mitigation of Climate Change. Contributions of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. M. Apps and E. Calvo. New York, Cambridge University Press. Found at: http://www.ipcc.ch/publications_and_data/ar4/wg3/en/ch9.html

Since 2008, California established itself as a leader in the REDD effort at the subnational level through the creation of and participation in the GCF process, creating global subnational partnerships and a blueprint for supporting eligible forest carbon activities in REDD programs. Subnational jurisdictions that are members of the GCF are home to 21 percent of the world's tropical forests, most of which are experiencing severe deforestation pressure for alternative uses, such as large-scale agriculture, and ranching.[40]

While REDD poses significant emissions mitigation opportunities, the concept is newly emerging, and it is imperative that California moves forward carefully with the goal of establishing a REDD model for subnational programs that is of high quality and replicable.

i. Setting a Framework and Criteria for Subnational REDD Programs

A protocol must be developed and approved by the Board to quantify, monitor, report, and verify emissions reductions achieved by REDD programs. To be considered for approval by the Board, a REDD program will need to be designed as closely to the following framework and criteria as possible:

- *REDD Plan*. The host jurisdiction's REDD program must be based on a forest sector plan that has been approved by the host jurisdiction and specifically:
    - Assesses the local drivers of deforestation in its jurisdiction; identifies reforms and policies to address these drivers; identifies emissions from deforestation; and identifies systems to be used for data collection, monitoring, and the development of institutional capacity necessary to implement a deforestation reduction program.

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[40] Gibbs, H. K. and J. O. Niles. 2010 (unpublished). Preliminary Estimates of Forest Area and Forest Carbon Stocks in Developing Country GCF States and Provinces. Tropical Forest Group Report for the Governors' Climate and Forest Taskforce (GCF). Boulder, CO. 2010. Based on: A. Ruesch, and H.K. Gibbs. 2008. New IPCC Tier-1 Global Biomass Carbon Map For the Year 2000. Available online from the Carbon Dioxide Information Analysis Center http://cdiac.ornl.gov, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

Note: Carbon estimates are based on Ruesch and Gibbs (2008) spatial database of biomass carbon stored in above and belowground living vegetation, circa 2000, which was created following the International Panel on Climate Change (IPCC) Good Practice Guidance for reporting national greenhouse gas inventories. The team synthesized and mapped the IPCC Tier -1 default values using the GLC2000 global land cover map stratified by continent, ecoregion and forest disturbance level. The database is appropriate for regional to global assessments only and has not been validated with field data and therefore may be used for estimations. Spatial resolution is 1km by 1km.
http://cdiac.ornl.gov/epubs/ndp/global_carbon/carbon_documentation.html

- Establishes a timeframe for implementing the program and transitioning to low emissions development with respect to emissions from forest and land use activities.

- *Inventory*. The REDD program must utilize the most up-to-date and comprehensive accounting of sources and sinks available to the host jurisdiction, and is consistent with estimates of carbon stocks and emissions based on forest classes defined in the Intergovernmental Panel on Climate Change *Good Practice Guidance for Land Use, Land Use Change, and Forestry.*[41]

- *Reference Level*. The REDD program must set a GHG emissions reference level that represents a conservative estimate across a jurisdiction's forest sector. Staff's initial thinking is that this reference level should be derived from absolute deforestation based on historic emissions averaged over a 10-year period and adjusted if necessary.

- *Crediting Baseline*. The REDD program must set a crediting baseline based on specific targets for 2020 and beyond.

- *Nested Accounting*. If the program is nested, it must include the necessary infrastructure for clear reconciliation of project performance with the performance of the sector as a whole.

- *Retirement*. The program must include a retirement mechanism for removing the credits that have been used for compliance from the state-level accounting system, crediting baseline, and credits retired.

- *Public Participation and Participatory Management Mechanism*. The REDD program must established and incorporated an effective public participation and participatory management process that provides for the consultation and full involvement of forest-dependent communities in affected areas during the planning, design, implementation, monitoring, and evaluation of program activities.

- *Protection Against Reversals*. The REDD program must established a statewide forest sector performance insurance mechanism to ensure projects are not penalized for reversals against the jurisdiction's crediting baseline.

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[41] Good Practice Guidance for Land-Use, Land-Use Change and Forestry, (2003). Edited by Penman J., et al. Published by the Institute for Global Environmental Strategies (IGES) for the IPCC. Found at: http://www.ipcc-nggip.iges.or.jp/public/gpglulucf/gpglulucf_contents.html.

ii. Next Steps for REDD Implementation

In 2011, ARB will work closely with REDD technical experts, scientists, stakeholders, research institutes, and the Governors' Climate and Forests Task Force to address critical technical and policy issues in order to refine guidance for a high-quality subnational REDD program. Staff anticipates that REDD offset credits from Board-approved programs could enter the California market in 2015. Staff is, however, contemplating how pilot activities with host-jurisdictions closest to having program infrastructure in place could be considered for approval earlier than 2015. A pilot program or group of pilot programs could provide REDD credits sometime during the first compliance period.

IV ANALYSIS OF ALTERNATIVES TO THE PROPOSED REGULATION

This Chapter provides an analysis of the alternatives staff considered to the proposed cap-and-trade regulation. Part A describes the alternatives to implementing a cap-and-trade program. Part B describes the alternatives to some specific cap-and-trade program design features. For each of the alternatives, staff outlines the costs and benefits of the approach and explains why it chose to propose the cap-and-trade regulation and incorporated design features.

A. Alternatives to the Cap-and-Trade Program

Staff analyzed four alternatives to the proposed cap-and-trade regulation:

- Do not implement the cap-and-trade program, and do not replace it with an alternate approach to achieve additional emissions reductions (no project).
- Implement additional source-specific regulations designed to achieve the AB 32 goals in place of the cap-and-trade program.
- Implement a carbon fee in place of the cap-and-trade program.
- Link a California cap-and-trade program to a federal cap-and-trade program.

In evaluating these alternative approaches to the proposed regulation, ARB staff found that none were as, or more, effective than a cap-and-trade program in carrying out the goals of AB 32. Further, none of the options that would have enabled California to meet AB 32 goals were as cost-effective as the proposed cap-and-trade regulation. Staff provides a discussion of each alternative in the following sections.

1. Do Not Implement the Cap-and-Trade Program ("No Project" Alternative)

The "No Project" Alternative defines a scenario in which ARB would not implement a cap-and-trade program, and would not supplement the complementary measures identified in the *Climate Change Scoping Plan* to achieve the additional emissions reductions needed to meet the AB 32 emissions limit. Under this alternative, ARB would fail to meet its legal mandate to reduce GHG emissions to 1990 levels by 2020.

As part of the ongoing work to implement the Scoping Plan, ARB staff updated 2020 GHG emissions-reductions projections with estimates published in adopted regulations' staff reports. In addition, the baseline forecast and the reductions that would be achieved by the complementary measures were adjusted to account for the recent economic downturn. Measures that were not considered

likely to realize reductions within the 2020 timeframe were not included in emissions-reduction totals. In analyzing reductions that would occur under the No Project Alternative, staff considered only those measures that are adopted and those not-yet-adopted measures that are planned and reasonably foreseeable.

ARB Scoping Plan measures that have been adopted by the Board, pursuant to AB 32,[42] measures that are being implemented by other agencies and organizations,[43] and measures that are reasonably foreseeable[44] are currently projected to provide approximately 62 $MMTCO_2e$ in reductions in 2020. Given a 2020 baseline projection of 507 $MMTCO_2e$,[45] the No Project Alternative would result in emissions of 445 $MMTCO_2e$ in 2020—*at least* 18 $MMTCO_2e$ above the 427 $MMTCO_2e$ target. This gap could be significantly greater if adopted measures fail to achieve expected reductions, if energy-efficiency programs are not funded at adequate levels or are less effective than projected, or if the economy grows faster than expected. Based on this information, if the cap-and-trade regulation is not implemented, California's GHG emissions will not be reduced to 1990 levels by 2020, in violation of AB 32.

In addition, the cap-and-trade program is unique in setting a firm limit on emissions, rather than establishing performance standards and other mechanisms to reduce the emissions intensity of different activities. For most complementary measures, the emissions reductions will vary based on factors like economic and population growth. The firm limit on emissions established by the cap-and-trade program will help ensure that statewide emissions will meet the AB 32 target, even if implementation of the complementary measures results in greater remaining emissions than currently anticipated.

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[42] 33 percent Renewable Electricity Standard (part of E-3), Low Carbon Fuel Standard (T-2), Regional Targets (T-3), Tire Pressure Program (part of T-4), Ship Electrification (T-5), Port Drayage Trucks (part of T-6), Heavy Duty Aerodynamics (T-7), Medium/Heavy Hybridization (T-8), Energy Efficiency and Co-Benefits Audits for Large Industrial Sources (I-1), Motor Vehicle A/C (H-1), SF_6 Limits in Non-Utility and Non-Semiconductor Applications (H-2), Reduction of Perfluorocarbons in Semiconductor Manufacturing (H-3), Limit High GWP Use in Consumer Products (H-4), Refrigerant Tracking/Reporting/Repair Deposit Program (part of H-6), SF_6 Leak Reduction and Recycling in Electrical Applications (part of H-6), and Landfill Methane Control Measure (RW-1).

[43] High-Speed Rail (T-9), Energy Efficiency and Conservation (E-1), Million Solar Roofs (E-4), and Sustainable Forests (F-1).

[44] Advanced Clean Cars (formerly Pavley II, T-1).

[45] The revised 2020 baseline accounts for the economic downturn and includes the emissions reductions from Pavley I and the 20 percent renewable portfolio standard. For more details, see the revised 2020 baseline forecast at ARB's "Greenhouse Gas Inventory - 2020 Forecast" webpage: http://www.arb.ca.gov/cc/inventory/data/forecast.htm.

2. Implement Only Additional Source-Specific Command-and-Control Regulations

Another alternative to adopting the cap-and-trade regulation would be to implement additional source-specific command-and-control regulations that would achieve the same level of GHG emissions reductions as that of the proposed cap-and-trade program. If this alternative were pursued, ARB would likely focus primarily on the industrial sector because the transportation, electricity, and natural gas sectors are already extensively addressed[46] through complementary Scoping Plan measures.

Command-and-control regulations would not provide the same assurance of reductions as that offered by a cap-and-trade program. Emissions reductions from command-and-control regulations are estimates based on assumptions about the specific regulation, and typically result from reducing the emissions intensity of the activity that is regulated. These assumptions may include forecasts of technology development and penetration estimates. Although these estimates would be based on the best data available, actual results may be significantly different because regulations may fail to achieve expected reductions, or programs may not be funded at adequate levels or may be less effective than projected. In addition, increases in the regulated activity (e.g., an increase in throughput) could mean that the regulation has the effect of reducing emissions intensity but the absolute level of emissions could actually increase. A cap-and-trade program, on the other hand, would establish the maximum level of total GHG emissions allowed to be emitted collectively by all covered sources. Because the proposed cap-and-trade program sets a cap on the GHG emissions from the majority of California's GHG emissions, it helps ensure that the State will meet the AB 32 statewide emissions limit.

Command-and-control regulations would also not allow for a demand-side response to an allowance price signal across the entire economy. The price signal established through a cap-and-trade program would provide an incentive for investment in energy efficiency and clean fuels, and would also drive efficiency and conservation in consumer and residential energy use beyond that required through the Scoping Plan's complementary measures.

Source-specific regulations are also unlikely to be as cost-effective at reducing GHG emissions as the proposed cap-and-trade program. The cap-and-trade program is designed to allow covered entities to find the most cost-effective GHG emissions reductions by reducing their GHG emissions, buying allowances from

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[46] The transportation, electricity, and natural gas sectors provide over 80 percent of total adopted and foreseeable 2020 reductions from complementary measures; whereas, the industrial sector provides less than 1 percent of these reductions.

an entity that does not need them for compliance, or purchasing offset credits. With source-specific regulations, entities must comply with the regulation, no matter what it costs. Even though each source-specific regulation must undergo cost-effectiveness analyses, it may not necessarily be the most cost-effective for the industry and economy as a whole because cost-effective reductions are not necessarily evenly distributed through all industrial sectors.

In addition to lacking emissions-reductions certainty, and having the potential to be less cost-effective at reducing emissions, industry-wide command-and-control regulations would be challenging to draft and implement. To develop these regulations, ARB would need to identify and target specific processes and equipment and formulate regulations for each. Due to the diverse nature of many industrial processes and a lack of data, it is not practical for ARB to craft and implement such regulations at this time.

The petroleum refining sector, which is the largest industrial GHG emissions source, provides a good example of the complexity of crafting such regulations. As noted by Sweeney and Wyant et al. (2008), "The complex and heterogeneous nature of refineries and their operations cause significant variation in the amount of opportunity and cost of mitigation through efficiency improvements. Thus, a bottom-up approach where individual refineries are examined would be needed to precisely quantify the amount of GHG reduction through efficiency improvements."[47] Worrell and Galitsky (2005) make a similar point: "Every refinery and plant will be different. The most favorable selection of energy efficiency opportunities should be made on a plant-specific basis."[48] Thus, to effectively regulate petroleum refining, plant-specific data and requirements would be needed. Because ARB does not have access to such data at this time, it would be impossible to develop these requirements. Additionally, developing, implementing, and enforcing plant-specific regulations would be resource intensive.

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[47] Sweeney, Jim, John Weyant, et al. 2008. *Analysis of Measures to Meet the Requirement of California's Assembly Bill 32.* Precourt Institute for Energy Efficiency, Stanford University.

[48] Worrell, Ernst, and Christina Galitsky. 2005. *Energy Efficiency Improvement and Cost Saving Opportunities for Petroleum Refineries.* Lawrence Berkeley National Laboratory. http://escholarship.org/uc/item/96m8d8gm (accessed September 22, 2010).

3. Carbon Fee

Another alternative to the cap-and-trade regulation is to place a per-metric-ton fee on GHG emissions from covered sources. Both a carbon fee and a cap-and-trade program would incentivize GHG emissions reductions by pricing those emissions, and ARB would expect to see similar types of emissions-reduction approaches under either pricing scheme. The major benefit of a carbon fee is that it provides price certainty for covered entities; with a cap-and-trade program, the major benefit is environmental (GHG emissions) certainty. The greater certainty in meeting the emissions goals provides an important policy reason to prefer the cap-and-trade program over a carbon fee approach. In addition, the cap-and-trade program proposed in this regulation includes a number of features designed to provide some predictability in cost, including limited use of offsets, banking, and an allowance reserve and reserve price.

While covered sources would face more price certainty in a carbon fee program, the sources covered by a cap-and-trade program can still plan effectively because they know what they would need to spend to reduce emissions. The sources can weigh those costs against the expected cost of compliance instruments and the long-term need to reduce emissions as part of business planning. A cap-and-trade program is the preferred approach because it ensures that technologically feasible reductions occur with the lowest marginal cost of control.

A carbon fee does not provide the same level of certainty in emissions as that provided by a cap-and-trade program. While economic modeling can estimate the marginal cost of abatement for emissions reductions, it cannot predict exactly how high the fee must be set to discourage emission sources from simply paying the fee instead of reducing their emissions to a level envisioned by the program. If the carbon fee is set too low, not enough reductions will take place and California will not meet the AB 32 goals. If the carbon fee is set too high, a greater amount of reductions would take place than would be necessary to comply with the program requirements, which increases the cost of the program to covered entities.

Adoption of a carbon fee would also not avoid many of the complexities associated with implementing a cap-and-trade program, since it would still require reporting, monitoring, and verification of covered entities' GHG emissions. ARB would also still be required[49] to minimize emissions leakage to the extent feasible. Because adding any price on carbon could increase the potential for emissions leakage from emissions-intensive, trade-exposed industries, rules and protocols for managing leakage would need to be developed under both a carbon

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[49] HSC §38562 (b)(8).

fee and a cap-and-trade regulation. The proposed regulation includes a number of features designed to achieve this end, including substantial free distribution of allowances in the early years of the program, and many features designed to help contain costs.

While some may argue that a carbon fee would provide a more predictable source of income for the State to put toward the furtherance of AB 32 goals, staff believes that the predictability of carbon fee revenue streams is neither guaranteed nor exclusive to this approach. Revenues generated by a carbon fee may be more predictable than those from a cap-and-trade program, but revenues can also be generated under a cap-and-trade program to the extent that allowances are auctioned. The cap-and-trade regulation mandates a minimum Reserve Price for allowances, guaranteeing revenue for all auctioned allowances. Further, cap-and-trade program auction prices also send an important signal that reflects the ease or difficulty of meeting program goals. Low auction prices would reflect low demand for permits, meaning that sources are able to collectively reduce emissions to meet the emissions limits at low cost. While the program would generate relatively lower revenues if auction prices are low, less revenue would be needed to implement AB 32 because the AB 32 targets were being met. If sources are having difficulty meeting the targets, there would be higher demand for allowances and higher prices at auction. Under these circumstances, higher revenues would be generated that could be used to invest in additional measures to help meet the AB 32 emission targets. It is important to note that the measures in the Scoping Plan are designed to reduce GHG emissions, not to raise money.

Staff notes that implementing a carbon fee combined with a cap-and-trade program is possible. Indeed, British Columbia, a WCI partner, currently has a carbon fee and is planning to start a cap-and-trade program in 2012. Staff believes that the proposed cap-and-trade program design provides acceptable price certainty[50] while assuring that emissions do not exceed the 2020 target.

4. California Cap-and-Trade Program Linked with a Federal Cap-and-Trade Program

ARB is moving forward with its development of a cap-and-trade regulation while federal climate change legislation has stalled in Congress, leaving no prospect of a federal GHG cap-and-trade program in the near term.[51] With no federal cap-

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[50] The cost-containment reserve mechanism sets a soft ceiling of prices, keeping them within a known range in most scenarios. (See Appendix G for more details.)

[51] The American Clean Energy and Security Act of 2009 was passed by the U.S. House of Representatives in June 2009, but no legislation was passed by the Senate. Several climate, clean energy, and energy-efficiency bills have been introduced in the Senate this year, but as of the beginning of October 2010, no vote is expected during this Congress, and prospects for action on economy-wide climate change legislation in the next Congress is unclear.

and-trade program anticipated in the near future, ARB will continue to move ahead with the proposed California program designed to meet the AB 32 goals, and to work toward linking that program with programs developed by our WCI partners. If ARB waited for a federal cap-and-trade program to link with, it is possible that California would fail to meet the AB 32's 2020 target.

The major federal proposals in recent years included some form of a moratorium on state or regional cap-and-trade programs in the United States. If a federal cap-and-trade program is adopted that preempts any subnational cap-and-trade programs, California, along with other states participating in regional programs (e.g., Western Climate Initiative, Regional Greenhouse Gas Initiative, and the Midwestern Regional Greenhouse Gas Reduction Accord) will work to transition their programs to a national program.

At the federal level, California has continued to promote appropriate recognition of early actions taken by states to reduce GHG emissions. States that have taken early action through the establishment of cap-and-trade programs, including programs that fund GHG-reduction activities, should not be disadvantaged if a federal program is implemented. Should a federal cap-and-trade program be established that preempts California's program, staff supports the establishment of a mechanism for the exchange of State-issued allowances for federal allowances to provide for an orderly transition and avoid the creation of stranded allowances.

B. Alternatives to Specific Cap-and-Trade Program Design Features

Staff analyzed specific alternatives to the design of the cap-and-trade regulation. These design elements include the following:

- Border adjustments.
- Different offset limit.
- 100 percent auction of allowances.
- No banking of allowances.
- Not linking to other cap-and-trade programs.
- Facility-specific caps.
- Restricting trading in adversely affected communities.

1. Border Adjustments

Staff explored two options, both recommended by the Economic and Allocation Advisory Committee (EAAC),[52] for reducing the risk of emissions leakage in the cap-and-trade program: border adjustments and output-based free allocation. *Border adjustments* are a way to place a price, in the form of allowances or dollars, on the GHG emissions associated with imports. They are meant to create a level playing field when regulations vary across jurisdictions. In contrast, under *output-based free allocation,* facilities receive free allocation of allowances based on their output and an industry emission benchmark. Staff compared output-based free allocation to border adjustments and concluded that output-based free allocation is a superior approach for non-electricity goods because it does not face the considerable technical and legal difficulties that border adjustments face. For electricity, staff chose to utilize a border adjustment in the form of the first deliverer compliance obligation because the requisite data are available, and because of the express direction in AB 32 to address electricity imports.

Under the first deliverer approach, the entity that first delivers a good into the State would be responsible for the compliance obligation for the emissions associated with manufacture and transport of those goods. ARB has chosen to utilize the first deliverer approach to regulate emissions associated with electricity generated in another jurisdiction but consumed in California. This approach is possible for electricity because significant information is available on the generation and distribution of electricity with the Western Electric Coordinating Council system, which covers all imported electricity consumed in California.

Staff chose not to extend the first deliverer approach to include entities that import non-electricity goods into California from out-of-state because of potentially significant technical and legal challenges. The first deliverer approach is effective if detailed production data are available on both the imported goods themselves and the entities producing them. Because goods are often traded several times before entering the California market, determining the associated GHG emissions could be exceedingly difficult. The application of border adjustments to interstate and international trade would also face legal scrutiny under the Commerce Clause[53] and World Trade Organization principles.[54]

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[52] Economic and Allocation Advisory Committee. March 2010. *Allocating Emissions Allowances under a California Cap-and-Trade Program: Recommendations to the California Air Resources Board and California Environmental Protection Agency*.

[53] Article I, Section 8, Clause 3 of the United States Constitution.

[54] World Trade Organization (WTO) principles require that the cap-and-trade program must have the capacity to assign or verify emissions associated with the goods produced in California and in foreign countries in exactly the same manner. There is increasing consensus in the international community that border adjustments may be implemented in a manner compatible with WTO

In the Preliminary Draft Regulation, staff discussed the possibility of using a lifecycle analysis (LCA) calculation for transportation fuels' compliance obligations. The LCA approach is a type of border adjustment for imported fuels. While this approach is being used in ARB's Low Carbon Fuel Standard (LCFS), significant additional work would be needed to account for emissions that are included in the LCA and are also proposed to be covered under the cap-and-trade program. Staff chose not to apply LCA in the cap-and-trade program, but instead chose to calculate compliance obligations from direct combustion emissions because of the challenges of netting out stationary emissions across emissions categories. Staff's proposed approach allows for greater administrative simplicity, and does not interfere with the goal of reducing life-cycle emissions from transportation fuels that the LCFS is designed to achieve.

Because of the technical and legal challenges involved with border adjustments, ARB has chosen to utilize free allocation of allowances to entities at risk of leakage. The proposed method of allocation used is output-based, updated, free allocation and was recommended by EAAC. For more information on the proposed allocation program, see Appendix J: Allowance Allocation.

As part of implementation of the cap-and-trade program, ARB will monitor whether leakage is occurring. Should ARB find that leakage is occurring despite the safeguards in the regulation, ARB will examine what additional safeguards, possibly including border adjustments, should be implemented.

2. Different Offset Limit

In the *Climate Change Scoping Plan,* ARB proposed setting the offset limit such that a majority of emissions reductions come from capped sectors. In the Preliminary Draft Regulation, staff converted this offset reduction to a limit of 4 percent of each covered entity's compliance obligation. In this proposed cap-and-trade regulation, this percentage was increased by 4 percent, for a total of 8 percent, to compensate for allowances removed from general circulation to populate the Allowance Price Containment Reserve.[55] Staff explored two alternatives to the 8 percent-of-compliance-obligation offset limit for complying entities in the cap-and-trade program: not allowing use of offset credits, and allowing unlimited use of offset credits

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requirements; however, because border adjustments are still associated with significant uncertainty, staff proposes to use output-based free allocation to address emissions leakage.

[55] For further discussion of the Allowance Price Containment Reserve Account, see Chapter II, part H (Allowance Allocation), subpart 1 (Establishment of an Allowance Price Containment Reserve) of this volume.

ARB's *Updated Economic Analysis of California's Climate Change Scoping Plan*[56] showed a large increase in the price of 2020 allowances if offsets are not allowed into the system. For this reason, ARB staff has chosen to allow the use of offsets—up to the specified limit—for compliance in the proposed cap-and-trade program.

While offsets provide significant benefits (providing low-cost emissions reductions, flexibility in achieving reductions, and incentives to reduce emissions in sectors otherwise difficult to regulate), allowing unlimited use of offset credits would reduce the amount of GHG emissions reductions occurring directly within the sectors covered by the cap-and-trade program. This approach could reduce local economic, environmental, and public health co-benefits, and delay California's transition to a low-carbon economy. This transition is critical to meet California's long-term GHG emissions reductions goals. Because of this, staff has opted to allow entities to cover up to 8 percent of their individual compliance obligations with offset credits.

ARB analysis of the potential emissions impacts of the cap-and-trade regulation[57] indicates that California's existing programs to meet federal air quality standards will provide the majority of criteria pollutant reductions with further NO_x reductions ranging from about 15 to 45 percent by 2020. In communities that ARB evaluated, the cap-and-trade regulation has the potential to provide small additional criteria pollutant reductions in the range of 1 to 3 percent if all greenhouse gas reductions were implemented locally. Because offsets provide more compliance instruments and lower the price, some entities may choose not to reduce greenhouse gas emissions on-site. In this case, the communities evaluated would still experience 15 to 45 percent NO_x reductions by 2020.

3. 100 Percent Auction of Allowances

Allowances can either be distributed freely to covered entities, sold through an auction, or through a combination of the two. EAAC recommended addressing leakage through free allocation, and relying on auction for distribution of the remaining allowances. In developing the cap-and-trade program, staff determined that a soft start for the program under the current economic conditions dictates greater reliance on free allocation of allowances in the early years of the program. Staff views this free allocation as critical to avoid adding an immediate cost to covered industries that could inhibit their ability to invest in emissions reductions. As the program progresses, staff propose a transition to a

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[56] *Updated Economic Analysis of California's Climate Change Scoping Plan: Staff Report to the Air Resources Board.* March 24, 2010. http://www.arb.ca.gov/cc/scopingplan/economics-sp/updated-analysis/updated_sp_analysis.pdf (accessed September 23, 2010).

[57] See Appendix P for more details.

heavier reliance on auction for allowance distribution while still minimizing leakage where risk exists.

Because of the risk of leakage for emissions-intensive, trade-exposed (EITE) industries, staff has chosen to employ free allocation to minimize leakage risk. (See "Border Adjustments," above, for more information.) EITE industries will receive free allocation of allowances for as long as the risk of leakage exists. For the first compliance period, the proposed program also includes allocation of the majority of allowances required to fulfill compliance obligations for free, not just to EITE industries, but also to non-EITE industries and to the electricity sector. The remaining allowances will be auctioned.

An alternative approach would be to auction 100 percent of allowances at the beginning of the program. Staff has rejected this approach for two reasons. First, to avoid economic dislocation, covered entities need time to plan for and invest in ways to reduce their emissions in a cost-effective manner. Second, a large portion of free allocation is necessary due to the uncertainty associated with covered entities' ability to pass through costs to consumers and remain competitive.

4. No Banking of Allowances

The proposed cap-and-trade regulation allows for unlimited banking of allowances. Allowances, once issued, do not expire. Banking provides market stability during times when emissions may fluctuate due to weather or economic conditions. In such cases, banking helps to prevent large fluctuations in allowance price during these periods of emissions variation. Banking also helps provide price stability by assuring that allowances will retain their value, and gives covered entities a stake in the continued operation of the program because allowances are a financial asset. A positive impact of allowing banking is that it incentivizes firms to over-comply in early compliance periods.

Staff rejected the alternative of disallowing banking of allowances because it provides no financial or environmental benefits and would not necessarily increase the environmental integrity of the program.

5. Not Linking to Other Cap-and-Trade Programs

The proposed cap-and-trade regulation allows potential future linkage with external greenhouse gas emissions trading systems (GHG ETS), including those of WCI partner jurisdictions. Linking with external GHG ETS's involves jurisdictions accepting one another's allowances and offsets for compliance, creating a regional market. Linkage would increase the total supply of compliance instruments, which would reduce compliance costs for California's covered entities.

As proposed, the cap-and-trade regulation does not link with any external GHG ETS. Future linkage would require regulatory action by the Board supported by a case-by-case analysis, including an environmental analysis. Several options

exist for how linkage with WCI partner jurisdictions or other GHG ETS's might occur (e.g., unilateral linkage,[58] bilateral linkage[59]) but are not explored here.

Staff rejected the option of precluding linkage with external cap-and-trade programs because linkage can lead to significant reductions in compliance costs associated with increasing the supply of compliance instruments. While linkage would require California to forfeit some control over where the reductions occur (i.e., out of state versus in state), staff believes the increased cost-effectiveness of the program that should result from a more liquid and better-functioning market for California's covered entities offsets the possibility of fewer in-state reductions.

6. Facility-Specific Caps

An alternative to an overarching cap for covered entities and sectors would be to have facility-specific declining caps. This would ensure that each facility would reduce its proportional share of emissions. Under such an option, ARB would need to identify the specific facilities that would be covered by the program, conduct an appropriate analysis to support a specific cap for each facility, and consider whether the reduction requirements established by the declining cap for that facility would be cost-effective. Such a program would be extremely difficult to apply to imported electricity or to distributed use of fuels, so that the overall scope of the program would likely be need to be limited to industrial facilities and in-state power plants.

Facility-specific caps would diminish the flexibility of these facilities to meet the GHG reduction goals. In a standard cap-and-trade program, facilities can either reduce emissions or buy allowances from other facilities that do reduce emissions. Restricting trading leaves only one compliance option: reduce emissions on-site through increasing efficiency, modernizing equipment, changing to cleaner fuels, or reducing production. If the cap for all facilities declined at the same rate, individual facilities might not have cost-effective options, especially if they seek to expand production to meet increased demand. Establishing caps that decline at different rates at different facilities would require ARB staff to conduct a detailed analysis to determine what, if any, cost-effective options were available at each covered facility.

Reducing the flexibility of trading allowances would increase the cost of the program. With facility-specific caps, no market would exist that allowed entities to trade allowances and achieve the lowest-cost reductions. Facilities with large amounts of low-cost reductions would have little incentive to over-comply, while

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[58] Unilateral linkage would allow the covered entities from one jurisdiction to use compliance instruments from a linked program, but would not allow covered entities from the linked jurisdiction to use allowances and offset credits issued by the first jurisdiction.

[59] With bilateral linkage, compliance instruments are fully fungible between linked programs.

facilities with a limited number of reduction opportunities would have to implement expensive reduction strategies. Thus, staff has rejected this alternative because of the increased cost of implementing the program across the economy.

Although facility-specific caps would ensure that emissions reductions occur in specific communities, ARB's analysis[60] indicates that California's existing programs to meet federal air quality standards will provide the majority of criteria pollutant reductions with further NO_x reductions ranging from about 15 to 45 percent by 2020. In communities that ARB evaluated, the cap-and-trade regulation has the potential to provide small additional criteria pollutant reductions in the range of 1 to 3 percent if all greenhouse gas reductions were implemented locally. Although ARB staff does not predict that the cap-and-trade regulation will result in emissions increases, our examination of the potential impacts of facility growth, for any reason, shows that in the context of total community emissions, these increases would be very small, reducing the expected 15 to 45 percent reduction by 2020 by 2 percent or less.

7. Restricting Trading in Adversely Impacted Communities

Restricting trading in adversely affected communities is a design option to reduce potential negative impacts of cap-and-trade. By restricting trading in communities with heavy localized air pollution, local facilities must reduce their share of emissions. This design option is similar to facility-specific caps but applied only to discrete locations.

Although restricting trading in adversely affected communities would ensure that emissions reductions occur in specific communities, ARB's analysis[61] indicates that California's existing programs to meet federal air quality standards will provide the majority of criteria pollutant reductions, with further NO_x reductions ranging from about 15 to 45 percent by 2020. In communities that ARB evaluated, the cap-and-trade regulation has the potential to provide small additional criteria pollutant reductions in the range of 1 to 3 percent, if all greenhouse gas reductions were implemented locally. Although ARB staff does not predict that the cap-and-trade regulation will result in emissions increases, our examination of the potential impacts of facility growth, for any reason, shows that in the context of total community emissions, these increases would be very small, reducing the expected 15 to 45 percent reduction by 2020 by 2 percent or less.

Restricting trading among participants increases the cost to comply with the program. A cap-and-trade program gives entities the option of decreasing

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[60] See Appendix P: Co-Pollutant Emissions Assessment for more details.
[61] See Appendix P: Co-Pollutant Emissions Assessment for more details.

emissions at the facility or buying allowances from another entity that reduced emissions. In limiting these options by reducing trading, emissions reductions are mandated at that entity. This limits the market to find the lowest-cost compliance pathway. Staff feels the potential limited environmental benefits of restricting trading in adversely affected communities do not outweigh the increased cost to comply with the proposed regulation.

V COMPLIANCE PATHWAYS SCENARIOS

A. Introduction

The California cap-and-trade program is proposed to be a flexible, market-based regulation designed to reduce greenhouse gas (GHG) emissions. The program neither mandates nor prohibits the use of specific technologies to achieve these reductions. The scenarios described in this Chapter demonstrate that covered entities will be able to comply with the cap-and-trade program using a variety of currently available GHG reduction strategies. Further, numerous abatement strategies exist, and compliance is not contingent upon the availability of only a limited number of abatement strategies.

Compliance pathways demonstrate which strategies covered entities could utilize (i.e., what "paths" they could travel) to comply with the cap-and-trade regulation. Staff developed compliance pathways for four scenarios, each with different assumptions about the availability of GHG abatement opportunities and the pathways that covered entities would use to achieve the GHG emissions cap. Each scenario includes enough emissions abatement opportunities to meet the AB 32 goal.

Staff developed four scenarios that illustrate the range of pathways that capped entities could follow to meet their compliance obligations and collectively achieve the cap. Staff believes that Scenario 1 (full abatement potential from complementary policies and full availability of offsets) is the most likely scenario, as it includes staff's best estimates of complementary measures and offset potential achieved within the 2012–2020 timeframe. In this scenario, 43.3 $MMTCO_2e$ of the required 74.6 $MMTCO_2e$ of reductions in 2020 would be achieved directly through the complementary measures, and 31.3 $MMTCO_2e$ of reductions would be achieved through the price signal imposed by the cap-and-trade program. At this level of abatement, the allowance price would be $20/metric ton in 2020—a price considered to be achievable by covered entities.

In Scenarios 2 and 3, in which offset supply (Scenario 2) and complementary policy reduction estimates (Scenario 3) would be decreased, allowance prices would increase to $40/metric ton in 2020. However, in Scenario 4, in which both complementary policy reduction estimates and offset potential would be reduced, large price increases would occur. This increase comes from the resulting requirement that many of the emissions reductions must come from consumers. Analysis.

B. Relationship between Compliance Pathways Analysis and Economic Analysis

The compliance pathways presented here complement the abatement estimates from more comprehensive models such as Energy 2020. The compliance pathways scenarios should be used in conjunction with the economic analysis provided in Chapter VIII: Economic Impacts of the Proposed Regulation. The

compliance pathways and economic analyses estimate the cost of compliance with the proposed cap-and-trade regulation using different models and methods.[62] Limitations of the compliance pathways analysis include difficulty harmonizing assumptions and inputs across all abatement activities, and that interaction effects between abatement activities are not taken into consideration. This analysis also does not account for implementation obstacles such as compliance with New Source Review regulations for criteria pollutants, availability of fuels and feedstock, and other environmental requirements.

This analysis should be viewed as illustrative of possible strategies and scenarios for reducing emissions consistent with the declining cap. It is flexible in that assumptions about abatement strategies can be easily modified, and transparent in that all assumptions about abatements strategies are clearly defined. Information about the assumptions, as well as references to supporting data, are described in detail in Appendix F: Compliance Pathways Analysis.

C. Baseline Forecast and Required Reductions

The AB 32 baseline forecast of emissions from California capped sectors is given in Table V-1and presented graphically in Figure V-1. The baseline forecast represents an update of the GHG emissions inventory forecast used in developing the Scoping Plan. The forecast used the economic and energy forecasts from the California Energy Commission's 2009 Integrated Energy Policy Report,[63] which reflects the current economic downturn. Consistent with the updated economic analysis of the Scoping Plan completed in March 2010,[64] this baseline also assumes implementation of the existing California vehicles standards and the 20 percent Renewable Portfolio Standard. Other Scoping Plan measures are assessed in the compliance pathways analysis presented here, and so are not included in the baseline forecast. The difference between the baseline emissions forecast and the cap determines the GHG abatement necessary to meet the cap.

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[62] The economic analysis uses energy and macroeconomic models, while this analysis uses a bottom-up approach based on information about existing technologies.

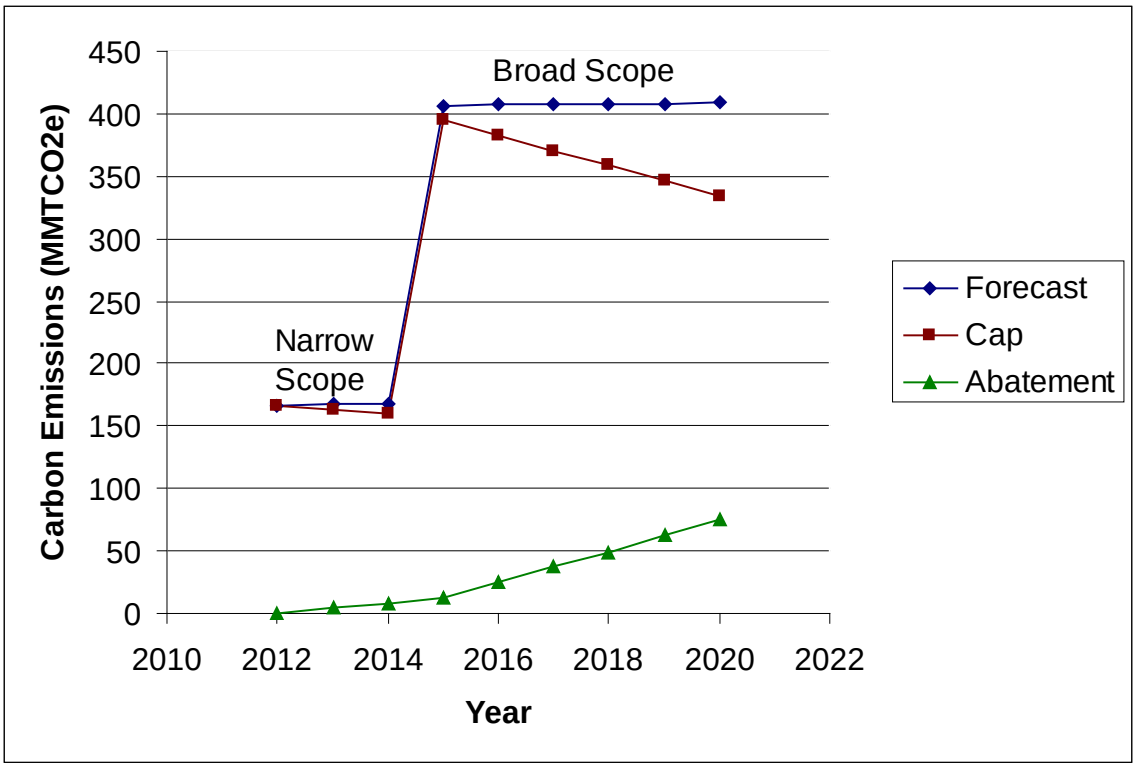
[63] California Energy Commission. 2009 Integrated Energy Policy Report, Final Commission Report, CEC -100-2009-003-CMF. http://www.energy.ca.gov/2009publications/CEC-100-2009-003/CEC-100-2009-003-CMF.PDF (accessed October 25, 2010).

[64] *Updated Economic Analysis of California's Climate Change Scoping Plan: Staff Report to the Air Resources Board.* March 24, 2010. http://www.arb.ca.gov/cc/scopingplan/economics-sp/updated-analysis/updated_sp_analysis.pdf (accessed September 23, 2010).

Table V-1: Baseline Emissions, Cap Level, and Abatement Required to Achieve the Cap.

	GHG Emissions ($MMTCO_2e$)		
Year	Forecast for Sources in the Cap-and-Trade Program	Cap	Annual Abatement Needed
2012	165.8	165.8	0.0
2013	167.3	162.8	4.5
2014	168.1	159.7	8.4
2015	406.7	394.5	12.2
2016	406.9	382.4	24.5
2017	407.6	370.4	37.2
2018	407.6	358.3	49.3
2019	408.4	346.3	62.1
2020	408.8	334.2	74.6

Figure V-1: Baseline Emissions, Cap Level, and Abatement Required to Achieve the Cap



D. Scenarios Analyzed

Staff developed four scenarios to illustrate the range of potential pathways that capped entities could follow to meet their compliance obligations and collectively achieve the cap. These are discussed in detail below. In each scenario, the entities collectively meet the regulating cap in the proposed regulation.

Staff varied assumptions about the effect of complementary policies and offset supply to create different scenarios. For complementary policies, staff explored two scenarios: (1) full abatement potential from complementary measures consistent with estimates in staff reports and the Scoping Plan, and (2) reduced abatement potential from complementary measures. For offsets, staff also explored two potential supply scenarios that varied the number of available offset credits: (1) sufficient offsets were available to meet the 8 percent limit in the regulation, (2) offsets were only available to meet 4 percent of entities' compliance obligations.

Based on implementation status, past experience, and current estimates of offset supply, staff believes that the most likely scenario is Scenario 1 (full abatement potential for both complementary measures and offsets) and the least likely scenario is Scenario 4 (partial abatement potential from complementary policies and offsets). Scenario 4 could occur if implementation of complementary measures were delayed due to legal action, if non-regulatory complementary measures were not as effective as originally estimated, if economic growth meant that reduced emissions intensity from the measures in the Scoping Plan still resulted in higher remaining emissions than estimated, and/or if offset projects did not materialize as expected by staff. Staff chose to analyze a full range of scenarios in order to illustrate how the cap could be met under a variety of assumptions. The next sections describe the assumptions for each of the four scenarios.

1. Scenario 1: Full Complementary Policies, Full Offsets

Scenario 1 assumes that full abatement potential is available from all sectors and all complementary policies, and reflects an offset supply equal to the offset quantitative limit.

2. Scenario 2: Full Complementary Policies, Partial Offsets

Scenario 2 assumes full abatement from the complementary policies and a reduced availability of offsets.

3. Scenario 3: Partial Complementary Policies, Full Offsets

In Scenario 3, staff explores a reduced abatement potential from the complementary policies and reflects and offset supply equal to the offset quantitative limit.

4. Scenario 4: Partial Complementary Policies, Partial Offsets

In Scenario 4, staff explores reduced abatement potential from complementary policies, and assumes a limited supply of offset credits.

E. Development of Abatement Cost Curves

1. Introduction

Abatement cost curves, or *supply curves,* provide a means to graph the impacts and costs of numerous abatement strategies. In the context of this analysis, *abatement* refers to greenhouse gas emissions reductions. The cost of each strategy is measured in dollars per metric ton of CO_2 equivalent ($MTCO_2e$) reduced. In these figures, the x-axis represents the annual GHG abatement potential, and the y-axis represents the cost of the strategy in dollars per metric ton. Strategies are plotted in blocks, with the width of the block representing the maximum potential GHG reduction, and the height representing the average cost in dollars per $MTCO_2e$ reduced. Strategies are organized by cost from least to greatest, and plotted adjacent to one another. Thus, the abatement strategies are sorted to give an idea of how the cost of strategies compare to each other. An example of an abatement cost curve for GHG reductions is shown in Figure V-2 and described below.

Figure V-2: Example 2020 Abatement Curve

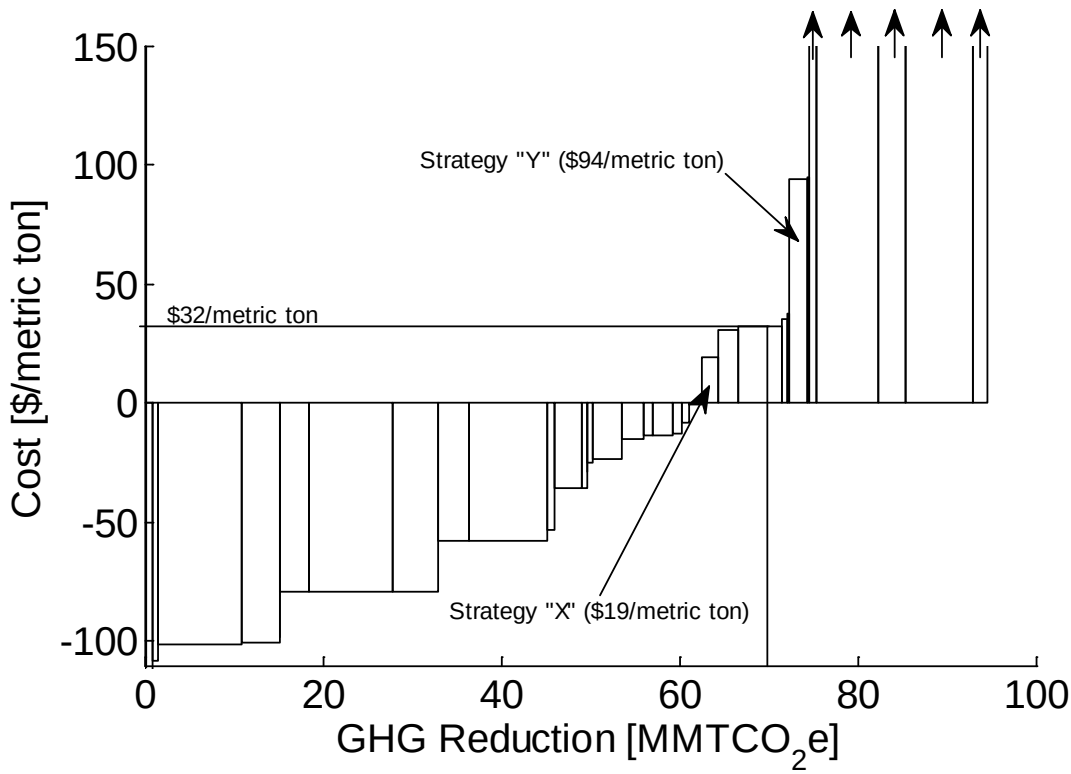


Figure V-2 shows an example abatement curve for a set of hypothetical GHG abatement strategies. Some costs are negative, denoting that the strategy saves money annually—usually from a decreased fuel cost from the baseline case. Thus, the strategy will pay for itself over its lifetime. Positive costs show that the strategy does not save money annually, usually caused by a combination of high

capital expenditures and low fuel reduction. These strategies will not pay for themselves over the life of the strategy in the absence of a cap-and-trade regulation.

Abatement curves are used to evaluate which abatement strategies might occur under a California cap-and-trade program. To use the curve to analyze a cap-and-trade scenario, a line is drawn at the amount of GHG reductions required. An example is shown in Figure V-2. In this illustration, achieving the 2020 cap would require approximately 70 $MMTCO_2e$ in reductions from the baseline case. This is illustrated by drawing a vertical line at a reduction of 70 $MMTCO_2e$. At the intersection of the GHG reduction line and the cost curve, a horizontal line is drawn, estimating the marginal cost of GHG emissions reductions; that is, the cost to reduce one more metric ton of GHG emissions. In the example case, the marginal cost is $32/metric ton. The analysis assumes that all abatement strategies to the left of the curve will be implemented because those strategies are less expensive than the marginal price. Thus, strategy ”X,” which costs $19/metric ton, is assumed to be fully implemented. All abatement strategies to the right of the vertical line are considered more expensive than the marginal price, and there is no economic incentive to develop these strategies. Thus strategy ”Y,” which costs $94/metric ton, is assumed not to be implemented.

2. Abatement Cost Curve Calculations

The abatement potential and cost of each GHG reduction strategy is calculated in reference to the baseline case, and therefore are dependent upon assumptions about the baseline forecast. Reductions are calculated by taking the difference between the emissions from the alternative strategy and the baseline forecast. Similarly, the capital costs and operation and maintenance (O&M) costs of a new strategy must be calculated with respect to what is being replaced. In most cases, the unit being replaced is similar to the new unit (i.e., a high-efficiency boiler replacing a low-efficiency boiler), and the change in O&M cost is negligible.

Greenhouse gas abatement is calculated by a reduction in combustion of fuel that would otherwise have been burned, a reduction in process emissions, or a combination of the two. Most GHG abatement strategies that are analyzed reduce GHG emissions by reducing the amount of fuel burned. Examples of these fuel-reduction strategies are increasing the efficiency of boilers and process heaters, increasing insulation, and purchasing more-efficient vehicles. The calculation of GHG reductions from reductions in fuel use are shown in Equation V-1.

Equation V-1: Greenhouse Gas Reduction Potential Calculation of Abatement Strategies

$$GHGR = \left(FuelUseNewStrategy - FuelUseBAUStrategy\right) * n * FI \ ,$$

where *GHGR* is the greenhouse gas reductions, *FuelUseNewStrategy* is the annual fuel use of the new unit, *FuelUseBAUStrategy* is the annual fuel use of the unit that was replaced, *n* is the number total number of units installed, and *FI* is the fuel intensity of the fuel used, in $MTCO_2e$ per one million British thermal units (MMBTU).

Costs are calculated on an annual basis by summing annualized capital cost, O&M costs, and fuel savings and expenditures. Staff used discount rates to annualize the capital cost. The equation used to calculate the annualized capital cost is shown in Equation V-2:

Equation V-2: Annualized Capital Cost Equation

$$AnnualizedCapitalCost = CapitalCost \times \left(\frac{r}{1 - \frac{1}{(1+r)^t}} \right),$$

where *r* is the discount rate and *t* is the life of the capital in years.

Two discount rates are used to develop the abatement curves. For strategies adopted by the general public (e.g., vehicles and energy efficiency), staff assumed a discount rate of 5 percent. Staff assumed a discount rate for industry of 30 percent; this higher rate reflects industries' strategy to invest in abatement opportunities with shorter payback periods and under the constraint of limited availability of capital. The 30 percent discount rate for industry has been used in a number of studies.[65,66,67,68] The higher rate also ensures that additional costs are included that may not have been included in the capital cost, such as permitting costs.

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[65] Wagger, David. *Reducing CO_2 Emissions from California's Cement Sector.* Washington D.C.: Center for Clean Air Policy. 2005

[66] Bloomberg New Energy Finance. *Carbon Markets – North America – Research Note.* 2010

[67] Sathaye, Jayant, et al. Bottom-up Representation of Industrial Energy Efficiency Technologies in Integrated Assessment Models for the Cement Sector. Lawrence Berkeley National Laboratory, Environmental Energy Technologies Division. 2010.

[68] Xu, Tengfang, et al. *Development of Bottom-up Representations of Industrial Energy Efficiency Technologies in Integrated Assessment Models for the Iron and Steel Sector.* Lawrence Berkeley National Laboratory, Environmental Energy Technologies Division. 2010.

Costs on this study's abatement cost curve are measured in dollars per metric ton. By calculating abatement on a per-metric-ton basis, the costs of many abatement opportunities can be directly compared. The calculation is shown in Equation V-3:

Equation V-3: Dollars-per-Metric-Ton Cost Calculation of Strategies

$$Cost\left(\frac{\$}{MetricTon}\right) = \frac{TotalAnnualCostOfAltStrategy - TotalAnnualCostOfBAUStrategy}{GHGR},$$

where *TotalAnnualCostofAltStrategy* is the sum of the annualized cost of the new unit, *TotalAnnualCostofBAUStrategy* is the sum of the annualized cost of the old unit, and *GHGR* is the total annual GHG reductions as calculated by Equation V-1.

3. Abatement Strategies

A summary of the abatement options analyzed in this Chapter is shown in Table V-2. The abatement potential is split into five sectors: industrial, power, transportation, residential and commercial, and offsets. A summary of the sectors and strategies is included below. For more information on the reduction strategies, see Appendix F: Compliance Pathway Analysis.

Table V-2: Abatement Option Summary

Sector	Abatement Options	Sources[69]
Industrial	Steam Efficiency	U.S. Department of Energy
	Process Heat Efficiency	Lawrence Berkeley National Laboratory
	Fuel Mix	case studies
	Process Improvements	local air districts
Power	Renewables	Energy and Environmental Economics, Inc. (E3)
	Power Dispatch: Coal-to-Gas Switching	Economic and Allocation Advisory Committee (EAAC)
	Combined Heat and Power	
Transportation	Light-Duty Vehicle Fuel Efficiency	U.S. EPA VISION model
	Biofuels	U.S. Energy Information Administration fuel economy estimates
	Electrification	ARB EMFAC model
	Regional Transportation Targets	
Residential and Commercial Energy	Energy Efficiency	E3/Itron
	Consumer Demand Response	EAAC
Offsets	Methane Digesters	Climate Action Reserve & ARB estimates
	Forestry	
	Ozone Depleting Substances	

Abatement strategies available to the industrial sector include efficiency increases from steam systems and process heat systems, fuel changes, and process improvements. California industries analyzed were petroleum refining, oil and gas, food, wood products, chemicals, iron and steel, and cement. Staff relied on reports from the U.S. Department of Energy, Lawrence Berkeley National Laboratory, and local air districts, among others, to obtain estimates of industrial abatement potential.

Abatement strategies available to the power sector include increased renewable electricity, changes in power dispatch from coal power to gas power, and increased combined heat and power. Estimates of the abatement potential from these strategies were gathered from an Energy and Environmental Economics, Inc. (E3) report prepared for the California Public Utilities Commission.[70] The

[69] Specific references can be found in Appendix F: Compliance Pathways Analysis.

[70] Energy and Environmental Economics, Inc. (2010): Greenhouse Gas Calculator for the California Electricity Sector. http://www.ethree.com/documents/GHG%203.11.10/GHG%20Calculator%20version%203b_Final_to_Post_March2010.zip.

total abatement potential of renewable electricity was scaled to match the Renewable Electricity Standard (RES) that increases the proportion of electricity sales from renewables to 33 percent in 2020. For coal-to-natural gas dispatch changes, E3 provided a figure detailing the 2020 WECC dispatch under different allowance prices. Three 2020 allowance prices were chosen from this plot to represent the coal-to-gas switching: $50/metric ton, $80/metric ton, and $120/metric ton. These prices were chosen to be just above the consumer demand responses mentioned below.

Abatement from the transportation sector relied on ARB estimates from complementary measures, including the Low Carbon Fuel Standard (LCFS), Advanced Clean Car standards, Goods Movement, vehicle efficiency, Regional Targets, High Speed Rail, and Heavy- and Medium-Duty Hybridization and Aerodynamics.

Abatement from the residential and commercial sector includes energy efficiency and consumer demand responses. Electricity and natural gas efficiency abatement potentials were based on the work done by E3 and Itron.[71] Consumer demand responses are calculated from price elasticities of electricity and gasoline. That is, when the price of electricity and gasoline increase, consumers reduce demand for these goods. The consumer demand responses for electricity and gasoline are calculated for three allowance prices: $20/metric ton, $60/metric ton, and $100/metric ton. For each of these allowance prices, estimates are made about the increased price of electricity and gasoline. With the increase in prices, demand responses are calculated based on electricity and gasoline elasticities of -0.15 and -0.1, respectively.[72,73]

Offset protocols under consideration with this regulation include the U.S. Forest Projects Protocol, Urban Forest Projects Protocol, U.S. Ozone Depleting Substances Projects Protocol, and Livestock Manure (Digester) Projects Protocol. Abatement potentials of these reductions are based on ARB estimates. While ARB staff anticipates that additional offset protocols may be brought to the Board for approval in 2011 and beyond, no attempt was made in this analysis to consider the effect of additional offset supplies beyond the four protocols that are part of the current rulemaking.

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[71] Rufo, Michael W., and Alan S. North. *Assessment of Long-Term Electric Energy Efficiency Potential in California's Residential Sector.* California Energy Commission, PIER Energy-Related Environmental Research. CEC-500-2007-002.
[72] Hughes, Jonathan E., Christopher R. Knittel, and Daniel Sperling. 2006. *Evidence of a Shift in the Short-Run Price Elasticity of Gasoline Demand.*
[73] Bernstein, M. A., and J. Griffin. 2005. *Regional differences in the price elasticity of demand for energy.* RAND Corporation.

4. Abatement Curve Results

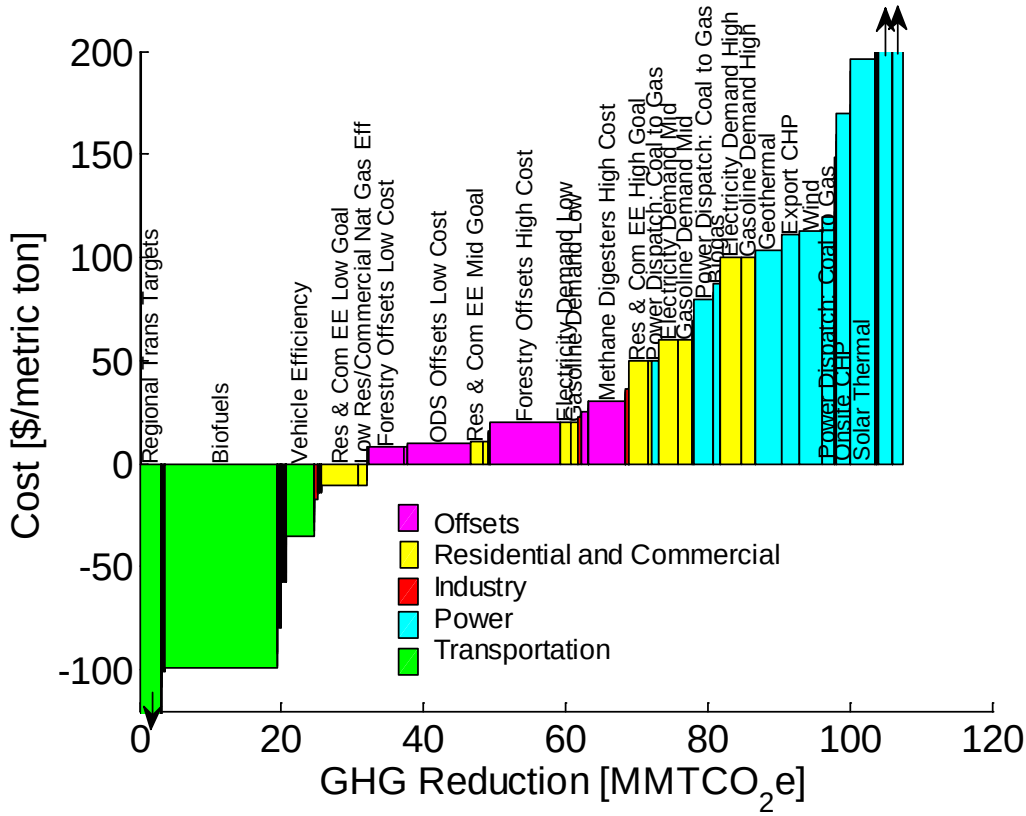
Three master abatement cost curves were constructed. The first curve includes all the potential abatement strategies that would be available to capped sectors, including those that would be used to meet complementary measure requirements. The second curve includes abatement strategies that would be driven by the cap-and-trade program price signal, but excludes abatement strategies required by other measures (e.g., LCFS, Advanced Clean Cars, Regional Targets, RES). The last abatement curve is a further subset of the abatement potential driven by the price signal, and it only includes industry abatement opportunities.

In each curve, two methods are used to differentiate strategies. For strategies that have a sufficiently large abatement potential, the name of the strategy is plotted over the strategy. By only placing a title on these large strategies, the curves are more legible and titles are not placed over one another. The other method of differentiating strategies is through color. In each curve, there is a legend of the colors used to describe the types of abatement opportunities

a. Total Capped Sector Abatement Potential

The Total Capped Sector Abatement Potential shown in Figure V-3 represents abatement strategies that are available to the capped sectors in 2020, including offsets, renewable energy, vehicle efficiency, and biofuels. The baseline forecast for capped sectors is 408.8 $MMTCO_2e$ in 2020, so the capped sector must achieve reductions of at least 74.6 $MMTCO_2e$ in 2020 to achieve the AB 32 target.

Figure V-3: Total Capped Sector Abatement Potential in 2020



The total capped sector abatement curve shows approximately 108 $MMTCO_2e$ of abatement available in 2020, with over 32 $MMTCO_2e$ of that abatement having a negative cost per metric ton. The least expensive abatement opportunities are from the transportation sector. These include regional transportation targets (SB 375), biofuels, and high-efficiency vehicles.

Approximately 76 $MMTCO_2e$ of abatement potential is available at a positive cost-per-metric-ton. Offsets are available in the mid-range cost per metric ton ($10–$30/metric ton), with a total abatement potential of 30 $MMTCO_2e$. The residential and commercial sector has a wide range of abatement prices (-$10/metric ton to $100/metric ton). The power sector has the highest-priced abatement opportunities, with most greater than $80/metric ton.

b. Abatement Potential Driven by the Price Signal

The abatement potential driven by the price signal is shown in Figure V-4. This curve is a subset of the strategies plotted in the total capped sector abatement potential in Figure V-3. The abatement in Figure V-4 does not include reductions that are expected to take place due to complementary measures (e.g., LCFS, Advanced Clean Cars, RES, Regional Transportation Targets). The abatement potential driven by the price signal includes energy efficiency, even though energy efficiency is one of the complementary measures. It is included because

additional energy efficiency can be driven by the cap-and-trade program price signal. E3 assumes three energy-efficiency scenarios based on a 2007 CEC report[74] and ranging in cost from -$10 to $50/metric ton. High-cost energy efficiency becomes incentivized as energy prices increase due to price signal.

According to Figure V-4, approximately 72 $MMTCO_2e$ of abatement is available from capped sectors and offsets. Of this potential, 9 $MMTCO_2e$ of abatement has a negative cost-per-metric-ton. Most of the available abatement potential is from consumers. Even at a low costs, consumers respond with increased electricity efficiency. At higher costs, consumers respond with greater conservation of electricity and gasoline. A significant portion of offsets are available at medium prices ($10–$30/metric ton). Allowance price is shown to promote the creation of additional offsets, and increased allowance prices bring additional forestry, ODS, and methane digester offsets. At prices greater than $50/metric ton, it becomes cost-effective to dispatch power from natural gas power plants over coal power plants. Increasing the price further promotes additional dispatch switching to natural gas.

The abatement potential driven by the price signal is the primary tool used in the analyses of the compliance pathway scenarios. As mentioned, this curve only shows abatement strategies that are driven by a price signal, thus a given number of reductions can be used to determine the allowance price. With a given allowance price, staff can use the curve to analyze what strategies may or may not take place to describe the compliance pathways.

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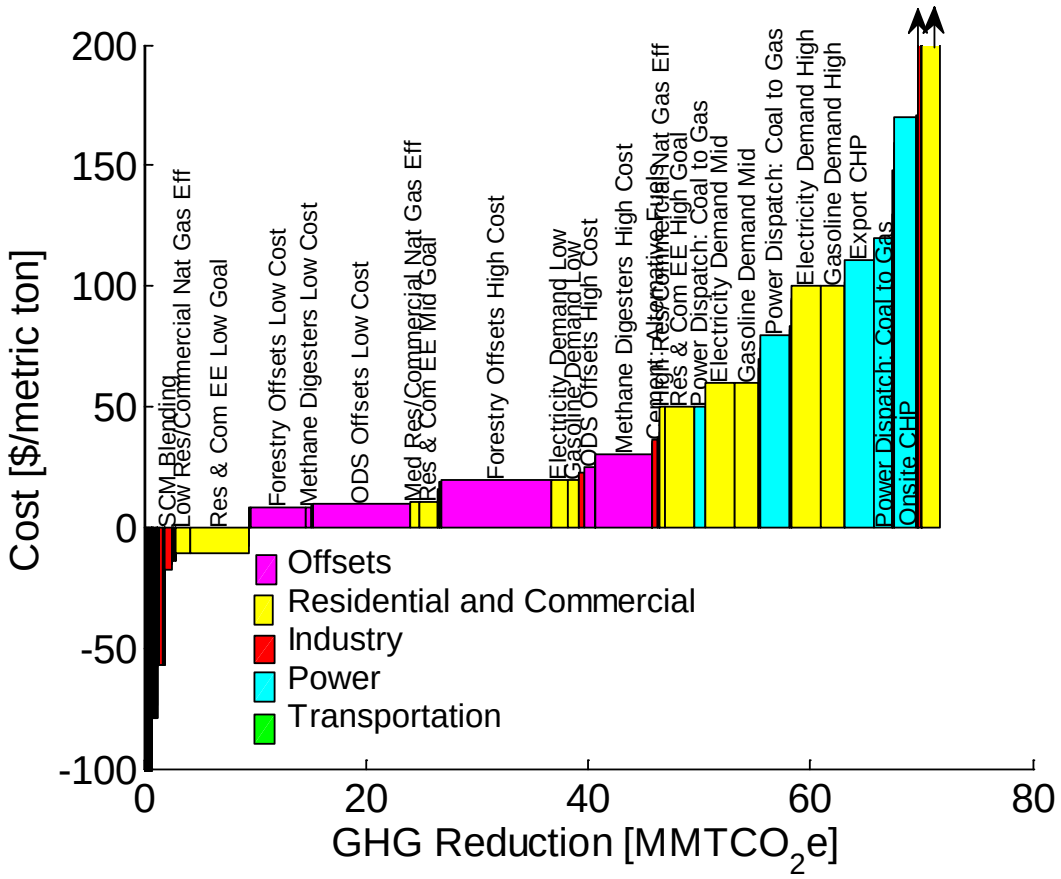
[74] Rufo, Michael W., and Alan S. North. *Assessment of Long-Term Electric Energy Efficiency Potential in California's Residential Sector.* California Energy Commission, PIER Energy-Related Environmental Research. CEC-500-2007-002.

Figure V-4: Abatement Potential Driven by the Price Signal in 2020



c. Industry-Only Abatement Reductions

Reductions from the industry section are shown in Figure V-5. A total of 5.5 $MMTCO_2e$ in reductions were identified for the industrial sector. The lowest cost reductions are boiler and process heater optimization. This is usually accomplished by trimming excess air in the units. Most optimization strategies have a significant negative cost, saving more than $100/metric ton; however, additional reductions can be attained at a cost of -$10/metric ton to $20/metric ton.

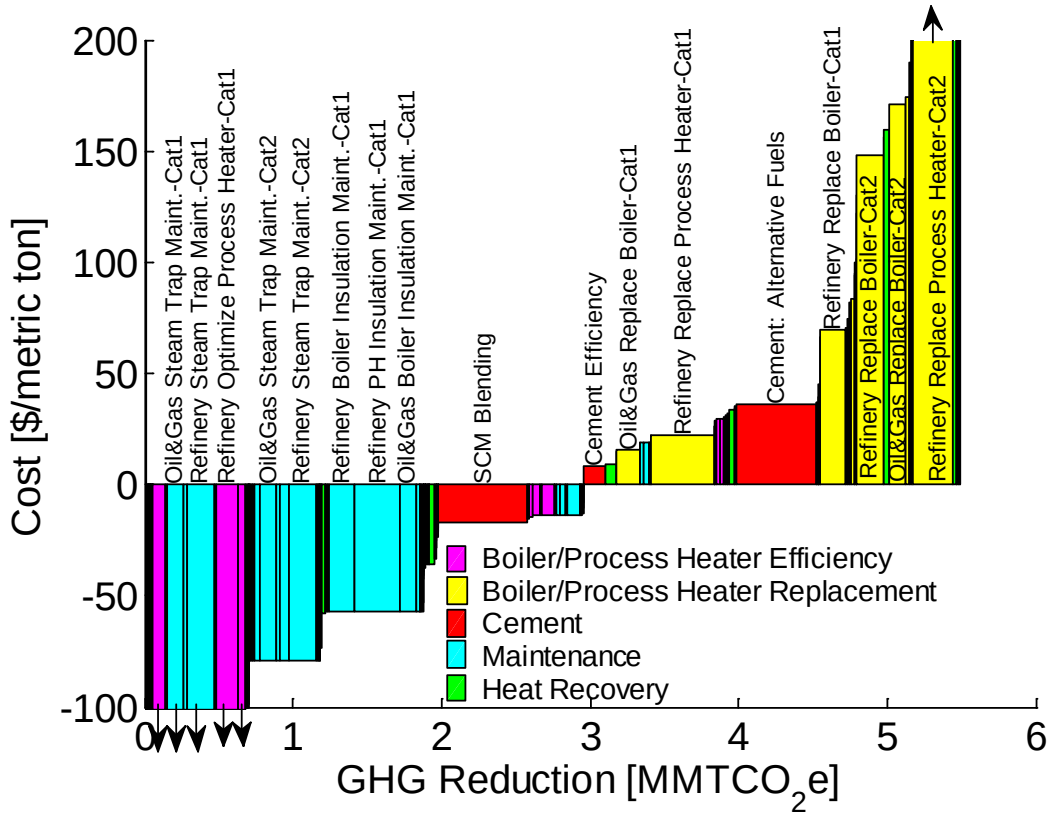
Maintenance strategies include steam leak and steam trap maintenance. Increasing maintenance has the largest potential to reduce GHG in the industrial sector. Most of these opportunities are available at negative costs, ranging from -$100/metric ton to -$40/metric ton. Additional maintenance for boilers and process heaters generates emissions reductions.

Staff looked at heat recovery techniques such as flue-gas heat recovery for process heaters, boiler economizers, and boiler blowdown heat recovery. This analysis found a small amount of abatement potential from heat recovery at a

negative cost. However, the cost of most abatement from heat recovery ranged between $10/metric ton and $100/metric ton.

Blending of semi-cementitious material (SCM) with cement to produce concrete has a large potential to reduce GHG emissions at a savings (-$17/metric ton). Semi-cementitious materials are a by-product of coal-fired power plants and other industrial facilities. Blending SCMs with cement results in more concrete per unit of cement, so that the emission intensity of the use of cement is decreased.

Figure V-5: Industry-Only Abatement Potential in 2020



An additional 2.58 $MMTCO_2e$ have a positive cost per metric ton, and thus, would likely not be implemented unless there was a price signal on GHG emissions. The largest abatement opportunities at positive costs per metric ton are boiler and process heater replacement. Depending on the efficiency of the unit being replaced, a range of costs vary between $20/metric ton and $200/metric ton. In the positive cost per metric ton, additional heat recovery strategies are also available. Alternative fuels for cement can achieve significant reductions at $36/metric ton.

F. Compliance Pathways Analysis

The proposed cap-and-trade program does not specify what combination of GHG abatement strategies regulated parties must implement. Instead, the program establishes an overall cap on GHG emissions and allows covered entities to use any combination of GHG abatement strategies, including those not covered in this Chapter, to achieve the cap. Based on the abatement strategies described above, ARB staff has analyzed four scenarios with different compliance pathways for achieving the necessary reductions.

The abatement strategies that sources will implement in the future cannot be predicted. Technologies that currently appear most likely to reduce emissions in the near- to mid-term could encounter delays, and development of other technologies could achieve breakthroughs. Also, since the proposed regulation is market based, regulated entities make decisions on energy efficiency using in-house analyses. Thus, the path taken to achieve the may be different from the pathways described below.

1. Results of Scenario 1: Full Abatement Potential from Complementary Policies, Full Availability of Offsets

In this scenario, full abatement potential is available from complementary policies and offsets. As discussed above, 74.6 $MMTCO_2e$ in reductions from projected baseline emissions are needed to meet the cap in 2020. Table V-3 identifies the reductions assumed in this scenario from complementary measures that will reduce emissions under the cap. The cap-and-trade program price signal is required to achieve the remaining reductions of 31.3 $MMTCO_2e$.

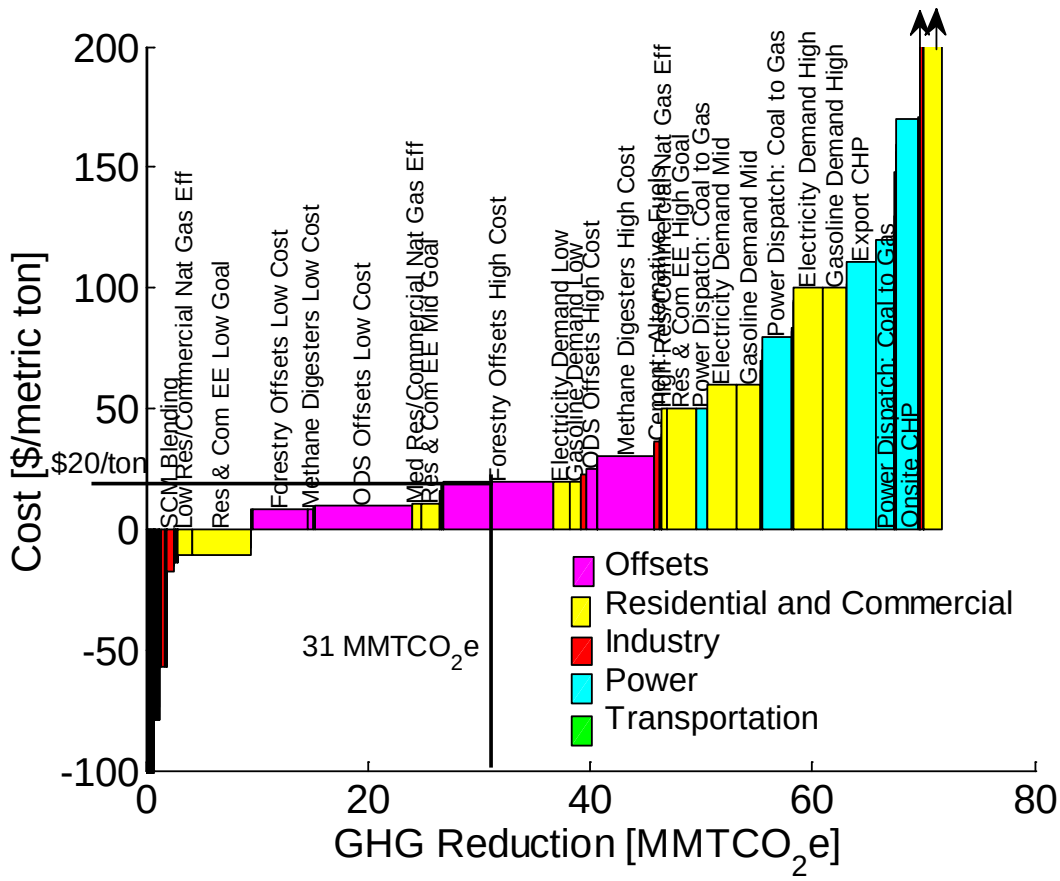
Table V-3: Scenario 1 Abatement Estimates (in $MMTCO_2e$) in 2020

Abatement Needed (Table V-1)	74.6
Advanced Clean Cars Standards	3.8
LCFS	15.1
Regional Targets	3.0
RES	11.4
Vehicle Efficiency	4.6
Goods Movement	3.5
Med-/Heavy-Duty Hybridization and Aerodynamics	0.9
High Speed Rail	1.0
Total Abatement from Complementary Policies	43.3
Abatement from Capped Sectors Driven by the Price Signal	31.3[75]

[75] Numbers may not add due to rounding.

The abatement curve driven by the price signal corresponding to Scenario 1 is shown in Figure V-6. As shown in the figure, 31 $MMTCO_2e$ of abatement corresponds to an allowance price of $20/metric ton. Thus, if all measures less than $20/metric ton are implemented, the emissions will stay below the cap. These measures include a number of low-cost industrial abatement strategies, such as optimization of boilers and process heaters, steam maintenance, and SCM blending. The residential and commercial sector will respond by implementing a large amount of residential and commercial efficiency. Approximately 16 $MMTCO_2e$ of offsets will be used to comply with the cap-and-trade regulation. All of the low-cost offsets will be used for compliance, and only a portion of the high-cost forestry projects will be implemented.

Figure V-6: Abatement Curve for Scenario 1 in 2020



2. Results of Scenario 2: Full Abatement Potential from Complementary Policies, Partial Availability of Offsets

In this scenario, the offsets potential is reduced by half. Table V-4 identifies the reductions assumed in the scenario from the complementary measures that will reduce emissions under the cap. Similar to Scenario 1, the complementary measures achieve 43.3 $MMTCO_2e$ of reductions, requiring the allowance price to drive an additional 31.3 $MMTCO_2e$ of reductions.

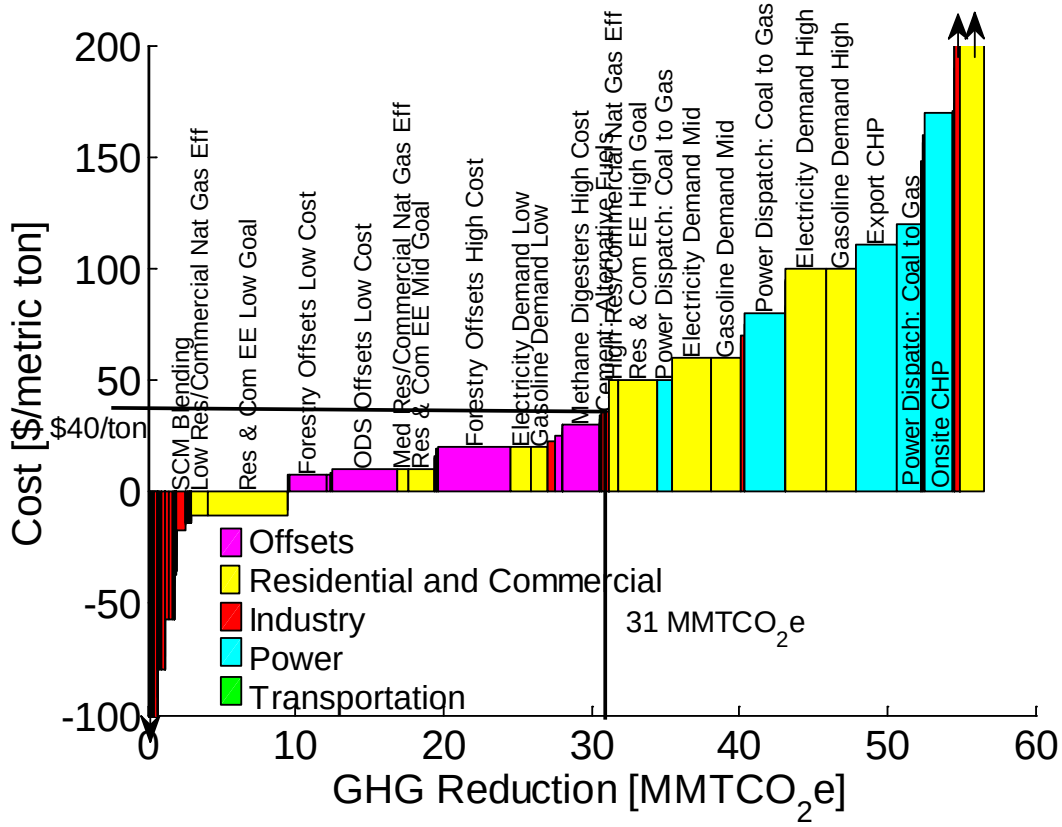
Table V-4: Scenario 2 Abatement Estimates (in $MMTCO_2e$) in 2020

Abatement Needed (Table V-1)	74.6
Advanced Clean Cars Standards	3.8
LCFS	15.1
Regional Targets	3.0
RES	11.4
Vehicle Efficiency	4.6
Goods Movement	3.5
Med-/Heavy-Duty Hybridization and Aerodynamics	0.9
High Speed Rail	1.0
Total Abatement from Complementary Policies	43.3
Abatement from Capped Sectors Driven by the Price Signal	31.3[76]

The abatement curve driven by the price signal corresponding to Scenario 2 is shown in Figure V-7. As shown in Figure V-7, 31 $MMTCO_2e$ of abatement corresponds to an allowance price of approximately $40/metric ton. Thus, all measures less than $40/metric ton are expected to be implemented. The increased price results from the limited offset potential in this scenario. In this scenario, all of the 15.1 $MMTCO_2e$ of available offsets potential are used to meet the cap, and there is an increased use of energy efficiency and demand-side reductions.

[76] Numbers may not add due to rounding.

Figure V-7: Abatement Curve for Scenario 2 in 2020



The results from this scenario show the importance of the offset program to mitigate prices. This curve can be compared to Scenario 1, which uses the same assumptions for the complementary measures but assumed ample offset supply. In comparing the curves, decreasing the offset potential by half increases the allowance price from $20/metric ton to $40/metric ton.

3. Results of Scenario 3: Partial Abatement Potential from Complementary Policies, Full Availability of Offsets

In this scenario, staff explores the complementary policies. Table V-5 identifies the reductions assumed in this scenario from complementary measures that will reduce emissions under the cap. Staff assumed 15 $MMTCO_2e$ less than the 43.3 $MMTCO_2e$ GHG reductions originally estimated from the complementary policies in Scenarios 1 and 2. In Scenario 3, 46.3 $MMTCO_2e$ of additional reductions are needed from the capped sectors based on the price signal.

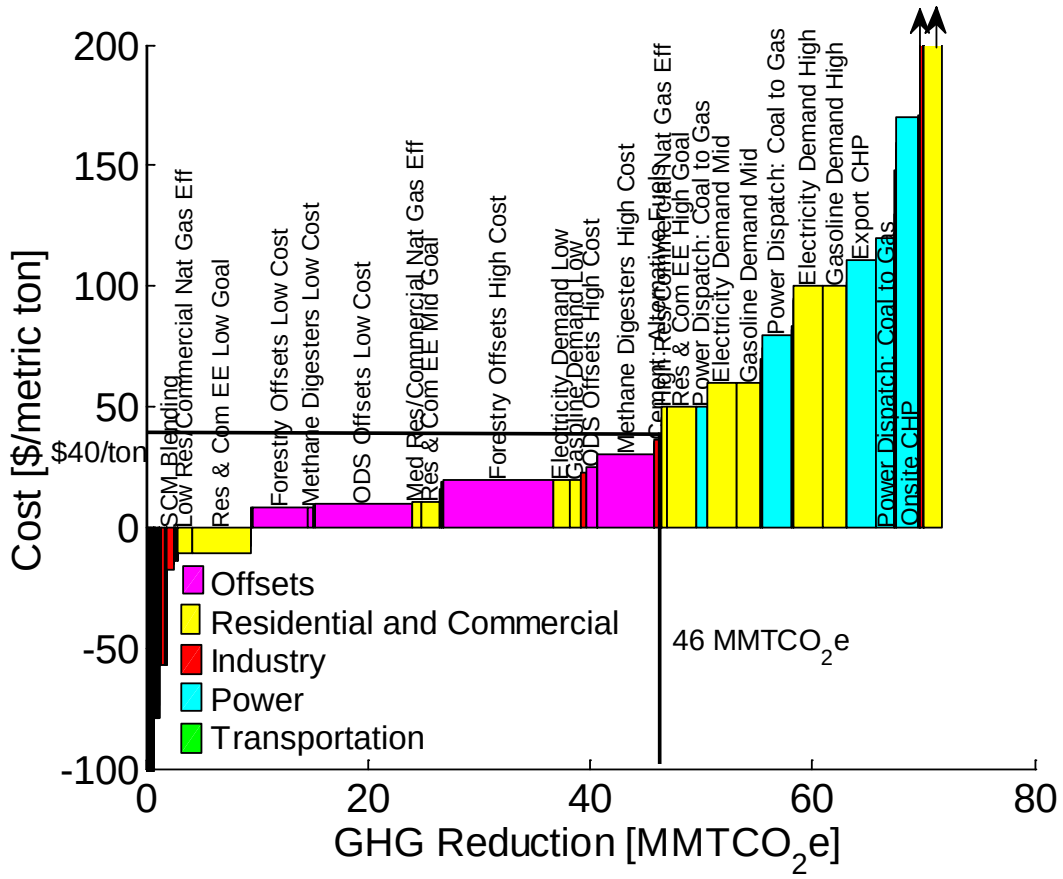
Table V-5: Scenario 3 Abatement Estimates (in $MMTCO_2e$) in 2020

Abatement Needed **(Table V-1)**	74.6
Abatement From Complementary Policies	28.3
Abatement from Capped Sectors Driven by the Price Signal	46.3[77]

The abatement curve driven by the price signal corresponding to Scenario 3 is shown in Figure V-8. As shown in the figure, 46 $MMTCO_2e$ of abatement corresponds to an allowance price of approximately $40/metric ton. Thus, all measures less than $40/metric ton are expected to be implemented. The medium-level allowance price spurs some demand-side changes from consumers and brings additional offsets online. In this curve, all of the approximately 30 $MMTCO_2e$ of available offsets were used to meet the cap. In the range of $10/metric ton to $30/metric ton, the curve has a low slope, meaning that the marginal allowance price is slowly increasing. Thus, from the price of $10 to $30/metric ton, capped sectors can increase abatement with relatively little price fluctuation.

[77] Numbers may not add due to rounding.

Figure V-8: Abatement Curve for Scenario 3 in 2020



4. Scenario 4: Partial Abatement from Complementary policies, Partial Availability of Offsets

In Scenario 4, staff explores a limited abatement potential from the complementary policies and limited availability of offsets. As shown in Table V-6, 46 $MMTCO_2e$ of allowance price-driven abatements are needed from capped sectors.

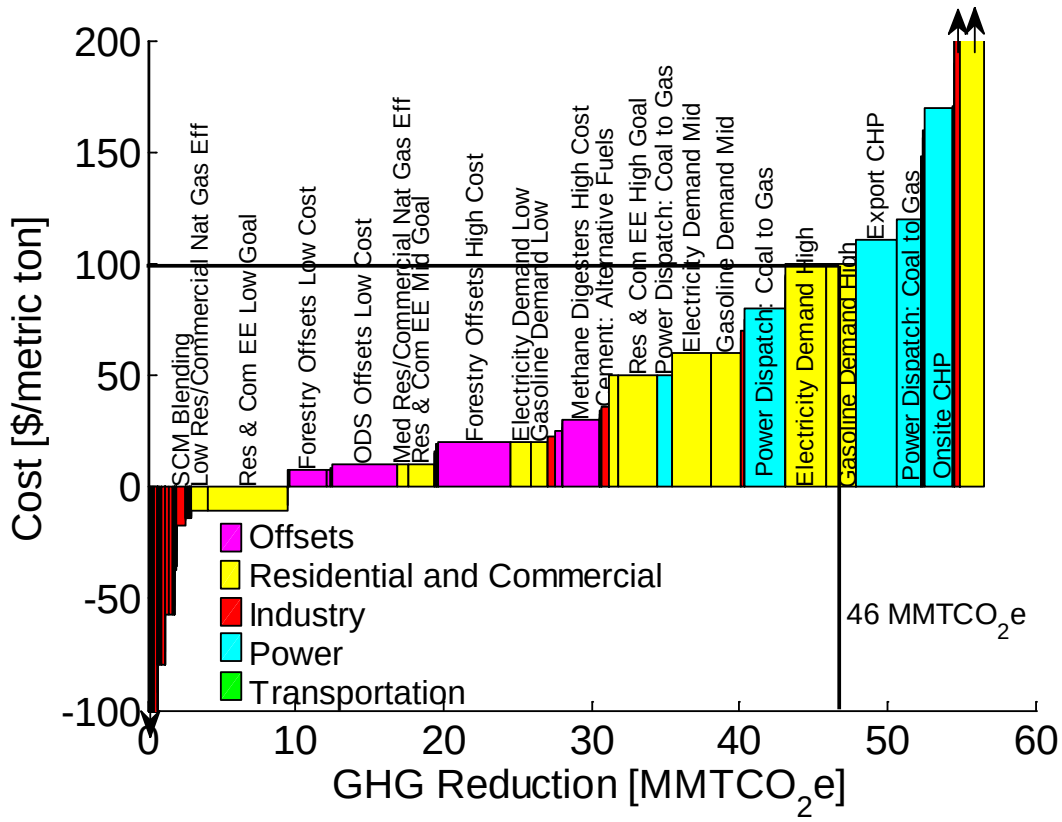
Table V-6: Scenario 4 Abatement Estimates (in $MMTCO_2e$) in 2020

Abatement Needed **(Table V-1)**	74.6
Abatement From Complementary Policies	28.3
Abatement from Capped Sectors Driven by the Price Signal	46.3[78]

[78] Numbers may not add due to rounding.

The abatement curve corresponding to Scenario 4 is shown in Figure V-9. As shown, 46 $MMTCO_2e$ of abatement corresponds to an allowance price of $100/metric ton. Thus, all measures less than $100/metric ton are expected to be implemented. To achieve the 46 $MMTCO_2e$ with limited offsets, high prices were necessary to achieve the abatement from the capped sectors. Many of the reductions were from consumers. A large amount of energy efficiency and demand-side reductions occurred to meet the necessary reductions. In addition, the significant power dispatch switching occurred. In this scenario, all of the 15 $MMTCO_2e$ of available offsets were used.

Figure V-9: Abatement Curve for Scenario 4 in 2020



The results from this scenario show the importance of complementary policies and offsets supply to obtaining the necessary GHG reductions to achieve the cap. The results of Scenario 2 (full complementary policies, partial offsets) and Scenario 3 (partial complementary policies, full offsets) show only modest price increases from Scenario 1 (full complementary policies, full offsets). However, in Scenario 4, large price increases occur due to the limited availability of reductions from complementary policies and offsets. This price increase is caused by requiring many of the reductions to come from consumers.

Even though the results of this scenario show an allowance price of $100/metric ton, achievement of this price is unlikely because of the cost containment

mechanism that makes allowances available at lower prices. For more information on cost containment, see Chapter II: General Summary of the Proposed Regulation.

5. Conclusion

The proposed cap-and-trade program provides a flexible market-based tool that can achieve the AB 32 goals under a number of different scenarios. Scenario 1, in which the complementary measures achieve expected reductions and there is a full supply of offsets, requires an allowance price of $20/metric ton to achieve the necessary reductions. Scenario 1 is considered to be the most likely scenario.

Scenario 2 shows the importance of offsets in mitigating high allowance price. In this case, the complementary measures reach their full potential but the offset potential is reduced by half, and the allowance price increases to $40/metric ton due to the reduced availability of offsets.

Scenario 3 shows the flexibility of the cap-and-trade program to meet the AB 32 goals. By reducing the abatement potential from the complementary measures, but assuming a full availability of offsets, this scenario illustrates that abatement can be met through additional purchase of offsets and additional consumer and industry responses. In Scenario 3, the allowance price is $40/metric ton.

Scenario 4 shows the worst case and least likely scenario, in which neither offsets nor complementary measures reach their full potential. In this case, allowance price increases to $100/metric ton, and the program relies on consumers and industry to make the necessary reductions. Nonetheless, demand response and a high level of energy efficiency can provide sufficient emissions reductions to meet the cap. It should be noted that it is highly unlikely that allowance prices will reach $100/metric ton because regulation includes a number of cost-containment mechanisms.

VI ENVIRONMENTAL IMPACTS OF THE PROPOSED REGULATION

This Chapter summarizes the environmental impacts analysis and identifies potential environmental benefits associated with the proposed cap-and-trade program. Complementing other AB 32 Scoping Plan measures, the proposed cap-and-trade program provides market-based incentives to reduce GHG emissions in California consistent with the requirements of AB 32, including HSC §38562, §38570, and §38571. The analysis shows that the proposed cap-and-trade program will reduce GHG emissions throughout the state. It will provide facility owners more flexibility to determine the most cost-effective way to meet emission reduction targets than a command-and-control approach with prescribed control measures would allow.

The California Environmental Quality Act (CEQA) and ARB policy require an analysis to determine the potential environmental impacts of the proposed regulation. ARB's program for adopting regulations has been designated as a Certified State Regulatory Program by the Secretary of Resources pursuant to Public Resources Code (PRC) section 21080.5. Consequently, the analysis required under CEQA may be included in the Initial Statement of Reasons (ISOR or Staff Report) rather than adhering to the format described in CEQA for an Initial Study, a Negative Declaration, or an Environmental Impact Report.

ARB has prepared a programmatic Functionally Equivalent Document (FED) that addresses direct and indirect impacts and identifies feasible mitigation that could be used to reduce significant adverse effects on the environment. This document is included in Appendix O, and is summarized in this Chapter. Staff's environmental analysis anticipates a variety of compliance responses that covered entities may use to comply with the program, such as increased energy efficiency, decarbonization of fuel, process changes, as well as surrender of allowances. These responses will not only help reduce GHG emissions, but are also anticipated to provide multiple environmental co-benefits that can provide relief from the demand on the State's already stressed water, air and mineral resources. A summary of the analysis of the potential environmental impacts and mitigation associated with covered entities' compliance responses follows. The Board is also considering approval of four offset protocols. Each of these protocols is analyzed individually. The FED also includes a cumulative impact section that examines impacts associated with the cap-and-trade program, in its entirety (including the protocols), and the remaining suite of Scoping Plan measures. Staff will respond to all significant environmental issues raised by the public during the 45-day public review period or at the Board hearing in the Final Statement of Reasons for the proposed regulation.

A. Summary of Environmental Analysis

1. Analyses of Emissions Reductions

The environmental analysis of the proposed cap-and-trade program focuses on the activities that those covered by the program could take to reduce GHG emissions. The purpose of the cap-and-trade program is to reduce GHG emissions from sources subject to the regulation (i.e., covered entities). This is achieved by applying an aggregate total GHG emissions cap on covered entities that declines over time. The program provides a trading mechanism for compliance instruments that offers covered entities flexibility in how they comply with the regulation. Reductions in GHG emissions would result from the use of cleaner fuels and from investment in onsite efficiency and process improvements. Additional reductions would come from offset projects that reduce emissions not directly covered by the cap-and-trade program or increase sequestration of carbon. Covered entities must turn in “allowances” and offset credits equal to their emissions. They may choose to lower their emissions to reduce their compliance obligation or procure allowances and/or offsets. The environmental analysis is based on the variety of covered entities’ expected compliance responses and their respective impacts on the physical environment.

Total GHG emissions under baseline conditions in 2020 are estimated to be 507 $MMTCO_2e$. GHG emissions from the capped sectors are approximately 409 $MMTCO_2e$ of the baseline. Reductions needed to meet the cap of 334 $MMTCO_2e$ will come in part through complementary measures from the Scoping Plan. After reductions from those measures, the cap-and-trade regulation is estimated to reduce at least 18 $MMTCO_2e$, representing a 4 percent reduction from capped sector emissions. The reductions needed from cap-and-trade could be greater if adopted measures fail to achieve expected reductions, if energy efficiency programs are not funded at adequate levels or are less effective than projected, or if the economy grows faster than expected.

The cap-and-trade program is made up of many elements, must serve a large number of important objectives at the same time, and relies on the cumulative actions of a large number of participants operating in a complex market system. Accordingly, unanticipated effects and results could occur over the life of the program. ARB therefore is committed to using an adaptive management process to review and revise policies, protocols, and procedures as more information becomes available. This approach is discussed further in Appendix O.

2. Impacted Communities

ARB is committed to making the achievement of fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations, and policies. This commitment is an integral part of development and implementation of the proposed cap-and-trade program. As such, staff evaluated the proposed regulation to determine if it disproportionately affects local communities, or

interferes with the attainment and maintenance of ambient air quality standards. As part of the Co-Pollutant Emissions Assessment of the cap-and-trade regulation, ARB staff evaluated the potential emissions impact of the regulation on four cumulatively impacted communities in California. The choice of communities captures the diverse nature of California's air quality problems, as well as a range of sources that would be subject to the regulation. The analysis found that the cap-and-trade program is unlikely to significantly impact on emissions in the four communities and is more likely to have a positive effect. The analysis is summarized in Chapter VII and Appendix P.

Also included in the environmental analysis is an examination of potential impacts to aesthetic resources, biological resources, cultural resources, energy demand, geological resources, land use, water quality and demand, among others. Possible approaches to mitigate or minimize these effects are included in the analysis.

B. Cap-and-Trade Program – Project Alternatives

Staff evaluated a suite of alternatives to the proposed regulation as required by the CEQA guidelines. A range of alternatives analyzed in an environmental document is governed by the "rule of reason," requiring evaluation of those alternatives "necessary to permit a reasoned choice." (CEQA Guidelines section 15126(f)). The alternatives include the required "No Project Alternative", as well as program design options, a regulation-only approach, a carbon fee, and others.

C. Statewide GHG Benefits from Cap-and-Trade

This section discusses staff's evaluation of the statewide GHG emission reduction estimates from the proposed cap-and-trade program.

<u>GHG Emission Reduction Estimates</u>

The amount of GHG emissions that would have to be reduced by the cap-and-trade program is a function of the 2020 business-as-usual (BAU) and the effectiveness of other Scoping Plan measures. Since adoption of the Scoping Plan, ARB has updated its emission inventories, revising the statewide 2020 emissions estimate to 507 $MMTCO_2e$. Scoping Plan measures that are adopted or would be adopted in the reasonably foreseeable future would achieve approximately 62 $MMTCO_2e$ of reductions. The cap-and-trade program must reduce at least 18 $MMTCO_2e$ to reach the 2020 target. The needed reductions could be greater if adopted measures fail to achieve expected reductions, if energy efficiency programs are not funded at adequate levels or are less effective than projected, or if the economy grows faster than expected. This is considered a beneficial impact.

D. Air Quality Impacts

This section discusses the potential air quality impacts related to the cap-and-trade program. Below are descriptions of the pollutants of interest in this chapter.

- Criteria Air Pollutants: Criteria air pollutants are determined to be hazardous to human health and are regulated under U.S. EPA's National Ambient Air Quality Standards. The 1970 amendments to the Clean Air Act require U.S. EPA to describe the health and welfare impacts of a pollutant as the "criteria" for inclusion in the regulatory regime. Both the California and federal governments have adopted health-based standards for the criteria pollutants that include ozone, particulate matter (10 microns or less in diameter, PM_{10} and 2.5 micron or less in diameter, $PM_{2.5}$), carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2).

- Toxic Air Contaminants: Toxic air contaminants (TAC or toxics) are those pollutants which may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health even at very low concentrations.

ARB evaluated the potential statewide and localized emission impacts resulting from the changes in criteria pollutant and toxic air contaminant emissions that accompany implementing the proposed cap-and-trade program. The localized emission assessment is presented in Chapter VII and Appendix P: Co-Pollutant Emissions Assessment, and indicates that the proposed cap-and-trade program is expected to provide an emissions benefit by reducing emissions of criteria and toxic air pollutants. Because GHG emissions are largely the result of combustion, the declining cap will result in reduced combustion and related air pollution emissions. The estimated statewide emission reductions of criteria pollutants are shown in Table VI-1 below.

Table VII-1: Potential Statewide Reductions from the Proposed Cap-and-Trade Regulation in 2020*

(TPD)

ROG	CO	NO_x	$PM_{2.5}$
22.4	210.4	50.8	3.4

*Assumes implementation of adopted and foreseeable Scoping Plan measures in 2020 and that combustion emissions from capped sources decrease by 4 percent to meet the 2020 cap. The 4 percent reduction is estimated as follows. Total GHG emissions under baseline conditions in 2020 are estimated to be 507 $MMTCO_2e$. GHG emissions from the capped sectors are approximately 409 $MMTCO_2e$ of the baseline. Reductions needed to meet the cap of 334 $MMTCO_2e$ will come in part through complementary measures from the Scoping Plan. After reductions from those measures, the cap-and-trade regulation is estimated to reduce at least 18 $MMTCO_2e$, representing a 4 percent reduction from capped sector emissions.

An advantage of the cap-and-trade approach to achieving GHG emission reduction goals is that it gives facility owners more flexibility to determine the most cost-effective way to meet emission reduction targets than a command and control approach with prescribed control measures would allow. This flexibility to covered entities can help reduce the overall cost of meeting California's GHG emission reduction goals. This flexibility also means that there are no facility-specific emission reduction requirements for GHG emitting facilities. Because of this, some commenters have expressed concern that the cap-and-trade program could lead to disproportionate emission impacts. ARB's analysis, as detailed in the Co-Pollutant Emissions Assessment in Chapter VII and Appendix P: Co-Pollutant Emissions Assessment indicates that is unlikely. California's comprehensive control program will continue to reduce emissions and improve air quality. The cap-and-trade program is likely to provide small additional criteria pollutant reductions statewide. Although ARB's analysis indicates that localized impacts are unlikely, there is a chance that small increases that would be considered potentially significant under CEQA could occur. ARB proposes an adaptive management approach to address this potential impact.

Short-term increases in construction and operational emissions resulting from covered entity compliance responses are identified as significant and unavoidable in the FED, but could be evaluated by agencies with local permitting authority at the time specific projects are proposed and potentially mitigated to less than significant.

The proposed livestock offset protocol could result in a significant unavoidable impact resulting from the generation of odors that could affect sensitive receptors. Other than this potential odor impact, offset protocols would not be expected to result in potentially significant project-level impacts, or contribute to a cumulative, adverse air quality impact. New offset projects may be subject to local permitting processes and, if not exempt, environmental review under CEQA.

E. Other Environmental Impacts

1. Overview

The environmental analysis included in this Staff Report as Appendix O is a Functional Equivalent Document (FED), and complies with CEQA. It presents a programmatic evaluation that describes potential environmental impacts that are reasonably foreseeable, and does not speculate as to all of the possible compliance responses that could occur at the site- or project-specific levels. The compliance responses evaluated are representative of an entire business sector.

Although compliance with existing federal and state statutes and regulations, and local ordinances and permitting requirements may be adequate to address potential adverse project-specific environmental impacts, agencies with local permitting authority would be responsible for determining project-level impacts and mitigation. Because the programmatic analysis does not allow description of the details of project-specific mitigation, the degree of mitigation ultimately

implemented to reduce the potentially significant impacts is inherently uncertain. Consequently, the FED takes the conservative approach in its post-mitigation significance conclusions (i.e., tending to overstate the risk that feasible mitigation may not be sufficient or may not be implemented by other parties) and discloses, for CEQA compliance purposes, that potentially significant environmental impacts may be unavoidable. It is expected that many impacts resulting from covered entity compliance responses and offset projects would be avoided or mitigated to a less-than-significant level, and many potentially significant impacts would be addressed during project-specific environmental review processes.

2. Impact Analysis

This section evaluates potential impacts that could result from implementation of the covered entity compliance responses. The reasonably foreseeable covered entity compliance responses are some combination of (1) Upgrade Equipment, (2) Decarbonization, (3) Implement Process Changes, and (4) Surrender Compliance Instruments, and implementation of offset projects under the Compliance Offset Protocol for U.S. Ozone Depleting Substances Projects, Compliance Offset Protocol for Livestock Manure (Digesters) Projects, Compliance Offset Protocol for Urban Forest Projects, and the Compliance Offset Protocol for U.S. Forest Projects.

a. Aesthetics

Implementation of the cap-and-trade program would not result in actions that would pose a significant adverse impact to aesthetic, scenic, or visual resources.

The compliance responses implemented by covered entities largely consist of onsite improvements to existing facilities located in industrial settings, and as such would not change the character of the project sites.

The ODS offset protocol would not introduce activities that would disrupt aesthetic or visual settings. The Livestock offset protocol would include the construction of digesters in agricultural settings. Digesters are consistent with agricultural uses and would not represent an adverse change to the visual character of the vicinity. The Urban Forest offset protocol would improve the quality of the urban visual environment and would be considered aesthetically beneficial. The Forest offset protocol would not increase the amount of forest activities, but could shift activities to projects that increase carbon sequestration. This shift could change the visual character of offset project sites over time, but would not pose an adverse visual impact. Managing forests to increase cover and remove dead and diseased trees may be considered a visually beneficial effect.

b. Agriculture and Forest Resources

Implementation of the cap-and-trade program would not result in actions that would pose a significant adverse impact to agriculture and forest resources.

The compliance responses implemented by covered entities largely consist of onsite improvements to existing facilities located in industrial settings, and as such would not be expected to impact agriculture or forest resources.

The ODS offset protocol would not include activities that impact agriculture or forest resources. The Livestock offset protocol would include the construction of digesters in agricultural settings. Digesters are consistent with agricultural uses and would not represent an adverse change to agriculture or forest resources. The Urban Forest offset protocol would not impact agriculture or forest resources. The Forest offset protocol would not increase the amount of forest activities, but could shift activities to projects that increase carbon sequestration. Managing forests to increase cover and remove dead and diseased trees may be considered a beneficial impact to forests. The Forest offset protocol does not include actions that would encourage the conversion of agricultural land to forest.

c. Biological Resources

Implementation of the cap-and-trade program has the potential to adversely impact biological resources.

The compliance responses evaluated in the FED consist of onsite improvements to existing facilities located in industrial settings. Construction, grading and trenching have the potential to adversely impact any protected biological resources that might exist at those locations. Although recognized mitigation measures exist to reduce this potential impact, the authority to require mitigation lies with local permitting agencies and not ARB. Consequently, this potentially significant impact may be unavoidable.

The ODS offset protocol would not include activities that potentially impact biological resources. The Livestock offset protocol would include the construction of digesters at or adjacent to existing livestock operations where natural habitats are expected to be absent or limited. As such, the livestock offset protocol would result in less than significant impacts to biological resources. The Urban Forest offset protocol recognizes tree improvement projects in urban settings, and as such would not be expected to significantly affect biological resources. The Forest offset protocol would not increase total forest activities, but could shift activities to projects that increase carbon sequestration. This shift could change the habitat of offset project sites over time. Consequently, this potentially significant impact may be unavoidable. ARB will implement adaptive management to monitor this impact.

d. Cultural Resources

Implementation of the cap-and-trade program has the potential to adversely impact cultural resources.

The compliance responses evaluated in the FED consist of onsite improvements to existing facilities located in industrial settings. Construction, grading and

trenching have the potential to adversely impact any cultural resources that might exist at those locations. Although recognized mitigation measures exist to reduce this potential impact, the authority to require mitigation lies with local permitting agencies and not ARB. Consequently, this potentially significant impact may be unavoidable.

The ODS offset protocol would not include activities that potentially impact cultural resources. The Livestock offset protocol would include the construction of digesters at or adjacent to existing livestock operations where cultural or historic features could exist. Similarly, the Urban Forest offset protocol includes projects in urban settings where cultural and historic resources could exist. Although recognized mitigation measures exist to reduce these potential impacts, the authority to require mitigation lies with local permitting agencies and not ARB. Consequently, these potential impacts are identified as significant and unavoidable. The Forest offset protocol could change the type of forest projects that are undertaken, but would not alter the overall level of forest activities, and as such would not increase potential impacts to cultural resources. This potential impact would be less than significant.

e. Energy Demand

Implementation of the cap-and-trade program would reduce energy demand, representing a beneficial effect.

The covered entity compliance responses evaluated in the FED include upgrading equipment, switching to lower-intensity carbon fuels, and implementing maintenance and process changes. These actions will reduce overall energy demand and are considered beneficial effects.

Projects implemented under the compliance offset protocols will not increase energy demand, and as such pose no impact or less than significant impacts to energy demand.

f. Geology, Soils, and Mineral Resources

Implementation of the cap-and-trade program has the potential to adversely impact geology, soils, and mineral resources.

The covered entity compliance responses evaluated in the FED include onsite improvements to existing facilities located in industrial settings. Construction, grading and trenching have the potential to result in adverse soil erosion, dust generation, and sedimentation of local waterways. Although recognized mitigation measures exist to reduce this potential impact, the authority to require mitigation lies with local permitting agencies and not with ARB. Consequently, this potentially significant impact may be unavoidable.

The ODS offset protocol would have no impacts on geology, soils and mineral resources. The Livestock offset protocol would include the construction of digesters that would be subject to regulations that are considered sufficient to

mitigate potential impacts to geology, soils and mineral resources to a less than significant level. The Urban forest offset protocol would result in only minor soils disturbance and would not be expected to adversely impact geology, soils or mineral resources. This impact would be less than significant. The Forest offset protocol would not increase total forest activities, but could shift activities to projects that increase carbon sequestration. Because the overall level of forest activities would not change, this impact would be less than significant.

g. Hazardous Materials

Implementation of the cap-and-trade program would not result in actions that would result in potentially significant adverse impacts related to hazards or hazardous materials.

The covered entity compliance responses evaluated in the FED include onsite improvements to existing facilities located in industrial settings. The use of hazardous materials is common practice in industrial settings. Implementation of compliance responses could include the use of hazardous materials, but this would be considered simply an extension of business as usual for most covered entities, mitigated by existing practices and regulations, and thus considered less than significant.

Offset projects implemented under the proposed offset protocols may result in the use or transport of hazardous materials that require special handling and disposal. All projects would be required to comply with established local, state, and federal laws pertaining to the use, storage, and transportation of these materials. Assuming compliance with applicable laws and regulations, the impacts would be less than significant.

h. Hydrology and Water Quality

Implementation of the cap-and-trade program has the potential to adversely impact hydrology and water quality.

The covered entity compliance responses evaluated in the FED include onsite improvements to existing facilities located in industrial settings. Construction, grading and trenching have the potential to result in adverse soil erosion resulting in sedimentation and degradation of local waterways. Although recognized mitigation measures exist to reduce this potential impact, the authority to require mitigation lies with local permitting agencies and not with ARB. Consequently, this potentially significant impact may be unavoidable.

The ODS offset protocol would have no adverse impacts on hydrology and water quality. The Livestock offset protocol would include the construction of digesters that would be subject to regulations which are considered sufficient to mitigate potential impacts to hydrology and water quality to a less than significant level. The Urban forest offset protocol would result in only minor soil disturbance resulting in less than significant impacts to hydrology or water quality. The Forest offset protocol would not increase total forest activities, but could shift

activities to projects that increase carbon sequestration. Because the overall level of forest activities would not change, the potential to adversely impact hydrology and water quality would not change. This impact would be less than significant..

i. Land Use and Planning

Implementation of the cap-and-trade program has the potential to result in a significant adverse impact to land use and planning.

The covered entity compliance responses evaluated in the FED include onsite improvements to existing facilities located in industrial settings, and as such would be consistent with the existing land use and would pose a less than significant land use and planning impact.

The ODS offset protocol would use existing facilities, representing a less than significant impact to land use and planning. The Livestock offset protocol would allow the construction of digesters in agricultural settings. Digesters are a consistent use in agricultural areas. As such, their construction would not conflict with existing land use plans, and thus would be a less than significant impact.

Projects implemented under the Urban Forest offset protocol would not conflict with land use plans, resulting in a less than significant impact.

The Forest offset protocol includes avoided conversion projects that could conflict with local land use plans that envision development or other uses of forested areas. Consequently, this potentially significant impact may be an unavoidable conflict with local land use plans.

j. Noise

Implementation of the cap-and-trade program has the potential to result in a significant adverse noise impact.

The covered entity compliance responses evaluated in the FED include upgrading equipment, switching to lower intensity carbon fuels, and implementing maintenance and process changes. Construction has the potential to introduce short-term noise levels that would exceed acceptable ambient levels. Because of the short-term nature of construction, and the general compatibility of loud sounds with industrial settings, this impact would be less than significant. Recognized measures are standard business practice to minimize construction noise.

The ODS offset protocol would not result in significant adverse noise impacts. The Livestock offset protocol would allow the construction of digesters in agricultural settings. Construction of digesters could adversely impact sensitive receptors and is considered a significant and unavoidable impact. Although recognized mitigation measures exist to reduce this potential impact, the

authority to require mitigation lies with local permitting agencies and not ARB. Consequently, this potentially significant impact may be unavoidable.

Projects implemented under the Urban Forest offset protocol would not produce unacceptable noise levels and potential noise impacts are considered a less than significant impact.

Projects implemented under the Forest offset protocol would occur in forested areas. Forest projects would produce elevated noise levels that exceed accepted ambient levels. However, adoption of the Forest offset protocol would not alter the extent of forest activities, but would simply shift some activities to projects that sequester carbon. Because the level of overall forest activities would not change, the consequential noise impacts would not change. Thus, this impact is considered less than significant.

k. Population and Housing

The cap-and-trade program, including the proposed compliance offset protocols and associated offset projects would not be expected to result in significant adverse impacts to employment, population, or housing. All impacts to population, employment, and housing would be less than significant.

l. Public Services

The proposed covered entity compliance responses, compliance offset protocols and associated offset projects would not be expected to result in adverse impacts to public services. All potential impacts to public services would be less than significant.

The covered entity compliance responses evaluated in the FED include upgrading equipment, switching to lower-intensity carbon fuels, and implementing maintenance and process changes. These projects would not increase the level of public services beyond that already provided to existing facilities.

The ODS offset protocol, the Livestock offset protocol, and the Urban Forest offset protocol and associated projects would not result in a need for an increased level of public services beyond that already provided to existing facilities. The Forest offset protocol would not alter the extent of forest activities, but would shift some activities to projects that sequester carbon. Because the level of overall forest activities would not change, the consequential need for public services would not change. Thus, this impact would be less than significant.

m. Recreation

The proposed covered entity compliance responses, compliance offset protocols and associated offset projects would not be expected to result in adverse impacts to public services. All potential impacts to recreation would be less than significant.

The covered entity compliance responses evaluated in the FED include upgrading equipment, switching to lower intensity carbon fuels, and implementing maintenance and process changes. These actions would have a less than significant impact on recreation resources.

The ODS offset protocol, the Livestock offset protocol, and the Urban Forest offset protocol and associated projects would result in a less than significant impact on recreation resources.

Forest management activities could disrupt opportunities for forest recreation, but such disruptions exist under current conditions. Offset projects developed under the proposed Forest offset protocol would include the construction of roads, temporary closures for tree installation and periodic increases in truck or construction equipment traffic that could disrupt recreational activities, but forest projects developed under the Forest offset protocol would occur on land that was historically forested or currently forested, and consequently, the overall impact to recreational resources would be less than significant.

n. Transportation and Traffic

Implementation of covered entity compliance responses is not expected to cause significant adverse impacts to transportation or traffic. If a facility expands or requires construction to take place, increases in construction traffic would be temporary and considered less than significant. Construction traffic impacts can be mitigated through ingress and egress controls, traffic controls, and reduced speed zones to ensure safety. Activities undertaken to develop offset projects would be expected to vary according to the type of offset project. Construction of livestock digesters could require the operation of heavy equipment on rural roads, resulting in potentially significant safety concerns that may be unavoidable. Transportation and traffic impacts resulting from other offset protocol projects would be less than significant.

o. Utility Service Systems

The cap-and-trade program, including the proposed compliance offset protocols and associated offset projects would not significantly increase or decrease the need for utilities and associated services, and as such would be a less than significant impact.

The covered entity compliance responses evaluated in the FED include upgrading equipment, switching to lower-intensity carbon fuels, and implementing maintenance and process changes. These projects would not increase the level of utilities beyond that already provided to existing facilities. Fuel switching could require provision of new services. The availability and extension of utilities is subject to approval of the local utility provider, and thus mitigated to less than significant.

The ODS offset protocol, the Livestock offset protocol, and the Urban Forest offset protocol and associated projects would not result in a need for an

increased level of utilities beyond that already provided to existing facilities. Construction of new facilities would require the extension of utilities and services. The availability and extension of utilities is subject to approval of the local utility provider, and thus mitigated to less than significant.

The Forest offset protocol would not alter the extent of forest activities, but would shift some activities to projects that sequester carbon. Because the level of overall forest activities would not change, the consequential need for utility service systems associated with those activities would not change. Thus, this impact is considered less than significant.

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VII CO-POLLUTANT EMISSIONS ASSESSMENT

A. Introduction

AB 32 requires ARB, to the extent feasible, and in furtherance of achieving the statewide greenhouse gas (GHG) emissions limits, to: consider the potential for direct, indirect, and cumulative emissions impacts, including any localized impacts; prevent increases in criteria and toxic air pollutants; and maximize additional environmental and economic benefits. Although the cap-and-trade regulation is specifically aimed at reducing GHGs, technology improvements and enhanced energy efficiency can also reduce criteria and toxic air pollutants (co-pollutants) associated with GHG emissions as a co-benefit. Reductions in co-pollutants will have positive health benefits and assist in meeting health-based air quality standards. The AB 32 Scoping Plan estimated statewide co-pollutant reductions from the combination of measures in the Plan. This assessment focuses on the potential for direct, indirect, and cumulative emissions impacts of the proposed cap-and-trade regulation. It is designed to evaluate the potential co-pollutant benefits from the rule, scenarios which might lead to potential increases in co-pollutants, and cumulative emissions impacts on communities already adversely impacted by air pollution.

The assessment focuses on the potential criteria and toxic pollutant emissions impacts from the industrial and electricity generation sources covered by the program. The assessment does not include criteria pollutant and toxic emissions reductions that the cap-and-trade program is expected to provide from transportation fuels and commercial and residential gas use in addition to those likely to occur at industrial and electricity generation facilities.

Designing the emissions assessment proved to be challenging, given the nature and complexity of a cap-and-trade rule. The inherent flexibility provided by cap-and-trade makes it difficult to predict the specific changes that may result at an individual facility, and in turn, how those changes may impact cumulative emissions within a particular community. Because of the market-based design of the program, compliance decisions are expected to reflect the relative cost of compliance options. However, other business and operational considerations, such as overall economic growth and demand for their products, will also influence the choices made by regulated entities. For this reason, this assessment uses a case study approach to look at potential emissions impacts at a community level. Although staff's analysis indicates that emissions increases as a result of the cap-and-trade program are unlikely, the case studies are designed as a hypothetical bounding exercise to look at both the best-case and worst-case emissions scenarios, to characterize the bounds of potential outcomes and cumulative impacts.

Any evaluation of potential impacts must consider the existing programs that are already in place to address criteria and toxic air pollutants. California’s air quality program leads the nation in terms of stringency of required emission controls.

This includes local air district permitting programs for stationary sources; ARB's comprehensive control programs for mobile sources, goods movement, and diesel risk reduction; and the air toxics identification and risk assessment process. The cap-and-trade regulation will not affect the stringency of these programs. Rather, sources regulated by the cap-and-trade program must continue to operate within these existing requirements and as such the cap-and-trade program provides an additional mechanism to ensure continued air quality improvement.

California's air pollution control programs for criteria and toxic pollutants will continue to significantly reduce emissions and health risk into the future. Reductions in co-pollutants that occur as a result of AB 32 complement the benefits of California's existing air quality programs. Reducing emissions from combustion sources is at the core of California's program to meet air quality standards for ozone and fine particles and is also central to the AB 32 Scoping Plan for meeting the 2020 greenhouse gas emissions target. California's climate and criteria pollutant programs are complementary, and the AB 32 regulations ARB is adopting will provide benefits that will be incorporated into future air quality plans for ozone and fine particles.

The potential for cumulative impacts in communities already adversely impacted by air pollution is included as a specific consideration in the statute, but AB 32 does not define "cumulative emissions impacts" or "communities already impacted by air pollution." Most urban areas in California are impacted by air pollution on a regional basis, and as a result, all have air quality programs and plans in place that are designed to provide for compliance with air quality standards. Transportation and industrial air pollution sources are also concentrated in urban areas, which can contribute to cumulative emissions impacts on a localized level. Rural areas downwind of urban centers also experience poor air quality due to the transport of air pollution, and are adversely impacted by air pollution. Each of these situations is considered in this assessment, to the extent feasible, with special attention to the potential for localized impacts in communities experiencing the greatest air pollution impacts.

The emissions assessment is designed to meet statutory requirements to evaluate the potential emissions impacts of the proposed cap-and-trade rule and complements the Health Impact Assessment (HIA) being conducted by the California Department of Public Health (CDPH). To supplement ARB's emissions assessment, the HIA evaluates potential health impacts other than air pollution effects and explores other issues such as health disparities among communities, and potential uses of revenue generated by the program to further improve public health in California. CDPH recently presented its work plan to the California Climate Action Team Public Health Work Group. Broader considerations related to community health status, air pollution exposures, and vulnerable populations are expected to be part of a public decision-making process on the use of revenues generated by the program. Taken together, the

ARB emissions assessment and the HIA provide information on the broad implementation of the cap-and-trade program.

This emissions assessment analyzes a range of potential compliance options for industrial and electricity generation sources in the cap-and-trade program. Most compliance approaches are expected to result in reductions in co-pollutants through increased efficiency and decreased combustion of fossil fuels. However, the regulation affords entities flexibility to choose the most cost-effective strategies to reduce emissions, so the potential for some compliance actions to result in increased co-pollutant emissions at some facilities cannot be entirely discounted. [79] For this reason, continued monitoring and review will be necessary to identify situations where increases in criteria pollutants and toxics might occur, and to allow the appropriate agencies to take the needed steps to address them. Many of the mechanisms are already in place to do so: stationary source control and permitting programs; toxics control and risk assessment requirements; and air monitoring for ozone, $PM_{2.5}$, and toxics.

Although staff believes that the potential for emissions increases attributable to the rule are very unlikely, ARB is committed to monitoring the implementation of the cap-and-trade regulation to identify and to address any situations where the program has caused an increase in criteria pollutant or toxic emissions. At least once each compliance period, ARB will use information collected through the mandatory reporting regulation, the cap-and-trade regulation, the industrial efficiency audit, and other sources of information to evaluate how individual facilities are complying with the regulation. The cap-and-trade program is another layer of review and opportunity for data gathering, decision-making, and agency and public vigilance to ensure any potential increases are identified and addressed.

B. Methods for Identifying Cumulatively Impacted Communities

In 2005, ARB sponsored a research project on an environmental justice screening method that combines indicators of current air pollution risk with social and health vulnerability. The final report for this work is entitled: *Air Pollution and Environmental Justice: Integrating Indicators of Cumulative Impact and Socio-*

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[79] Not all emissions increases at facilities covered by the cap-and-trade program will result from the program itself. The cap-and-trade program will place a new regulatory requirement and a new cost on GHG emissions from all covered facilities, so that the program provides an incentive to decrease (or to minimize increases in) GHG emissions and any related emissions of criteria or toxic emissions. While the program provides flexibility that could allow increased production due to economic growth, such increases would not be caused by the cap-and-trade program. Staff believes that only in very limited circumstances would a localized emissions increase be the actual result of the incentives created by the cap-and-trade program – e.g. shifting of production within a company from an inefficient facility with higher compliance costs to a more efficient facility that results in higher emissions at the more efficient facility.

Economic Vulnerability into Regulatory Decision-Making.[80] The final report was reviewed by the ARB Research Screening Committee.

This screening approach is a visual mapping tool and scoring procedure that examines cumulative impacts in neighborhoods. The screening approach incorporates a number of indicators of cumulative impact, reflecting research on air pollution, public health, and environmental justice. It incorporates indicators for three categories of potential impact and vulnerability: air pollution exposures and health risk, social and health vulnerability, and proximity between hazardous and sensitive land uses.

To identify communities for the case studies, ARB consulted with the Environmental Justice Advisory Committee (EJAC)[81] and other environmental stakeholders. These groups recommended that multiple communities be evaluated. Staff also considered availability of data, concentration of facilities that would be subject to cap-and-trade, and regional diversity. As a result, this assessment looks at four cumulatively impacted communities: Wilmington, Oildale/Bakersfield, Richmond, and Apple Valley/Oro Grande. Wilmington is identified as a cumulatively impacted community by the mapping tool described in *Air Pollution and Environmental Justice: Integrating Indicators of Cumulative Impact and Socio-Economic Vulnerability into Regulatory Decision-Making.* At this time, that mapping tool is available only for the Los Angeles region. ARB is in the process of evaluating how to expand the availability of this screening approach statewide. The other three communities are also identified as cumulatively impacted by a similar screening tool developed by ARB staff. While the ARB staff-developed tool does not include all the factors used in the research contract tool, if the latter were available statewide, it is expected that it would identify the same three communities as appropriate case studies.

In addition to requiring an assessment of the emissions impact, AB 32 requires the Board, where applicable and feasible, to direct investment toward the most disadvantaged communities. With respect to the cap-and-trade rule, this relates to the use of allowance value. This emissions assessment does not address the distribution of revenues, which is an implementation issue that deserves serious consideration and a broad-based public discussion. Identification of disadvantaged communities must be part of that discussion, including the

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[80] California Air Resources Board (2010): Air Pollution and Environmental Justice: Integrating Indicators of Cumulative Impact and Socio-Economic Vulnerability into Regulatory Decision-Making. http://www.arb.ca.gov/research/apr/past/04-308.pdf.

[81] Environmental Justice Advisory Committee (2008): Recommendations and Comments of the Environmental Justice Advisory Committee on the Implementation of the Global Warming Solutions Act. California Air Resources Board. http://www.arb.ca.gov/cc/ejac/proposedplan-ejaccommentsfinaldec10.pdf

possible use of the mapping tool described in *Air Pollution and Environmental Justice: Integrating Indicators of Cumulative Impact and Socio-Economic Vulnerability into Regulatory Decision-Making.*

C. Method for Assessing Cumulative Emissions Impact

This assessment addresses potential direct, indirect, and cumulative emissions impacts in the context of both emission and air pollution exposure trends. Some air pollutant emissions directly impact health, while others chemically react in the atmosphere to form pollutants of health concern. Ambient air monitoring data provide empirical information on recent trends in exposure to air pollution for both direct air pollutants and those formed in the atmosphere. The full assessment is described in Appendix P: Co-Pollutant Emissions Assessment.

Determining the potential impact of the cap-and-trade regulation on cumulative emissions requires looking at how various industrial sectors and individual facilities may move to comply with the program and then evaluating that response in the context of all emissions from all sources, first at the regional level, and then at the local level. This assessment takes a stepwise approach, with each step providing information used by ARB staff to conduct the subsequent analyses.

Step 1: The assessment considers California's existing regulatory programs governing smog-forming, fine particulate, and toxics emissions from stationary sources. Any specific changes made at a facility in response to the cap-and-trade regulation must be in compliance with this framework, which includes regulatory programs, permit systems, risk assessment, and more. Appendix P summarizes the major programs that will reduce emissions from cars, trucks, and other mobile sources between now and 2020. Appendix P also describes cumulative emissions today statewide, as well as recent air quality. Maps are presented that show how air quality varies within the State to provide context for the community case studies.

Step 2: The assessment examines future emissions in 2020. Appendix P describes the expected emissions reductions that will take place at the regional level as a result of the existing control programs and the contribution of the capped sources to the regional cumulative emissions totals in 2020. This shows that absent the cap-and-trade rule, capped industrial and electricity generation sources are forecast to be less than 10 percent of cumulative emissions from all sources. This percentage varies by region and pollutant.

Step 3: The assessment looks at the potential impact of the cap-and-trade regulation on co-pollutant emissions, starting with a general description of how the cap-and-trade industrial and electricity generation sectors may respond to rule requirements, how other greenhouse gas programs apply to the sectors, and how the existing co-pollutant control requirements examined in Step 1 overlay. This analysis appears in Appendix P: Co-Pollutant Emissions Assessment.

Step 4: The assessment examines four communities. Each community assessment includes descriptions of current air quality exposure and trends, existing co-pollutant emissions and control programs, and an evaluation of the potential for cumulative emissions impacts in 2020 from the implementation of the cap-and-trade program. The full assessments are presented in Appendix P: Co-Pollutant Emissions Assessment.

D. Community Case Studies

For major pollutants like ozone and $PM_{2.5}$, it is important to ensure that any actions taken through a cap-and-trade rule do not hinder progress toward attainment of air quality standards established to protect public health. With that as a framework, this section focuses on four communities and explores hypothetical situations that might result from the implementation of a cap-and-trade rule at a local level. A full description of the assessment appears in Appendix P: Co-Pollutant Emissions Assessment.

The choice of communities captures the diverse nature of California's air quality problems, as well as range of sources that would be subject to the cap-and-trade regulation. The boundary of each assessment area captures the most highly impacted communities. Because community level exposure reflects impacts from both local and regional emission sources, the size of each assessment area was selected to encompass a representative sampling of cap-and-trade sources which could potentially impact the local community. The size also represents a balance between reflecting broader regional-scale impacts versus smaller facility-specific impacts. The four communities are:

- Wilmington and Richmond: These two cities are part of larger metropolitan areas in Southern and Northern California. They are located among a nexus of major transportation corridors, large refineries and other industrial and electricity generation facilities, and busy international ports. The concentration of emission sources contribute to air quality problems in the local community, as well as downwind areas. Both Wilmington and Richmond have a large number of industrial and electricity generation facilities that would be subject to the cap-and-trade regulation.

- Bakersfield/Oildale: This region of the Central Valley has a mix of sources ranging from agricultural operations to widely dispersed stationary sources. The area also has a significant amount of mobile source emissions, resulting from its location along the two interstate highways connecting Northern and Southern California. The Bakersfield region has one of the most severe air quality problems in the nation. The Bakersfield/Oildale area contains a diverse array of industrial and electricity generation facilities that would be subject to the cap-and-trade regulation.

- Oro Grande: This community is located in the high Mojave Desert and includes the moderately sized towns of Hesperia and Victorville. Local air pollution sources are primarily from mineral extraction and related

commercial activities. This area has a small number of industrial and electrical generation sources that would be subject to the cap-and-trade regulation, with a focus on cement manufacturing. The local air quality problem is primarily due to the community's proximity to the South Coast, which transports substantial air pollution into the Mojave Desert.

As noted above, each community has a unique mix of industrial and electricity generation sources that would be subject to the cap-and-trade regulation. Air quality experienced by community residents is influenced by regional emissions and air quality levels, as well as an additional overlay from local sources. Therefore the assessment for each community begins with an overview of air quality and emissions on a regional basis, and then focuses on the nature of the local air quality problem and the local sources, including industrial and electricity generation facilities expected to be subject to the cap-and-trade regulation. It is difficult to predict how individual facilities within a given community may respond to the cap-and-trade regulation. However, staff examined hypothetical bounding scenarios in each community based on the nature of the sources in that community and the possible responses for each cap-and-trade sector, as discussed in Appendix P: Co-Pollutant Emissions Assessment.

1. Description of the Scenarios

Because of the compliance flexibility provided by the cap-and-trade regulation, it was not possible to identify facility-specific changes that might occur within each community. Instead, three basic hypothetical bounding scenarios were used to assess potential cumulative emissions impacts. Those bounding scenarios are: (1) a bounding co-benefit scenario, where all covered industrial and electricity generation facilities within the community reduce their greenhouse gas emissions, (2) a bounding dis-benefit scenario where all covered facilities increase their emissions, and (3) a second dis-benefit scenario where a new facility is built in the community.

For each assessment, the emissions reductions that will result from ongoing regulatory programs to reduce co-pollutants between 2008 and 2020 provide the baseline for evaluating each scenario's impacts. This baseline reflects what would occur in the absence of cap-and-trade, or if all GHG reductions were achieved outside the community.

The first scenario explores the potential co-benefits of limiting trading and the use of offsets within a community. The baseline (no change) and the first scenario bound the most likely impact of the regulation's implementation. In addition, staff examined the potential impacts of general facility growth through two additional scenarios. The possible co-pollutant increases in these two additional scenarios cannot be specifically attributed to the cap-and-trade regulation. The scenario analysis focused on the industrial and electricity generation facilities covered under cap-and-trade and does not address the additional reductions that will likely occur when transportation fuels and commercial and residential natural gas are also included under the cap.

ARB staff believes that scenarios 2 and 3 are very unlikely to result from the cap-and-trade regulation. Many factors influence a decision to expand production or build a new facility, and the cap-and-trade program itself imposes a new requirement on facilities—the need to procure allowances and offsets to accommodate GHG emissions—in addition to the strict permitting requirements already in effect for criteria pollutants and toxic air contaminants. Under scenario 2, every facility would need to purchase allowances and offsets to accommodate any growth. We believe it is more likely that a few facilities may increase production, while others would decrease. Similarly, we do not believe that compliance with the cap-and-trade regulation will cause the siting of new facilities assumed in scenario 3, though the regulation would not prevent it. Nevertheless, both scenarios are useful as hypothetical bounding analyses.

Scenario 1: The first scenario assumes as a hypothetical upper bound that GHG emissions reductions occur at each of the local industrial and electricity generation facilities in the community. On average, the cap-and-trade industrial and electricity generation sources will need to reduce their GHG emissions by 4 percent to meet the 2020 cap.[82] Therefore, staff assumed a commensurate 4 percent reduction would occur in combustion-related NOx, $PM_{2.5}$, and reactive organic gases (ROG) from these industrial and electricity generation facilities. These additional reductions would further enhance the cumulative emissions reductions from ongoing programs.

Scenario 2: The second scenario represents a hypothetical emissions increase of 4 percent at each of the cap-and-trade facilities in the community. While this scenario provides a hypothetical upper bound of aggregate facility growth in the community, staff believes it is an unlikely situation, given the current regulatory structure. As described in Appendix P: Co-Pollutant Emissions Assessment, each individual unit of permitted equipment has a maximum permitted emission limit. Large facilities such as those covered under cap-and-trade often have hundreds of individual permits. If the facility owner modified that equipment or its operation such that actual emissions would exceed the permitted levels, New Source Review (NSR) and its requirements to implement Best Available Control Technology (BACT) would apply. This is a comprehensive and lengthy process that is subject to public review. The extensive requirements of this permitting process effectively limit the potential for significant emissions increases at a given facility.

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[82] Total GHG emissions under baseline conditions in 2020 are estimated to be 507 $MMTCO_2e$. GHG emissions from the capped sectors are approximately 409 $MMTCO_2e$ of the baseline. Reductions needed to meet the cap of 334 $MMTCO_2e$ will come in part through complementary measures from the Scoping Plan. After reductions from those measures, the cap-and-trade regulation is estimated to reduce at least 18 $MMTCO_2e$, representing a 4 percent reduction from capped sector emissions.

In addition, under this scenario, every facility would need to purchase allowances and offsets to accommodate any growth. While there could be growth at a few facilities within a community, as some facilities move to more efficient ways of operation or switch to use of less carbon-intensive fuels, it is very unlikely that emissions would increase at every facility. Much more likely is a situation where a few facilities may increase production, while others would decrease. Nevertheless, staff evaluated the impact of an increase of 4 percent at every facility to represent a potential maximum community-level impact.

Scenario 3: For the third scenario, ARB assumed the hypothetical construction of a new facility within the community. For each community, ARB chose to site a facility consistent with the already existing industrial and electricity generation sources. Siting of a new facility would generally trigger NSR and its requirements to implement BACT would apply. This is a comprehensive and lengthy process that is subject to public review. In addition, the new facility would need to purchase allowances and offsets to accommodate its GHG emissions. As discussed above, ARB staff believes that the cap-and-trade regulation is unlikely to trigger construction of new facilities.

There is also the potential for increases in toxic air contaminants under Scenarios 2 and 3. Toxics emissions are typically reflected in $PM_{2.5}$ and ROG emission estimates, thus efforts to control ROG and $PM_{2.5}$ also help address toxic air contaminants broadly within the community. In addition, the requirements of the "Hot Spots"[83] Information and Assessment Act are designed to assess and mitigate more localized, facility-specific impacts. As described earlier in this section, should emissions of toxics increase such that they exceed the screening threshold, the facility would be required to conduct a Health Risk Assessment. Facility emissions that are determined to present a significant risk would then be required to implement measures to reduce that risk.

2. Limitations

These scenarios focus on the compliance responses of the industrial and electricity generation sources covered by the cap-and-trade regulation. In 2015, transportation fuels and commercial and residential natural gas will be included in the cap, likely reducing emissions from those sources. Because the reductions associated with transportation fuel and commercial and residential natural gas would be the same for each of the scenarios, ARB chose to focus the analysis on industrial and electricity generation sources. The inclusion of the emissions reductions from transportation fuel and commercial and residential natural gas

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[83] California Air Resources Board: Webpage (as reviewed January 14, 2010): AB 2588 Air Toxics "Hot Spots" Program. http://www.arb.ca.gov/ab2588/ ab2588.htm.

would likely increase the total co-pollutant benefits of the cap-and-trade regulation.

In all scenarios it is difficult to predict the actual air quality impacts within the local community of any change in emissions. For example, combustion emissions, especially from large industry and electricity generation sources, are often vented through tall stacks. The heat generated by the combustion process can further increase the height of the emissions plume. As a result, emissions from a large stack may not reach the surface until some distance downwind. In addition, due to dispersion and the time needed for chemical reactions to form regional pollutants such as ozone and secondary particulate matter, the maximum air quality impact may occur well downwind of a facility.

Air quality modeling is a standard tool for relating emissions to estimated air quality impacts. However, detailed information is required by the models to quantify the impacts. This information includes specificity on locations and types of emission sources, stack heights, timing of emissions, emission rates, and for point sources, information to characterize the point of release. Due to the flexibility each individual facility has to comply with the cap-and-trade regulation, it is impossible to characterize the timing and location of emissions changes. This makes use of modeling to characterize the air quality impact of potential changes in emissions infeasible.

Health assessments of the impact of air quality changes on human health require estimates of the change in $PM_{2.5}$, ozone, and other air pollutants for an exposed population. The health impact depends on the air pollutant type and ambient concentration, location and duration of exposure, and characteristics of the exposed population, including total number of residents, age, and baseline incident rates for various death and disease types where a quantitative relationship has been established with an air pollutant. Health assessments in California have been limited to pollution sources where $PM_{2.5}$, ozone, and air toxic exposures can be estimated using measured air quality data as a surrogate for a widely distributed source (e.g., trucks) or with the use of air quality models (e.g., ports and railyards). However, there is no unique air quality surrogate for the large industrial and electricity generation sources covered by the cap-and-trade regulation to distinguish them from smaller industrial and electricity generation sources or other types of combustion sources. Nor, as discussed above, was it feasible to conduct air quality modeling. Due to this lack of information on the concentration, location, and duration of air pollutant exposures, it was not possible to conduct a health assessment.

3. Wilmington Assessment

Wilmington is a suburb of Los Angeles, with a racially and ethnically diverse population of about 53,000 (See map in Appendix P: Co-Pollutant Emissions Assessment). Located between the Port of Los Angeles and the Port of Long Beach, the Wilmington area includes a diverse range of stationary and mobile source emissions. In combination, these two ports represent the third

largest container port in the world and account for about 25 percent of California's goods movement emissions[84]. These shipping activities result in large amounts of diesel and fugitive emissions from bulk transport operations. In addition to port-related activities, Wilmington and the surrounding area are home to railyards, major transportation corridors, oil refineries, and power plants, as well as other industrial and commercial operations. Approximately 300,000 people live within the emissions assessment area.

A total of 15 industrial and electricity generation facilities in the Wilmington area would be subject to the cap-and-trade regulation. See Appendix P: Co-Pollutant Emissions Assessment for a description of air quality and emissions in the Wilmington area and the traditional emissions control programs currently in place. Appendix P: Co-Pollutant Emissions Assessment also includes a discussion of potential emissions changes that could occur under the cap-and-trade regulation.

As described above, ARB developed three hypothetical bounding scenarios to assess potential cumulative emissions impacts in 2020 in Wilmington. For the third scenario (placing a new facility in the community), ARB evaluated the hypothetical construction of a new combined heat and power facility within the community. A combined heat and power generation facility was selected because petroleum refining is the largest cap-and-trade emissions sector in the Wilmington area. This would have the dual benefit of providing a more efficient heat source for refinery processes, while allowing excess power to be sold back to the grid. Table VII-1 provides an estimate of criteria pollutant emissions from a hypothetical 85 megawatt (MW) combined heat and power unit. It is important to remember that under California's existing regulatory structure, the construction of a new facility would be subject to the strict NSR permitting requirements described in Appendix P: Co-Pollutant Emissions Assessment. This would include requirements to implement BACT, as well as to offset the emissions regionally.

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[84] California Air Resources Board (2006): Proposed Emission Reduction Plan for Ports and Goods Movement in California. http://www.arb.ca.gov/planning/gmerp/march21plan/march22_plan.pdf

Table VII-1
Estimated Criteria Pollutant Emissions
Hypothetical Combined Heat and Power Facility
(85 MW Capacity)

	Emissions (tons per day)		
	NOX	**ROG**	**PM2.5**
Operating Emissions	0.11	0.05	0.12

Analysis of Potential Impacts

Under the baseline existing control program, including rules adopted in the 2007 State Implementation Plan (SIP)[85] to meet national air quality standards, the Wilmington area will realize further NOx, $PM_{2.5}$, and ROG emissions reductions in 2020. The reductions will come primarily from mobile sources, including light- and heavy-duty vehicles and from port-related activities such as ships maneuvering and anchoring within the port area and equipment used to load and unload ships. As shown in Table VII-2, these ongoing emissions reductions result in a 23 percent reduction in NOx, a 24 percent reduction in $PM_{2.5}$, and a 4 percent reduction in ROG emissions from 2008 levels.

The first scenario assumes that all the emission reductions needed from the cap-and-trade regulation are implemented locally at the 15 industrial and electricity generation facilities in the Wilmington area, realizing a further 4 percent reduction in combustion-related co-pollutant emissions. Because emissions from the cap-and-trade industrial and electricity generation facilities comprise only a small portion of the overall inventory, these reductions translate into less than a 4 percent decrease in the total inventory for the Wilmington area. In aggregate, implementation of reductions for the cap-and-trade regulation by industrial and electricity generation sources locally would result in an additional 1 percent enhancement in localized NOx and $PM_{2.5}$ reductions, and a small enhancement of less than 1 percent in ROG reductions. While not quantified here, combustion-generated toxic air contaminants would also likely decrease.

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[85] California Air Resources Board: Webpage (as reviewed February 9, 2010): Proposed State Strategy for California's State Implementation Plan (SIP) for the New Federal PM2.5 and 8-Hour Ozone Standards. http://www.arb.ca.gov/ planning/sip/2007sip/2007sip.htm

Table VII-2
Percent of Emissions Reductions Between 2008 and 2020
Wilmington Area[1]

	NO_X	$PM_{2.5}$	ROG
BASELINE Emission Reductions from Existing Controls and No Emission Reductions at Cap-and-Trade Industrial and Electricity Generation Facilities	**23%**	**24%**	**4%**
SCENARIO 1 Emission Reductions from Existing Controls and Emission Reductions at all Cap-and-Trade Industrial and Electricity Generation Facilities	**24%**	**25%**	**4%**
SCENARIO 2 Emission Reductions from Existing Controls and Emission Increases at all Cap-and-Trade Industrial and Electricity Generation Facilities	**22%**	**22%**	**3%**
SCENARIO 3 Emission Reductions from Existing Controls and Addition of New Facility	**23%**	**20%**	**4%**

Numbers are rounded to nearest percentage

[1] These tables include the combined emissions from mobile, area, and stationary sources. The industrial and electricity generation facilities covered by the proposed cap-and-trade regulation represent only a portion of these emissions. The emission impacts of the scenarios do not include the additional emissions reductions that will likely occur when transportation fuels and commercial and residential natural gas are included in the cap. The emissions reductions from transportation fuels and commercial and residential natural gas would affect each of these scenarios equally.

As described previously, while ARB staff did not find situations where emissions increases were clearly attributable to implementation of cap-and-trade, the second scenario evaluated the potential general impact of an emissions increase of 4 percent at every cap-and-trade industrial and electricity generation facility in the community region. This hypothetical upper-bound increase in emissions would slightly reduce the benefits of the ongoing control program, with a 2 percent reduction in $PM_{2.5}$ benefits, and a 1 percent reduction in NOx and ROG benefits. However, cumulative emissions in the Wilmington area would still be lower in 2020, as compared to 2008.

Scenario 3 explored the potential emissions impacts of construction of a new combined heat and power unit at an existing refinery. Based on typical emissions from similar units, the addition of a hypothetical new unit in the community would slightly reduce the benefits of the ongoing control program, with a 4 percent reduction in $PM_{2.5}$ benefits, and a very small reduction that is less than 1 percent in NOx and ROG benefits. Overall, cumulative emissions in the Wilmington area would still be lower in 2020, as compared to 2008.

Summary

In summary, air quality is improving throughout the Wilmington area. The assessment area meets both the federal annual $PM_{2.5}$ and 8-hour ozone standards, and the area is very close to meeting the daily $PM_{2.5}$ standard. California's ongoing co-pollutant emissions control programs will ensure that cumulative emissions will continue to decrease through 2020 in the Wilmington area, with associated health improvements from improved air quality.

While the cap-and-trade regulation allows for flexibility in how facilities comply, staff looked at several scenarios that bound the possibilities, including the construction of a new facility. If emissions reductions due to implementation of the cap-and-trade regulation occur locally at the fifteen facilities in Wilmington, there could be some small additional co-benefits from the reduction of combustion-related criteria pollutants. While emissions increases directly attributable to the cap-and-trade regulation are considered very unlikely, potential emissions increases that might occur in general are also expected to be small within the context of the larger cumulative emissions reductions that will be occurring as a result of California's extensive emissions control programs.

4. Oildale-Bakersfield Assessment

The Oildale/Bakersfield area (Bakersfield area) is located in the central portion of Kern County in the San Joaquin Valley Air Basin. It includes not only Oildale, but much of the Bakersfield urban area and the town of Shafter as well (See map in Appendix P: Co-Pollutant Emissions Assessment). Overall, about 425,000 people live in this area. In addition to significant mobile source emissions from trucks and passenger cars traveling along Highway 99 and Interstate 5, the Bakersfield area is adjacent to a number of oil fields, including two of the largest in California. The Kern River Oil Field to the east and northeast of Oildale has more than 9,000 active wells. It ranks second only to the Midway-Sunset Oil Field in southwestern Kern County. Other sizeable fields in the Bakersfield area include the Kern Front and Poso Creek oil fields north of Oildale and the smaller Fruitvale Oil Field to the southwest. In addition to the oil-related activities, the Bakersfield assessment area also contains a number of cogeneration facilities.

A total of 23 industrial and electricity generation facilities in the Bakersfield area would be subject to the cap-and-trade regulation. These facilities represent a mix of different types of operations. Appendix P: Co-Pollutant Emissions Assessment describes air quality and emissions in the assessment area and the traditional emissions control programs currently in place. This section provides a discussion of the emissions changes that could occur under the cap-and-trade regulation.

As described above, ARB developed three hypothetical bounding scenarios to assess potential cumulative emissions impacts in 2020 in the Bakersfield area. For the third scenario (placing a new facility in the community), ARB evaluated the hypothetical construction of a new biorefinery within the Bakersfield area.

The Low Carbon Fuel Standard and the federal renewable fuels standard have mandated that biofuels become a greater portion of transportation fuels, in order to reduce GHG emissions. Agricultural activities in the San Joaquin Valley generate materials that could be used to fuel a biorefinery. Table VII-3, below, provides an estimate of criteria pollutant emissions from a hypothetical biofuel refinery with an annual capacity of 50 million gallons. Under California's existing regulatory structure, the construction of a new facility would be subject to the strict NSR permitting requirements described in Appendix P. This would include requirements to implement BACT, as well as to offset the emissions regionally. There is also the potential for increased truck traffic to deliver biomass to the plant. However, due to ARB regulations, in 2020 most trucks will be required to be equipped with the cleanest 2010 engines, as well as diesel particulate traps.

Table VII-3
Estimated Criteria Pollutant Emissions
Hypothetical Biofuel Refining Facility
(50 million gallons/year capacity)

	Emissions (tons per day)		
	NO_X	ROG	PM_{10}
Cellulosic Ethanol Facility	0.26	0.69	0.27

Analysis of Potential Impacts

Under the existing baseline control program, including rules adopted in the 2007 SIP to meet national air quality standards, the Bakersfield area would realize NOx, $PM_{2.5}$, and ROG emissions reductions in 2020. The reductions will come primarily from on-road and off-road motor vehicles. As shown in Table VII-4, these ongoing emissions reductions result in a 44 percent reduction in NOx and an 11 percent reduction in both $PM_{2.5}$ and ROG emissions from 2008 levels.

The first scenario assumes that all the emissions reductions needed from the cap-and-trade regulation are implemented locally at the 23 industrial and electricity generation facilities in the Bakersfield area, realizing a further 4 percent reduction in co-pollutant emissions. Because emissions from the cap-and-trade industrial and electricity generation facilities comprise only a small portion of the overall inventory, these reductions translate into less than a 4 percent decrease in the total inventory for the Bakersfield area. In aggregate, full implementation of the cap-and-trade regulation by industrial and electricity generation sources locally would result in an additional 1 percent enhancement in localized NOx reductions, and a small, less than 1 percent enhancement in localized $PM_{2.}5$ and ROG reductions. While not quantified here, combustion-generated toxic air contaminants would also likely decrease.

Table VII-4
Percent Emissions Reductions Between 2008 and 2020
Bakersfield Area[1]

	NO_X	$PM_{2.5}$	ROG
BASELINE Emission Reductions from Existing Controls and No Emission Reductions from Cap-and-Trade Industrial and Electricity Generation Facilities	**44%**	**11%**	**11%**
SCENARIO 1 Emission Reductions from Existing Controls and Emission Reductions at all Cap-and-Trade Industrial and Electricity Generation Facilities	**45%**	**11%**	**11%**
SCENARIO 2 Emissions Reductions from Existing Controls and Emission Increases at all Cap-and-Trade Industrial and Electricity Generation Facilities	**44%**	**10%**	**11%**
SCENARIO 3 Emissions Reductions from Existing Controls and Addition of New Facility	**44%**	**7%**	**9%**

Numbers are rounded to nearest percentage

[1] These tables include the combined emissions from mobile, area, and stationary sources. The industrial and electricity generation facilities covered by the proposed cap-and-trade regulation represent only a portion of these emissions. The emissions impacts of the scenarios do not include the additional emissions reductions that will likely occur when transportation fuels and commercial and residential natural gas are included in the cap. The emissions reductions from transportation fuels and commercial and residential natural gas would affect each of these scenarios equally.

As described previously, while ARB staff did not find situations where emissions increases were clearly attributable to implementation of cap-and-trade, the second scenario evaluated the potential general impact of an emissions increase of 4 percent at every cap-and-trade facility in the assessment area. This hypothetical upper-bound increase in emissions would slightly reduce the overall benefits of the ongoing control program, with a 1 percent reduction in $PM_{2.5}$ benefits, and a very small reduction that is less than 1 percent in NOx and ROG benefits. However, cumulative emissions in the Bakersfield area would still be lower in 2020, as compared with 2008.

Scenario 3 explored the potential emissions impacts of constructing a new biofuel refining facility. Based on typical emissions from similar facilities, the addition of a hypothetical new facility in the Bakersfield area would slightly reduce the benefits of the ongoing control program, with a 4 percent reduction in $PM_{2.5}$ benefits, 2 percent reduction in ROG benefits, and a small reduction that is less than 1 percent in NOx benefits. However, overall, cumulative emissions in the Bakersfield area would still be lower in 2020, when compared with 2008.

Summary

In summary, air quality is improving throughout the Bakersfield area, and the assessment area is making progress toward meeting the federal $PM_{2.5}$ and 8-hour ozone standards. California's ongoing co-pollutant emissions control programs will ensure that cumulative emissions will continue to decrease through 2020 in the Bakersfield area, with associated health improvements from improved air quality.

While the cap-and-trade regulation allows for flexibility in how facilities comply, staff looked at several scenarios that bound the possibilities, including the construction of a new facility. If emissions reductions due to implementing the cap-and-trade regulation occur locally at the 23 facilities in the assessment area, there could be some small additional co-benefits from the reduction of combustion-related criteria pollutants. While emissions increases directly attributable to the cap-and-trade regulation are considered very unlikely, potential emissions increases that might occur in general are also expected to be small within the context of the larger cumulative emissions reductions that will be occurring as a result of California's extensive emissions control programs.

5. Richmond Assessment

The Richmond area, located on both the San Pablo and San Francisco Bays, encompasses portions of Contra Costa, Alameda, and Solano Counties, and includes portions of the cities of Richmond, El Cerrito, Berkeley, Emeryville, Benicia, and Alameda (See map in Appendix P: Co-Pollutant Emissions Assessment). The area is home to a racially and ethnically diverse population of over approximately 500,000 people and contains a wide range of stationary and mobile source emissions. These sources include the Port of Richmond and the Richmond Rail Yard, which produce diesel and fugitive emissions from bulk transport operations. In addition, the Richmond area is home to oil refineries, power plants, and major transportation corridors, as well as other industrial and commercial operations.

A total of seven industrial and electricity generation facilities in the Richmond area would be subject to a cap-and-trade program. Appendix P: Co-Pollutant Emissions Assessment describes air quality and emissions in the Richmond area and the traditional emissions control programs currently in place. This section provides a discussion of potential emissions changes that could occur under the cap-and-trade regulation.

As described above, ARB developed three hypothetical bounding scenarios to assess potential cumulative emissions impacts in 2020 in the Richmond area. For the third scenario (placing a new facility in the community), ARB evaluated the hypothetical construction of a new combined heat and power facility within the community. A combined heat and power generation facility was selected because petroleum refining is the largest cap-and-trade emissions sector in the Richmond area. This would have the dual benefit of providing a more efficient

heat source for refinery processes, while allowing excess power to be sold back to the grid. Table VII-5, below, provides an estimate of criteria pollutant emissions from a hypothetical 85 megawatt (MW) combined heat and power unit. It is important to remember that under California's existing regulatory structure, the construction of a new facility would be subject to the strict NSR permitting requirements described in Appendix P: Co-Pollutant Emissions Assessment. This would include requirements to implement BACT, as well as to offset the emissions regionally.

Table VII-5
Estimated Criteria Pollutant Emissions
Hypothetical Combined Heat and Power Facility
(85 MW Capacity)

	Emissions (tons per day)		
	NO_X	ROG	$PM_{2.5}$
Operating Emissions	0.11	0.05	0.12

Analysis of Impacts

Under the existing baseline control program, including rules adopted in the 2007 SIP to meet national air quality standards, the Richmond area will realize further NOx and ROG emissions reductions in 2020. The reductions will come primarily from on-road motor vehicle and off-road mobile sources, including light- and heavy-duty vehicles. These ongoing emissions reductions are summarized in Table VII-6, and reflect a 25 percent reduction in NOx and ROG emissions from 2008 levels. In contrast, the Richmond study area would see a slight increase of 1 percent in $PM_{2.5}$ (reflected as negative numbers in Table VII-6), resulting from projected increases in area source emissions such as commercial cooking and residential fuel use, which are linked to population growth.

The first scenario assumes that all the emissions reductions needed from the cap-and-trade regulation are implemented locally at the seven industrial and electricity generation facilities in the Richmond area, realizing a further 4 percent reduction in co-pollutant emissions. Because emissions from the cap-and-trade industrial and electricity generation facilities comprise only a small portion of the overall inventory, these reductions translate into less than a 4 percent decrease in the total inventory for the Richmond area. In aggregate, full implementation of the cap-and-trade regulation by industrial and electricity generation sources locally would result in an additional 2 percent enhancement in localized NOx reductions, a 1 percent reduction in $PM_{2.5}$, and a small enhancement, less than 1 percent, in localized ROG reductions. While not quantified here, combustion-generated toxic air contaminants would also likely decrease.

Table VII-6
Percent of Emissions Reductions Between 2008 and 2020
Richmond Area[1]

	NOx	$PM_{2.5}$	ROG
BASELINE Emission Reductions from Existing Controls and No Emission Reductions at Cap-and-Trade Industrial and Electricity Generation Facilities	**28%**	**-1%**	**16%**
SCENARIO 1 Emissions Reductions from Existing Controls and Emission Reductions at all Cap-and-Trade Industrial and Electricity Generation Facilities	**30%**	**0%**	**16%**
SCENARIO 2 Emission Reductions from Existing Controls and Emission Increases at all Cap-and-Trade Industrial and Electricity Generation Facilities	**27%**	**-2%**	**14%**
SCENARIO 3 Emission Reductions from Existing Controls and Addition of New Facility	**28%**	**-2%**	**16%**

Numbers are rounded to nearest percentage

[1] These tables include the combined emissions from mobile, area, and stationary sources. The industrial and electricity generation facilities covered by the proposed cap-and-trade regulation represent only a portion of these emissions. The emissions impacts of the scenarios do not include the additional emissions reductions that will likely occur when transportation fuels and commercial and residential natural gas are included in the cap. The emissions reductions from transportation fuels and commercial and residential natural gas would affect each of these scenarios equally.

As described previously, while ARB staff did not find situations where emissions increases were clearly attributable to implementation of cap-and-trade, the second scenario evaluated the potential general impact of an emissions increase of four percent at every cap-and-trade facility in the community region. This hypothetical upper-bound increase in emissions would slightly reduce the overall benefits of the ongoing control program, with a 2 percent reduction in ROG benefits, a 1 percent reduction in NOx benefits, and an additional 1 percent increase in $PM_{2.5}$. However, cumulative emissions of NOx and ROG in the Richmond area would still be lower in 2020, as compared to 2008.

Scenario 3 explored the potential emissions impacts of construction of a new combined heat and power unit at an existing refinery. Based on typical emissions from similar units, the addition of a hypothetical new unit in the community would slightly reduce the benefits of the ongoing control program, with a very small reduction that is less than 1 percent in NOx and ROG benefits,

and an additional 1 percent increase in $PM_{2.5}$ emissions. Overall, cumulative emissions for NOx and ROG in the Richmond area would still be lower in 2020, as compared to 2008.

Summary

In summary, air quality is improving throughout the Richmond area. The assessment area meets both federal $PM_{2.5}$ and 8-hour ozone standards. California's ongoing co-pollutant emissions control programs will ensure that cumulative emissions will continue to decrease through 2020 in the Richmond area, with associated health improvements from improved air quality.

While the cap-and-trade regulation allows for flexibility in how facilities comply, staff looked at several scenarios that bound the possibilities, including the construction of a new facility. If emissions reductions due to implementation of the cap-and-trade regulation occur locally at the seven facilities in Richmond, there could be some small additional co-benefits from the reduction of combustion-related criteria pollutants. While emissions increases directly attributable to the cap-and-trade regulation are considered very unlikely, potential emissions increases that might occur in general are also expected to be small within the context of the larger cumulative emissions reductions that will be occurring as a result of California's extensive emissions control programs.

6. Apple Valley/Oro Grande Assessment

The Apple Valley/Oro Grande area (hereafter called the Oro Grande area) is an economically and racially diverse area located in the Mojave Desert's Victor Valley. With the town of Oro Grande in the northwest, Apple Valley in the center, and Lucerne Valley in the southeast of the assessment area, this high desert region also includes the towns of Victorville, Hesperia, and Adelanto. About 230,000 people live in this portion of the Mojave Desert (See map in Appendix P: Co-Pollutant Emissions Assessment).

Although the Oro Grande area is more sparsely populated than the South Coast region to the south, the desert communities have grown over the last several decades as bedroom communities of the South Coast. Interstate 15 and Highway 395 act as thoroughfares, carrying significant amounts of commuter and truck traffic in and out of the Mojave Desert region.

Four industrial and electricity generation facilities in the Oro Grande area would be subject to the cap-and-trade regulation. Appendix P describes air quality and emissions in the Oro Grande area and the traditional emissions-control programs currently in place. This section provides a discussion of potential emissions changes that could occur under the cap-and-trade regulation.

As described above, ARB developed three hypothetical bounding scenarios to assess potential cumulative emissions impacts in 2020 in Oro Grande. For the third scenario (placing a new facility in the community), ARB evaluated the

hypothetical construction of a new natural gas power plant. Due to requirements of the Renewable Energy Standard and other initiatives, there may be an increase in natural gas-fueled power generation, as compared to more carbon-intensive coal, in order to reduce GHG emissions. Given that the Oro Grande area already contains one small power facility, ARB staff evaluated the potential emissions from an additional natural gas facility. Table VII-7, below, provides an estimate of criteria pollutant emissions from a hypothetical 500 megawatt (MW) combined-cycle natural gas power plant. It is important to remember that under California's existing regulatory structure, the construction of a new facility would be subject to the strict NSR permitting requirement described in Appendix P: Co-Pollutant Emissions Assessment. This would include requirements to implement BACT, as well as offset the emissions regionally.

Table VII-7
Estimated Criteria Pollutant Emissions
Hypothetical Combined-Cycle Natural Gas Baseload Power Plant
(500 MW Capacity)

	Emissions (tons per day)		
	NO_X	ROG	PM_{10}
Operating Emissions	0.31	0.11	0.27

Analysis of Potential Impacts

Under the existing baseline control program, including rules adopted in the 2007 SIP to meet national air quality standards, the Oro Grande area would still realize NOx, $PM_{2.5}$, and ROG emissions reductions in 2020. The reductions will come primarily from on-road and off-road motor vehicles. As shown in Table VII-8, these ongoing emissions reductions result in a 16 percent reduction in NOx, 2 percent reduction in $PM_{2.5}$, and 3 percent reduction in ROG emissions from 2008 levels.

The first scenario assumes that all the emissions reductions needed from the cap-and-trade regulation are implemented locally at the four industrial and electricity generation facilities in the Oro Grande area, realizing a further 4 percent reduction in co-pollutant emissions. Because emissions from the cap-and-trade industrial and electricity generation facilities comprise only a small portion of the overall inventory, these reductions translate into less than a 4 percent decrease in the total inventory for the Oro Grande area. In aggregate, full implementation of the cap-and-trade regulation by industrial and electricity generation sources locally would result in an additional 3 percent enhancement in localized NOx benefits, and an additional 1 percent enhancement in both the $PM_{2.5}$ and ROG benefits (Table VII-8). While not quantified here, combustion-generated toxic air contaminants would also likely decrease.

Table VII-8
Percent Emissions Reductions Between 2008 and 2020
Oro Grande Area[1]

	NOx	$PM_{2.5}$	ROG
BASELINE Emission Reductions from Existing Controls and No Emission Reductions at Cap-and-Trade Industrial and Electricity Generation Facilities	**16%**	**2%**	**3%**
SCENARIO 1 Emissions Reductions from Existing Controls and Emission Reduction at all Cap-and-Trade Industrial and Electricity Generation Facilities	**19%**	**3%**	**4%**
SCENARIO 2 Emission Reductions from Existing Controls and Emission Increases at all Cap-and-Trade Industrial and Electricity Generation Facilities	**14%**	**0%**	**3%**
SCENARIO 3 Emissions Reductions from Existing Controls and Addition of New Facility	**16%**	**-1%**	**3%**

Numbers are rounded to nearest percentage

[1] These tables include the combined emissions from mobile, area, and stationary sources. The industrial and electricity generation facilities covered by the proposed cap-and-trade regulation represent only a portion of these emissions. The emissions impacts of the scenarios do not include the additional emissions reductions that will likely occur when transportation fuels and commercial and residential natural gas are included in the cap. The emissions reductions from transportation fuels and commercial and residential natural gas would affect each of these scenarios equally.

As described previously, while ARB staff did not find situations where emissions increases were clearly attributable to implementation of cap-and-trade, the second scenario evaluated the potential general impact of an emissions increase of 4 percent at every cap-and-trade facility in the community region. This hypothetical upper-bound increase in emissions would slightly reduce the overall benefits of the ongoing control program, with a 2 percent reduction in both NOx and $PM_{2.5}$ benefits, and a small reduction, less than 1 percent, in ROG benefits. However, cumulative emissions in the Oro Grande area would still be lower in 2020, as compared to 2008, for both NOx and ROG, while $PM_{2.5}$ emissions would remain constant.

Scenario 3 explored the potential emissions impacts of constructing a new natural gas power plant in the local area. Based on typical emissions from similar facilities, the addition of a hypothetical new facility would slightly reduce the overall benefits of the ongoing control program, with a small reduction, less

than 1 percent, in NOx and ROG benefits and a 1 percent increase in $PM_{2.5}$. Overall, cumulative emissions in the Oro Grande area would still be lower in 2020, as compared to 2008, for both NOx and ROG, while $PM_{2.5}$ emissions would increase slightly.

Summary

In summary, air quality is improving throughout the Oro Grande area. The assessment area meets the federal $PM_{2.5}$ standards and shows continued progress toward meeting the federal ozone standard. California's ongoing co-pollutant emissions control programs will ensure that cumulative emissions will continue to decrease through 2020 in the Oro Grande area, with associated health improvements from improved air quality.

While the cap-and-trade regulation allows for flexibility in how facilities comply, staff looked at several scenarios that bound the possibilities, including the construction of a new facility. If emissions reductions due to implementing the cap-and-trade regulation occur locally at the four facilities in the assessment area, there could be some small additional co-benefits from the reduction of combustion-related criteria pollutants. While emissions increases directly attributable to the cap-and-trade regulation are considered very unlikely, potential emissions increases that might occur in general are also expected to be small within the context of the larger cumulative emissions reductions that will be occurring as a result of California's extensive emissions control programs.

E. Conclusion

Due to California's comprehensive control programs, air quality has improved significantly throughout the State, with commensurate reductions in adverse health impacts. These improvements will continue through 2020 as ARB continues to adopt and implement regulations to meet State and federal air quality standards, reduce toxic risk, and decrease California's GHG emissions.

ARB's analysis demonstrated that California's existing programs to meet federal air quality standards will provide the majority of emissions reductions in each community, with further NOx reductions ranging from approximately 15 to 45 percent by 2020. Staff's analysis further indicates that the cap-and-trade regulation is expected to have a beneficial impact on emissions. In the communities evaluated, the regulation has the potential to provide small additional NOx reductions in the range of 1 to 3 percent if all GHG reductions were implemented locally. The assessment does not include criteria pollutant and toxic emissions reductions that the cap-and-trade program is expected to provide from transportation fuels and commercial and residential gas use, in addition to those likely to occur at industrial and electricity generation facilities.

Due to the inherent flexibility of the cap-and-trade regulation, as well as the overlay of other complementary GHG reduction measures, it is difficult to predict the decisions that individual facilities may make in any given community.

However, based on the available data, current law and policies that control industrial and electricity generation sources of air pollution, and expected compliance responses, ARB believes that emissions increases at the statewide, regional, or local level due to the regulation are not likely. The cap-and-trade program will provide an incentive for covered facilities to decrease GHG emissions and any related emissions of criteria and toxic pollutants.

VIII ECONOMIC IMPACTS OF THE PROPOSED REGULATION

A. Summary of Economic Impacts

The cap-and-trade program will lead to increased investment in efficient buildings and technologies and in advanced fuels. At expected allowance prices, these investments reduce fuel use by 2 to 4 percent in 2020, while economic growth between 2007 and 2020 continues at a rate virtually on par with current projections. Impacts on long-term projected growth rates in personal income and employment are similarly small. Implementation of the program will, however, shift investment and growth within the overall economy toward those sectors driven by the production of cleaner and more efficient technologies.

Implementing the cap-and-trade program can also help mitigate the economic consequences of continued reliance on fossil fuels. Experience in recent decades, such as the spike in world oil prices in the summer of 2008, has illustrated the economic costs of volatile energy prices on California's economy. While this report does not attempt to quantify the benefits of reduced dependence on fossil fuels in the face of continued volatility of world energy prices, it does show that California can significantly reduce its dependence on these fuels and, therefore, its vulnerability to future price spikes.

The cap-and-trade program is designed to help drive investment into activities that result in lower GHG emissions. As businesses and consumers make investments in energy efficiency and clean fuels, some sectors will see significant new activity, including those that design or manufacture renewable technologies, and those that provide energy retrofits or efficiency improvements. Because the models used in this analysis are based on the structure of the economy in the base year, the analysis does not fully reflect the potential for increased growth in output and employment in sectors that could benefit from this new investment. This analysis should be viewed as a conservative estimate of the potential statewide impacts from the program.

This economic analysis focuses exclusively on the economic effects in California of implementing the cap-and-trade program, and does not consider the avoided costs of inaction. The potential effects of climate change on California could cause severe economic damage. While California has developed a climate adaptation strategy to help alleviate these potential costs, the risk of potentially high economic costs from climate change in California remains real.[86]

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[86] *2009 California Climate Adaptation Strategy.* 2009. California Natural Resources Agency. Found at: http://www.climatechange.ca.gov/adaptation/.

While California acting alone cannot reduce emissions sufficiently to change the course of climate change worldwide, California's leadership has played, and continues to play, a critical role in moving federal and international climate policy forward. Successful implementation of AB 32, including the cap-and-trade program, has the potential to help move climate policy in a positive direction at the state, regional, and federal levels in the coming years. The magnitude of the impacts that California could face from climate change provide a useful context for understanding the significance of the relatively modest economic costs associated with taking action to reduce California's GHG emissions. Overall, staff finds no significant adverse impacts on California business or consumers as a whole as a result of the proposed regulation.

B. Legal Requirements

Section 11346.3 of the Government Code requires State agencies to assess the potential for adverse economic impacts on California business enterprises and individuals when proposing to adopt or amend any administrative regulation. The assessment must include a consideration of the impact of the proposed regulation on California jobs, the expansion, elimination or creation of businesses, and the ability of California businesses to compete with businesses in other states.

Also, State agencies are required to estimate the cost or savings to any State or local agency and school district in accordance with instructions adopted by the Department of Finance (DOF). The estimate shall include any non-discretionary cost or savings to local agencies and the cost or savings in federal funding to the State.

Finally, Health and Safety Code section 57005 requires the ARB to perform an economic impact analysis of submitted alternatives to a proposed regulation before adopting any major regulation. A *major regulation* is defined as a regulation that will have a potential cost to California business enterprises in an amount exceeding $10 million in any single year.

This Chapter provides a description of the methodology used to estimate costs, as well as ARB staff's analysis of the economic impacts on California businesses and State and local agencies.

C. Cap-and-Trade Program Design

The main design elements of the cap-and-trade program are described in Table VIII-1. The analysis is performed with the assumption that no regional or federal

climate program is in place prior to 2020.[87] Furthermore, the analysis does not speculate about polices that may be adopted to reach targets beyond the 2020 goal established by AB 32.

The modeling uses allowance prices that rise by a fixed percentage each year. Banking of allowances for future use is allowed without limitation. In the early years, relatively low-cost abatement opportunities are available. Thus, banking motivates emitters to over-comply in early years if those low-cost reductions can be credited against compliance obligations in later years.

Table VIII-1: Cap-and-Trade Program Elements

1.	Region	California
2.	GHG Pollutants	CO_2, CH_4, N_2O, SF_6, PFC, NF_3 and HFC
3.	Covered Sectors 2012–2014 2015–2020	 Electricity and large industrial Electricity, large industrial, transportation fuels, commercial and residential fuels, and small industrial
4.	Cap Trajectory	Linear phase-in
5.	Allocation	100 percent auction for the electricity sector
6.	Offsets	Limited to 8 percent of emissions
7.	Banking	Allowed without limitation
8.	Allowance Reserve	Allowances from the Reserve made available at $40, $45, and $50/metric ton in 2012, rising to $60, $67, and $75/metric ton in 2020

D. Costs and Benefits

The cap-and-trade program does not specify how or where emissions reductions will be made. Reductions will be made by covered sources if the cost of making reductions is less than the cost of acquiring allowances and offsets. Reductions will also be made throughout the economy as a result of increased investment in energy efficiency and energy conservation.

[87] The regulation allows linking with other programs, including those being developed by other WCI jurisdictions. However, a decision to link will require a separate regulatory action subject to the formal rulemaking process, including requirements for an economic analysis.

Compliance options available to California producers and consumers are discussed in Appendix F: Compliance Pathway Analysis. In this economic analysis, energy and economic models are used to generate estimates of the potential compliance costs and the associated economic impacts.

The financial effects of the cap-and-trade program can be divided into four main categories:

- Transaction costs (for covered sectors only).
- Changes in device and/or process expenditures.[88]
- Changes in fuel expenditures.
- Changes in device operation and maintenance expenditures.

In addition to analyzing these financial effects, this analysis also examines the macro-economic effects on California's economy.

Reductions in fuel use brought on by cap-and-trade will also reduce criteria pollutant emissions, as discussed in Chapter VII: Co-Pollutant Emissions Assessment and in Appendix P: Co-Pollutant Emissions Assessment. This analysis does not attempt to measure the economic benefits from reductions in criteria pollutants.

1. Transactions Costs

Transaction costs apply only to facilities with a compliance obligation. These costs can be grouped into three categories: (1) early implementation costs; (2) monitoring, reporting, and verification costs; and (3) trading costs.

Early implementation costs are fixed costs that are incurred only once, before the program launch; for example, the familiarization with program rules and guidelines, calculating baseline emissions, and the purchase of any necessary capital equipment. Annualized across the life span of the program, these costs would be significantly lower than the other transaction cost components for most of the program's participants.

The costs for monitoring, reporting, and verification of emissions are considered a part of the ARB Mandatory Reporting Rule and are not considered as additional in this analysis. However, staff notes that over time, the costs for

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[88] *Devices* are mechanical end-uses of energy, such as lighting, space heating, or air conditioning, while *process* reflects building shell improvements, such as insulation, or industrial process improvements.

monitoring, reporting, and verification of emissions should decline as a result of learning-by-doing and increased competition among verifiers. For example, a survey of Irish firms in the EU ETS found that for one quarter of the respondents, monitoring, reporting, and verification costs had decreased over the first three years of the EU ETS.[89] Based on analysis of existing programs, trading costs are not expected to be significant. Therefore trading costs will not be considered further in this analysis.

2. Expenditure Changes

The cap-and-trade program will affect the cost of using fossil fuel-based energy, which in turn will affect the price of most goods and services throughout the California economy. Some covered entities will make efficiency improvements that will reduce their emissions and their fuel expenditures. Additionally, increases in energy costs will drive secondary emissions reductions by non-covered entities though increased energy efficiency, decreased purchases of energy-intensive goods and services, and conservation.

Since the cap-and-trade program does not specify how or where emissions reductions will occur, it is impossible to know what covered or non-covered entities will do in response to the cap-and-trade program. Possible compliance responses must therefore be estimated using models. The Energy 2020 model was used to estimate the change in emissions and energy prices, and in capital, process, operation and maintenance, and fuel expenditures associated with a price on CO_2.

Energy 2020 is a detailed energy supply and demand and emissions accounting system of the Western United States. The model simulates the demand for all fuels for three residential categories, over 40 commercial and industrial categories, and three transportation categories. Additional detail on the Energy 2020 model is presented in Appendix N: Supporting Documentation for the Economic Analysis and the Energy 2020 Inputs and Assumptions book.[90]

Methods available for emissions reductions in Energy 2020 include:

- Fuel switching.[91]
- Earlier replacement of devices.

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[89] Jaraite, J., F. Convery, and C. Di Maria. 2009. *Transaction Costs of Firms in the EU ETS.* University College Dublin, School of Geography, Planning and Environmental Policy, Richview, Clonskeagh, Dublin.

[90] The Energy 2020 Inputs and Assumptions book can be found at: http://www.arb.ca.gov/cc/scopingplan/economics-sp/models/book1002.pdf.

[91] Renewable electricity above the 33 percent Renewable Electricity Standard or transportation biofuel penetration above the Low Carbon Fuel Standard is not assumed to occur in the Energy 2020 modeling.

- Purchase of devices with greater efficiency.
- Building shell improvements.
- Reductions in high-GWP gases.

Methods not available for emissions reductions in Energy 2020 include:[92]

- Carbon capture and sequestration.
- New nuclear power plants.

3. Economic Impacts

The overall impacts on the State economy are estimated using the Environmental Dynamic Revenue Assessment Model (E-DRAM). E-DRAM is a computable general equilibrium (CGE) model of the California economy. Computable general equilibrium models are standard tools of empirical analysis designed to assess the regional costs of GHG emissions limits that take into account all secondary effects that these policies could have on prices, commodity and factor substitutions, and incomes.

The E-DRAM model was developed by Dr. Peter Berck of the University of California, Berkeley, in collaboration with the California Department of Finance and the Air Resources Board. The current model includes 188 distinct sectors: 120 industrial sectors, 2 factor sectors (labor and capital), 8 household sectors, 9 consumption sectors, 1 investment sector, 45 government sectors, and 1 sector that represents the rest of the world.

More detail on the E-DRAM model is presented in Appendix N: Supporting Documentation for the Economic Analysis.

E. Economic Analysis

This analysis presents estimated impacts for a range of possible allowance prices. A large number of factors influence the allowance price.[93] The technological and behavioral factors include the ease of substitution by firms to low-GHG methods of production, the extent to which consumers shift to low-GHG products in response to changes in prices, and the pace of technological progress. A number of policy factors also apply. These include the stringency of

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[92] These technologies are unlikely to be available for emissions reductions before 2020. They may play a role in a longer-run emissions-reduction strategy.

[93] For a fuller discussion of these factors, see *Allocating Emissions Allowances Under a California Cap-and-Trade Program,* a report from the Economic and Allocation Advisory Committee. March 2010. http://www.climatechange.ca.gov/eaac/documents/eaac_reports/2010-03-22_EAAC_Allocation_Report_Final.pdf.

the overall cap and the reductions from other AB 32 policies. Other important policy factors include the extent of output-based updated free allocation, linkages with other markets, the availability and price of offsets, provisions for allowance banking and borrowing, and leakage.

Given the uncertainties about the nature of these factors, the allowance price cannot be predicted precisely. Rather, to evaluate potential economic impacts, the allowance price is estimated based on a range of reasonable scenarios of technological opportunities and behavioral responses.

In 2010, ARB conducted a joint analysis of the AB 32 Scoping Plan with Charles River Associates and Professor David Roland-Holst of the University of California, Berkeley. The estimated 2020 allowance price in these three analyses ranged from about $20 to $100.[94, 95, 96] The range of prices in those analyses depended on assumptions about the success of other AB 32 policies and whether offsets were allowed for compliance.

Appendix E: Setting the Program Emissions Cap, presents detail on the number of allowances that will be made available and the reduction path for the proposed regulation. Cumulative projected emissions over 2012 through 2020 total 2,948 $MMTCO_2e$. The number of allowances that would be made available over those years is 2,674 million. The difference between these two numbers, 273 million, represents the required program reductions, some of which may be achieved through projects that generate offset credits. However, approximately 123 million allowances will be placed in the Reserve and only made available at the prescribed reserve prices. For allowance prices to remain below the reserve prices—that is, for none of the allowances from the Reserve to be used—approximately 397 million metric tons must be reduced by 2020.

Table VIII-2 presents the potential cumulative reductions for the years 2012 through 2020 estimated in Energy 2020 that could occur at the various price levels, along with an estimate of the number of offsets that could be available for compliance at those prices. The number of offsets available each year is calculated using the following offset supply curve:

$$Q \text{ (millions)} = (P - 8) / 0.75$$

Q is the quantity of offsets available at price P in a given year

Regulations implementing AB 32 complementary policies in capped sectors that are either adopted or are likely to be adopted, such as the 33 Percent Renewable

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[94] http://www.arb.ca.gov/cc/scopingplan/economics-sp/updated-analysis/updated_sp_analysis.pdf
[95] http://www.arb.ca.gov/board/books/2010/042110/10-3-6-david-roland-holst-panelist.pdf
[96] http://www.arb.ca.gov/cc/scopingplan/economics-sp/meetings/042110/bernstein.pdf

Energy Standard, the Low Carbon Fuel Standard, and the California Advanced Clean Cars Program, could account for more than 150 million cumulative tons of reductions.[97] Further reductions are anticipated from other complementary policies in capped sectors, such as aggressive energy efficiency or changes in land use and transportation planning. Finally, there would be additional reductions that come from price-induced conservation that are not captured in the Energy 2020 model.

Based on the assumptions about internal reductions available to capped sectors, the availability of offsets and the reductions from AB 32 complementary policies, staff believe that the 397 million cumulative metric ton reduction requirement is likely to be met at an allowance price that falls within the range of $15 to $30 per metric ton in 2020. For example, at an allowance price of $30 metric ton, estimated reductions by covered sources total 114 million, while an estimate of offsets available at a $30/metric ton price total 177 million. Therefore, to achieve the 397 metric ton reduction, the complementary policies would have to provide for slightly over 100 million metric tons in reductions. To the extent that they do more, a lower allowance price would occur.

The 2020 prices used in this analysis include those that could be considered likely given the previous analyses and more recent estimates about emissions: prices of $10 and $20/metric ton at the start of the program in 2012, which equate to $15 and $30/metric ton in the year 2020; and the reserve trigger prices where additional allowances would be made available as part of the proposed cost containment mechanism: $40, $45, and $50/metric ton in 2012, which equate to $60, $67, and $75/metric ton in the year 2020. [98]

Table VIII-2: Estimated Energy 2020 Cumulative Emissions Reductions, 2012–2020

2020 Allowance Prices per Metric Ton of CO_2e	**Expected Price Range**		**Reserve Prices**		
	$15	**$30**	**$60**	**$67**	**$75**
Internal Reductions (Energy 2020)	99	114	148	156	166
Offsets	42	177	225	228	231
Total Available Reductions	141	291	373	384	397

[97] *Updated Economic Analysis of California's Climate Change Scoping Plan: Staff Report to the Air Resources Board.* March 2010. http://www.arb.ca.gov/cc/scopingplan/economics-sp/updated-analysis/updated_sp_analysis.pdf.

[98] The estimated increase in prices from 2012 to 2020 is based on a growth rate of 5 percent per year rounded to the nearest dollar. The auction floor price and prices for the allowance reserve all increase under the proposed regulation by 5 percent per year, plus inflation.

The range of allowance prices used in this analysis is intended to illustrate the possible economic effects of several uncertainties. If the economy grows faster than currently forecast, or the other Scoping Plan measures achieve fewer cumulative reductions than expected, the cap-and-trade program would need to provide more reductions than previously estimated. On the other hand, if fewer offsets are available or the reductions estimated by Energy 2020 are more expensive than assumed, the cap-and-trade program would need to produce the same amount of reductions but would do so at higher allowance prices.

F. Energy 2020 Estimated Price and Expenditures Changes

The estimated impacts on the cost of using fossil-based energy in 2020 from the proposed cap-and-trade program are detailed in Table VIII-3. These estimates are based on full pass-through of allowance value to the consumers. While the analysis indicates that the cap-and-trade program will likely produce some increases in the cost of using energy, increased investments in efficiency and alternative fuels will also result in an overall decrease in fuel expenditures, as discussed below. The manner in which allowances are distributed is also likely to affect impacts. The potential effects of different allocation methods are discussed in Appendix J: Allowance Allocation and Appendix K: Leakage Analysis.

The change in energy costs induces consumers of energy to increase their energy efficiency. For example, a higher price on gasoline and diesel may induce some consumers to switch to smaller vehicles that are both more fuel-efficient but less expensive than the larger vehicles chosen without cap-and-trade. This analysis does not assume that economies of scale or learning effects cause the price of energy efficiency or delivering of alternative low-carbon fuels to decrease from those in the initial case, though such effects are likely.

Table VIII-3: Energy 2020 Estimated Cap-and-Trade Energy Price Changes in 2020

2020 Allowance Prices per Metric Ton of CO_2e:	Expected Price Range		Reserve Prices		
	$15	**$30**	**$60**	**$67**	**$75**
Residential					
Electric	1%	3%	6%	7%	9%
Natural Gas	7%	14%	28%	31%	35%
Oil	5%	10%	21%	23%	26%
LPG	2%	4%	9%	10%	11%
Commercial					
Electric	1%	3%	7%	8%	9%
Natural Gas	8%	16%	32%	36%	40%
Oil	6%	12%	24%	26%	29%
LPG	3%	5%	11%	12%	13%
Industrial					
Electric	1%	3%	8%	9%	11%
Natural Gas	6%	13%	26%	29%	32%
Coal	54%	107%	215%	240%	269%
Oil	4%	8%	17%	18%	21%
Transportation					
Gasoline	4%	8%	15%	17%	19%
Diesel	2%	4%	9%	10%	11%

Price changes reflect only the contribution of cap-and-trade and do not reflect changes from other AB 32 policies.

Table VIII-4: Energy 2020 Estimated 2020 Changes in Annualized Expenditures from Cap-and-Trade ($[2007]Millions)

details the estimated 2020 changes in investment and fuel expenditures induced by the cap-and-trade program. A more detailed breakdown of expenditures is provided in Appendix N: Supporting Documentation for the Economic Analysis. The investments in devices are annualized using a 5 percent real capital recovery factor over the life of the equipment. The fuel expenditures do not reflect the allowance value. At the prices modeled, the annual allowance value could be an additional $5 to $25 billion in 2020. The allowance value represents a transfer of income from among sectors of the economy. The allowance value is accounted for separately from the expenditures in the economy-wide analysis by increasing prices in the E-DRAM model.

The total cost estimates include both the change in fuel expenditures and the change in investment costs. These cost estimates become the inputs for the E-DRAM model to estimate the economy-wide impacts of the cap-and-trade program. As seen in Table VIII-4, rising energy costs drive purchases of devices of greater efficiency, which are generally more expensive at the outset. However

the increase in fuel savings offsets much of this expenditure. As a result, the net change in expenditures remains fairly constant over the range of prices.

Table VIII-4: Energy 2020 Estimated 2020 Changes in Annualized Expenditures from Cap-and-Trade ($[2007]Millions)

2020 Allowance Prices per Metric Ton of CO_2e:	Expected Price Range		Reserve Prices		
	$15	**$30**	**$60**	**$67**	**$75**
Device Investment	$3,359	$3,472	$3,709	$3,770	$3,847
Process Investment	$52	$93	$170	$187	$206
Operating and Maintenance	$1,007	$1,073	$1,203	$1,232	$1,266
Fuel Expenditures*	($2,874)	($3,245)	($3,944)	($4,102)	($4,286)
Total	$1,544	$1,393	$1,138	$1,086	$1,034
2020–2012 Total Change	$5,069	$4,530	$3,584	$3,390	$3,185
	Percent Change from No Policy Case				
Device Investment	1.8%	1.8%	1.9%	2.0%	2.0%
Process Investment	0.0%	0.0%	0.1%	0.1%	0.1%
Operating and Maintenance	11.9%	12.6%	14.2%	14.5%	14.9%
Fuel Expenditures	-1.9%	-2.1%	-2.6%	-2.7%	-2.8%
Total	0.2%	0.2%	0.2%	0.2%	0.2%
2020–2012 Total Change	0.1%	0.1%	0.1%	0.1%	0.1%

*Fuel expenditures do not include allowance value.

G. Economy-Wide Impacts from the Cap-and-Trade Program

To assess the economy-wide effects of the cap-and-trade program, the estimated allowance price and the expenditure changes and offset expenditures are used as inputs to the E-DRAM model. A model such as E-DRAM is not meant to predict which sectors may experience increased growth because of new opportunities brought on by limiting GHG emissions, such as those that design or manufacture renewable technologies, or to predict the creation and growth of jobs in sectors driven by the production of cleaner and more efficient technologies. Because E-DRAM is based on historical data, the economy and the way the economy uses inputs to production such as energy or labor looks very similar in the future as it does today, only larger.

The results shown in Table VII-5 use the costs presented in Table VIII-5 and assume that all allowance value is recycled as income to California consumers. Allowance value may be redirected to a number of different uses. In E-DRAM, the manner in which allowance value is redistributed has a greater effect on the impact to specific groups and less of an effect at the state level, as long as the value remains in-state. The 2020 state-level impacts are presented in Table VIII-5.

These results provide insight into the potential range of impacts that the cap-and-trade program could have on the California economy. The estimated impacts show relatively small changes in economic growth when compared to growth otherwise expected over 2007 to 2020. The Reference case forecast used in the E-DRAM model assumes that California gross state product will grow by about 35 percent between 2007 and 2020. With imposition of the cap-and-trade program, the annual average growth in gross state product is reduced by only about one-tenths of 1 percent, under the expected allowance price assumption. These results indicate that at the state level, the cap-and-trade program does not have a significant adverse impact on California business or consumers as a whole, and that the rate of job creation under the proposed regulation is very similar to currently projected rates.

Table VIII-5: E-DRAM Estimated 2020 Economic Impacts of the Cap-and-Trade Program $(2007)

2020 Allowance Prices per Metric Ton of CO_2e:	2007	2020 No Cap and Trade	Expected Price Range		Reserve Prices		
			$15	$30	$60	$67	$75
Gross State Product ($ Billions)	$1,845	$2,498	$2,495	$2,491	$2,484	$2,482	$2,481
Personal Income ($ Billions)	$1,492	$2,024	$2,021	$2,019	$2,015	$2,014	$2,013
Income Per Capita ($ Thousands)	$39.3	$46.0	$46.0	$46.0	$45.9	$45.9	$45.9
Labor Demand (Millions)	16.35	18.40	18.34	18.30	18.22	18.20	18.18
			Percent Change from No Policy Case				
Gross State Product	-	-	-0.1%	-0.3%	-0.6%	-0.6%	-0.7%
Personal Income	-	-	-0.1%	-0.2%	-0.5%	-0.5%	-0.6%
Income Per Capita	-	-	0.0%	-0.1%	-0.2%	-0.2%	-0.2%
Labor Demand	-	-	-0.3%	-0.6%	-1.0%	-1.1%	-1.2%
		Annual Average Growth 2007–2020					
Gross State Product	-	2.4%	2.3%	2.3%	2.3%	2.3%	2.3%
Personal Income	-	2.4%	2.4%	2.4%	2.3%	2.3%	2.3%
Income Per Capita	-	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%
Labor Demand	-	0.9%	0.9%	0.9%	0.8%	0.8%	0.8%

It is not possible to verify all of the expenditure data used in Energy 2020, so staff conducted a sensitivity analysis to evaluate the potential for expenditures to be greater than estimated by the model. In this sensitivity case, the change in device investment, process investment, and operating and maintenance expenditures used in the previous example (Table VIII-4) were doubled. Since the change in investment and operating and maintenance expenditures for

passenger cars and trucks were negative in the initial analysis, reflecting the purchase of smaller less expensive vehicles, these values were set to zero.

The 2020 state-level impacts for the cost sensitivity are presented in Table VIII-6. The effect of doubling all expenditures except for fuel expenditures results in slightly greater economic impacts, primarily at the lower allowance prices. At higher allowance prices, the estimated impacts are driven more by the allowance value and less by the expenditures.

Table VIII-6: E-DRAM Estimated 2020 Economic Impacts of the Cap-and-Trade Program With Device, Process, and Operating and Maintenance Expenditures Doubled $(2007)

2020 Allowance Prices per Metric Ton of CO_2e:	2007	2020 No Cap-and-Trade	Expected Price Range		Reserve Prices		
			$15	$30	$60	$67	$75
Gross State Product ($ Billions)	$1,845	$2,498	$2,488	$2,484	$2,476	$2,474	$2,472
Personal Income ($ Billions)	$1,492	$2,024	$2,016	$2,013	$2,008	$2,007	$2,005
Income Per Capita ($ Thousands)	$39.3	$46.0	$45.9	$45.9	$45.8	$45.8	$45.8
Labor Demand (Millions)	16.35	18.40	18.31	18.27	18.18	18.16	18.13
			Percent Change from No Policy Case				
Gross State Product	-	-	-0.4%	-0.6%	-0.9%	-1.0%	-1.0%
Personal Income	-	-	-0.4%	-0.5%	-0.8%	-0.9%	-0.9%
Income Per Capita	-	-	-0.2%	-0.3%	-0.4%	-0.4%	-0.4%
Labor Demand	-	-	-0.5%	-0.7%	-1.2%	-1.3%	-1.5%
		Annual Average Growth 2007–2020					
Gross State Product	-	2.4%	2.3%	2.3%	2.3%	2.3%	2.3%
Personal Income	-	2.4%	2.3%	2.3%	2.3%	2.3%	2.3%
Income Per Capita	-	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%
Labor Demand	-	0.9%	0.9%	0.9%	0.8%	0.8%	0.8%

H. Cost-Effectiveness

This section discusses the cost-effectiveness of the proposed regulation. AB 32 requires the Board to consider cost-effectiveness of each GHG control measure it adopts. The values must be expressed in dollars per metric ton of CO_2e emissions reduced. AB 32 does not specify what costs should be included in these calculations nor does it provide criteria to assess if a regulation is cost-effective, beyond directing ARB to adopt regulations “to achieve the maximum technologically feasible and cost-effective reductions…in furtherance of achieving the statewide greenhouse gas emissions limit” (HSC §38562[a]).

A cap-and-trade program is a market-based mechanism that helps establish a common marginal cost of reductions (i.e., a common cost of the next action to be taken to reduce emissions) across all covered entities by providing for the trading of allowances. This common cost will encourage those who can reduce emissions most cheaply to do so, achieving the pollution reduction at the lowest cost to society. The measure of cost-effectiveness is therefore the estimated allowance price.

As previously discussed, many factors influence the allowance price, making it impossible to predict with precision. Rather than attempting to predict a specific price, this analysis has used a series of time profiles based on reasonable estimates of technological opportunities and behavioral responses under various scenarios. The results show that the needed reductions could be achieved at allowance prices in 2020 in the range of $15 to $30 per metric ton. Should likely prices not prove accurate, the program has established price containment measures that would come into effect to mitigate excessively high prices. Table VIII-7 shows the cost-effectiveness of the proposed cap-and-trade regulation in 2020 for the expected range of prices.

Table VIII-7: Cost-Effectiveness of the Proposed Cap-and-Trade Regulation in 2020

($ per Metric Ton of CO_2e)	**Expected Price Range**
Allowance Price in 2020	$15–$30

I. Potential Impacts on Small Business

Very few small businesses have enough emissions to be regulated directly under the cap-and-trade program. Most foreseeable small business impacts will result from changes in energy expenditures. Therefore, this analysis focuses on how implementation of the program could affect expenditures that small businesses make on electricity and natural gas and how such shifts could affect their profitability. ARB will continue to seek ways to measure impacts and report to the Board as the program is implemented.

Under a contract with ARB, Dun and Bradstreet (D&B) provided ARB with data from a statistical data model that estimates the portion of revenue that businesses spend on energy. The model is based on D&B marketing files from approximately 17 million businesses nationwide including over 2.1 million in California. The annual spending on electricity and natural gas was calculated for affected businesses as follows:

- D&B collected data on monthly electricity and natural gas bills for approximately 628,000 businesses nationally from 18 utilities nationwide, including two California utilities, from April 2007 to March 2008.

- Annual spending on electricity and natural gas were calculated for these businesses by summing the monthly bills.

- Of these 628,000 businesses, D&B has revenue data for 210,000.

- Revenue data were available for a greater number of large businesses in the sample. Thus, the sample distribution was adjusted to represent the true universal distribution of the D&B database of 17 million businesses.

Staff analyzed the California industries with the greatest expenditures on retail electricity and natural gas as a percentage of their revenue. These industries are primarily service-related and serve local markets. The price changes displayed in Table VIII-3 were used to estimate the change in the share of revenue spent on energy. This estimate assumes that these industries make no changes in their energy use in response to the price changes. Table VIII-8 reports the results. Additional detail on this analysis is provided in Appendix N: Supporting Documentation for the Economic Analysis.

Under the likely range of allowance prices, most sectors experience less than a 2 percent change in the share of revenue spent on energy. Even at the highest reserve price, most sectors experience less than a 4 percent change. The majority of the listed business categories are those that serve local markets such as trailer parks and camps, hotels, barbershops, bakeries, etc. Out-of-state businesses cannot serve these local markets. As a result, most California small businesses are not likely to face competitiveness issues relative to out-of-state businesses.

The potential impact estimated here may be high because small businesses, like any other businesses, are likely to respond to the increase in energy prices by investing in energy-efficient technologies to achieve energy savings. In light of many public incentive programs available, most small businesses should not have difficulties in obtaining the required capital for investment in energy-efficient technologies. The savings from electricity efficiency improvements are likely to partially offset or mitigate the impact of any increase in electricity prices and could mean decreased energy bills even in the face of increased prices.

J. Potential Impacts on California Business Competitiveness

ARB has closely analyzed the potential impact of a cap-and-trade program on California business competitiveness, and the proposed regulation includes methods to reduce competitiveness loss though the allocation process, such as through output-based updated free allocation. The proposed allowance distribution system is designed to reduce the potential for competitive losses to California business such that there should be minimal impact. The allocation system is discussed in Appendix J: Allowance Allocation and Appendix K: Leakage Analysis.

Additionally, California is working closely with our partners in the Western Climate Initiative (WCI) and with the federal government to implement a larger climate change program to further reduce the potential for competitiveness loss that could arise from the implementation of a California-only cap-and-trade program. The proposed regulation has been designed to facilitate future linkage with other cap-and-trade programs.

Table VIII-8: Range of Impact on Average Percentage of Revenue Spent on Energy

		Energy Expenditures/ Revenue (without program)	Change in Energy Expenditures/ Revenue at Given Cap-and-Trade Program Allowance Prices (2020 Allowance Prices per Metric Ton of CO_2e)				
			Expected Price Range		Reserve Prices		
SIC	**Business Category**		**$15**	**$30**	**$60**	**$67**	**$75**
7215	Coin-Operated Laundries and Cleaning	22.1%	1.4%	2.7%	5.6%	6.2%	7.0%
7219	Laundry and Garment Services	15.3%	0.8%	1.5%	3.2%	3.6%	4.0%
8641	Civic and Social Associations	14.4%	0.6%	1.2%	2.5%	2.8%	3.1%
7021	Rooming and Boarding Houses	14.3%	0.6%	1.3%	2.7%	3.1%	3.5%
7041	Membership-Basis Organization Hotels	13.7%	0.6%	1.3%	2.7%	3.0%	3.4%
7033	Trailer Parks and Campsites	13.3%	0.5%	1.1%	2.2%	2.5%	2.8%
7241	Barber Shops	11.9%	0.5%	1.0%	2.1%	2.4%	2.7%
6719	Holding Companies	11.8%	0.5%	1.0%	2.1%	2.4%	2.7%
7011	Hotels and Motels	11.3%	0.5%	1.0%	2.0%	2.3%	2.6%
7032	Sporting and Recreational Camps	11.0%	0.3%	0.7%	1.5%	1.7%	1.9%
8351	Child Day-Care Services	10.3%	0.4%	0.9%	1.8%	2.1%	2.3%
8231	Libraries	10.2%	0.4%	0.7%	1.6%	1.7%	2.0%
5461	Retail Bakeries	10.1%	0.3%	0.7%	1.5%	1.7%	1.9%
5813	Drinking Places	10.0%	0.4%	0.8%	1.6%	1.8%	2.0%
7231	Beauty Shops	9.9%	0.4%	0.8%	1.6%	1.8%	2.1%
8361	Residential Care	8.9%	0.3%	0.7%	1.4%	1.6%	1.8%
4941	Water Supply	8.7%	0.3%	0.6%	1.3%	1.5%	1.6%
7217	Carpet and Upholstery Cleaning	8.0%	0.2%	0.5%	1.0%	1.2%	1.3%
5441	Candy, Nut, and Confectionery Stores	7.8%	0.2%	0.5%	1.0%	1.1%	1.3%

SIC = Standard Industrial Classification code

K. Potential Impacts on Individual Consumers

Individual consumers will not be directly affected by the cap-and-trade program, but will see indirect effects from changes in energy prices. Households that use less carbon (directly via energy consumption and indirectly via consumption of goods and services that are produced or distributed using energy) will be less affected than those that use more carbon. Assessing how these price changes affect consumer well-being depends on whether and how income from auction of allowances is returned to consumers. Further discussion on the uses of allowance value for compensation of households can be found in Appendix J: Allowance Allocation.

Table VIII-9: Energy 2020 Estimated 2020 Changes in Residential Annualized Expenditures

	Expected Price Range		Reserve Prices		
2020 Allowance Prices per Metric Ton of CO_2e:	**$15**	**$30**	**$60**	**$67**	**$75**
Residential	**$(2007)Millions**				
Investment* and O+M	1,484	1,643	1,960	2,034	2,122
Fuel**	(337)	(411)	(547)	(577)	(612)
Total	1,146	1,232	1,413	1,457	1,510
Passenger					
Investment* and O+M	(106)	(192)	(363)	(403)	(448)
Fuel**	(484)	(558)	(700)	(732)	(768)
Total	(591)	(751)	(1,063)	(1,135)	(1,216)
	Percent Change from No Policy Case				
Residential					
Investment* and O+M	0.8%	0.9%	1.0%	1.1%	1.1%
Fuel**	-1.4%	-1.7%	-2.3%	-2.4%	-2.6%
Total	0.5%	0.6%	0.7%	0.7%	0.7%
Passenger					
Investment* and O+M	-0.1%	-0.1%	-0.2%	-0.3%	-0.3%
Fuel**	-0.8%	-0.9%	-1.2%	-1.2%	-1.3%
Total	-0.3%	-0.3%	-0.5%	-0.5%	-0.6%

*Includes investment in devices (mechanical end-uses of energy, such as lighting, space heating or air conditioning) and process investment (e.g., building shell improvements).
**Fuel expenditures do not include allowance value.

Table VIII-9 details the estimated 2020 changes in investment, operating, and maintenance and fuel expenditures for the residential and passenger sectors

resulting from the cap-and-trade program.[99] As discussed earlier, devices are mechanical end-uses of energy, such as lighting, space heating, or air conditioning while process reflects building shell improvements. The fuel expenditures do not reflect the allowance value. The combined share of the allowance value from the Residential and Passenger sectors could be more than 40 percent. The allowance value is treated separately from the expenditures in the economy-wide analysis.

Under any of the prices analyzed, consumer residential net spending in 2020 increases by just over one-half of a percent. Passenger investment decreases, reflecting some price-induced shifts to smaller, less-expensive vehicles.

L. Potential Cost to Local, State, and Federal Agencies

The proposed regulation would impose direct requirements on local government agencies, specifically municipal utilities, that are directly responsible for emitting over 25,000 $MTCO_2e$ per year. However, municipal utilities should be able to use their existing administrative mechanisms to pass on the fee costs to their customers. In this case there would be no net fiscal impact. State and Local governments will face higher prices for products they purchase as businesses pass on costs.

The proposed regulation would impose direct compliance requirements on the State Department of Water Resources, which directly imports power from a coal-fired plant with which it has an ownership contract through 2013. However, there would be no net fiscal impact if DWR is able to use its existing administrative mechanisms to pass the fee costs on to customers. Based on 2006 electricity imports, DWR would incur direct costs of about $19.5 million during 2012. ARB understands that the DWR contract for Reid Gardner power plant expires in 2013, so DWR should owe no costs after the contract expires.

The proposed regulation will impose direct compliance requirements on several state universities. Purchase of allowances could be about $10 million.

Table VIII-10 presents an estimate of the potential allowance costs for government agencies in California.

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[99] The passenger sector includes passenger cars and trucks, and also contains expenditures from commercial passenger transit, such as buses or trains.

Table VIII-10: Government Annual Allowance Purchase Cost

$(2007)Millions	Initial	Ongoing
University of California	$7.8	$7.8
California State University	$2.3	$2.3
DWR (Reid Gardner)*	$19.5	$0.0
Total	$29.7	$10.2

*DWR contract expires in 2013.

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IX SUMMARY AND RATIONALE FOR PROPOSED REGULATION

The proposed cap-and-trade Regulation is designed to reduce emissions of greenhouse gases (GHG) by establishing a cap covering about 85 percent of the State's GHG emissions and allow trading to ensure cost-effective emissions reductions. This section discusses the requirements and rationale for each provision of the proposed regulation.

Subarticle 1. Table of Contents.

Section 95800. Table of Contents.

Summary of Section 95800.

This section provides the table of contents for the regulation.

Rationale for Section 95800.

This section is necessary to provide the structure of the regulation and help guide the public through the regulatory provisions.

Subarticle 2. Purpose and Definitions.

Section 95801. Purpose.

Summary of Section 95801.

This section states the purpose of the regulations. Specifically, the purpose of this regulation is to reduce greenhouse gas emissions by establishing an aggregate statewide limit on GHG emissions from sources specified in this regulation.

Rationale for Section 95801.

This section is needed to ensure that the regulated public and other market participants understand that this regulation will reduce emissions to help achieve the goals of AB 32.

Section 95802. Definitions.

Summary of Section 95802.

This section proposes definitions to the terms used in the regulation.

Rationale for Section 95802.

It is necessary that ARB defines its terms as they apply to the California cap-and-trade program. Most of these terms are used in other articles and titles in the California Code of Regulations, Government Code sections or statutes, and it is

necessary that ARB be consistent with existing definitions to the extent that they apply to this regulation.

Subarticle 3. Applicability.

Section 95810. Covered Gases.

Summary of Section 95810.

This section states the greenhouse gases (GHGs) that are required to be covered in AB 32.

Rationale for Section 95810.

This section is required to identify the GHGs to which this regulation would apply. These gases were included because they are identified in AB 32.

Section 95811. Covered Entities.

Summary of Section 95811(a).

Subsection (a) of the proposed regulation identifies the operator of a facility within California that has a compliance obligation as stated in subsections (a)(1) through (a)(12).

Rationale for Section 95811(a).

This provision is required to identify the industrial processes or operations to which this regulation would apply.

Summary of Section 95811(a)(1), Cement Production.

Subsection (a)(1) proposes to cover annual stationary combustion and process emissions from cement production.

Rationale for Section 95811(a)(1).

It is necessary to include these producers because cement production emissions represent a large share of California stationary source greenhouse gas emissions.

Summary of Section 95811(a)(2), Cogeneration.

Subsection (a)(2) proposes to cover emissions from electricity and thermal output generated at cogeneration units.

Rationale for Section 95811(a)(2).

It is necessary to include emissions from cogeneration units because these units are widely used by industries and represent a large share of California GHG emissions. The use is expected to grow and the efficiency is expected to improve.

Summary of Section 95811(a)(3), Glass Production.

Subsection (a)(3) proposes to cover annual stationary combustion and process emissions from glass production.

Rationale for Section 95811(a)(3).

It is necessary to include emissions from glass production because the process is highly emissions intensive and represents California GHG emissions.

Summary of Section 95811(a)(4), Hydrogen Production.

Subsection (a)(4) proposes to cover annual emissions associated with hydrogen production processes, flares, and destruction devices.

Rationale for Section 95811(a)(4).

It is necessary to include emissions from hydrogen production because the process is highly emissions intensive and represents California GHG emissions.

Summary of Section 95811(a)(5), Iron and Steel Production.

Subsection (a)(5) proposes to cover annual combustion and process emissions associated with iron and steel production.

Rationale for Section 95811(a)(5).

It is necessary to include emissions from iron and steel production because the process is emissions intensive and represents California GHG emissions.

Summary of Section 95811(a)(6), Lime Manufacturing.

Subsection (a)(6) proposes to cover annual combustion and process emissions associated with quick lime production.

Rationale for Section 95811(a)(6).

It is necessary to include emissions from lime production because the process is emissions intensive and represents California GHG emissions.

Summary of Section 95811(a)(7), Nitric Acid Production.

Subsection (a)(7) proposes to cover annual N_2O mass emissions from each nitric acid train.

Rationale for Section 95811(a)(7).

It is necessary to include emissions from nitric acid production because it is very emissions intensive and represents California GHG emissions.

Summary of Section 95811(a)(8), Oil and Natural Gas Systems.

Subsection (a)(8) proposes to cover stationary and process sources of the following: offshore petroleum and natural gas production facilities, onshore natural gas processing facilities, onshore natural gas transmission compression facilities, underground natural gas storage facilities, liquefied natural gas storage facilities, and liquefied natural gas import and export facilities.

Rationale for Section 95811(a)(8).

It is necessary to cover emissions from oil and natural gas systems as identified in this subsection because production activities are managed best at the state level, where regional and local conditions are understood and where regulations can be tailored to fit the needs of the local environment. Natural gas systems are proposed as additions to those process sources included in the current ARB MRR, including cement production, power plants, petroleum refineries, and hydrogen plants. The ARB staff proposal would affect all petroleum and natural production operations in California where an entity's emissions equal or exceed the cap-and-trade threshold.

Summary of Section 95811(a)(9), Petroleum Refining.

Subsection (a)(9) proposes to cover emissions from calciners, cat cracking, other cat regeneration, process vents, asphalt production, sulfur recovery, flares, and destruction devices.

Rationale for Section 95811(a)(9).

It is necessary to include emissions from petroleum refineries because refining processes emissions represent a large share of California stationary source greenhouse gas emissions and are emissions intensive.

Summary of Section 95811(a)(10), Pulp and Paper Manufacturing.

Subsection (a)(10) proposes to cover annual emissions from a process in the manufacture of paper and paperboard, which can be split into three steps: pulp making, pulp processing, and paper/paperboard production.

Rationale for Section 95811(a)(10).

It is necessary to include emissions from pulp and paper because during the manufacturing process, the individual fibers formed into paper sheets (called pulp) create GHG emissions.

Summary of Section 95811(a)(11), Self-Generation of Electricity.

Subsection (a)(11) proposes to cover emissions from electricity generated for consumption solely onsite.

Rationale for Section 95811(a)(11).

It is necessary to include emissions from electricity self-generation because it is a significant source of emissions that is not captured elsewhere.

Summary of Section 95811(a)(12), Stationary Combustion.

Subsection (a)(12) proposes to cover annual stationary combustion emissions that have not been captured under subsection (a)(1) through (a)(11).

Rationale for Section 95811(a)(12).

It is necessary to include emissions from stationary combustion because it captures steam-producing units that combust municipal solid waste or solid biomass fuels, and it generates GHGs.

Summary of Section 95811(b), First Deliverers of Electricity.

Subsection (b) proposes to cover first deliverers of electricity delivered to the California electricity transmission and distribution system.

Rationale for Section 95811(b).

It is necessary to include electricity deliverers because they represent a significant amount of emissions from relatively few sources and accurate emissions reporting and monitoring methods exist for these types of sources.

Summary of Section 95811(b)(1), Electricity Generating Facilities.

Subsection (b)(1) proposes to cover operators of electricity generating facilities in California that deliver electricity to the California electricity transmission and distribution system.

Rationale for Section 95811(b)(1).

It is necessary to include emissions from all electricity consumed in the State according to AB 32 (HSC 38530(b)(2)).

Summary of Section 95811(b)(2), Electricity Importers.

Subsection (b)(2) proposes to cover electric power entities that import electricity.

Rationale for Section 95811(b)(2).

It is necessary to include emissions from electric power entities, California retail providers, multijurisdictional retail providers, marketers, Western Area Power Administration (WAPA), and California Department of Water Resources (DWR) because emissions from this sector account for a large share of California GHG emissions.

Summary of Section 95811(c), Suppliers of Natural Gas.

Subsection (c) proposes to include emissions associated with the distribution or use of natural gas in California.

Rationale for Section 95811(c).

It is necessary to include emissions from distributers and users of natural gas because combustion of natural gas is responsible for 26 percent of GHG emissions in California.

Summary of Section 95811(c)(1), Public Utility Gas Corporation.

Subsection (c)(1) proposes to include combustion emissions associated with public utility gas corporations operating in California.

Rationale for Section 95811(c)(1).

It is necessary to include combustion emissions from public utility gas corporations because it is at the most upstream point possible for natural gas consumption. LPG consignees who import LPG into California and natural gas liquid fractionators are required to report emissions for LPG, to be consistent with the desire of cap-and-trade to include suppliers of LPG as covered entities. Local Distribution Companies (LDC), which are divided into two categories in California—public utility gas corporations and publicly owned natural gas utilities—are required to report

Summary of Section 95811(c)(2), Publicly Owned Natural Gas Utilities.

Subsection (c)(2) proposes to include combustion emissions associated with publicly owned natural gas utilities operating in California.

Rationale for Section 95811(c)(2).

It is necessary to include combustion emissions from publicly owned natural gas utilities because it captures emissions at the most upstream point possible for natural gas consumption.

Summary of Section 95811(c)(3), Operators of Intrastate Pipelines.

Subsection (c)(3) proposes to include combustion emissions associated with operators of an intrastate pipeline, not included in subsections (c)(1) or (c)(2), that distributes natural gas directly to end users.

Rationale for Section 95811(c)(3).

It is necessary to include combustion emissions from every natural gas producer or consumer at the most upstream point possible for intrastate pipeline owners and operators that distribute natural gas for use in California.

Summary of Section 95811(d), Suppliers of RBOB and Distillate Fuel Oil.

Subsection (d) proposes to include offsite combustion emissions that result from petroleum products produced in or imported into California. Suppliers of these fuels include a position holder of one or more of the following fuels, or an enterer that imports one or more of the following fuels into California: reformulated blendstock for oxygenate blending (RBOB), Distillate Fuel Oil No. 1, and Distillate Fuel Oil No. 2.

Rationale for Section 95811(d).

It is necessary to include emissions that result from combustion of petroleum products that are mainly used for transportation purposes because these fuels result in a large share of the State's GHG emissions.

Summary of Section 95811(d)(1), RBOB.

Subsection (d)(1) proposes to include tailpipe combustion emissions that result from blended fuels that contain RBOB produced in or imported into California. Suppliers of RBOB include a position holder or an enterer that imports RBOB into California.

Rationale for Section 95811(d)(1).

It is necessary to include tailpipe combustion emissions from RBOB because they account for a large share of GHG emissions in California.

Summary of Section 95811(d)(2), Distillate Fuel Oil No. 1.

Subsection (d)(2) proposes to include offsite combustion emissions that result from Distillate Fuel Oil No. 1 produced in or imported into California. Suppliers of this fuel include a position holder or an enterer that produces or imports Distillate Fuel Oil No. 1. The first point of receipt at the terminal is the actual point of regulation.

Rationale for Section 95811(d)(2).

It is necessary to include tailpipe combustion emissions from Distillate Fuel Oil No. 1 because they account for a large share of GHG emissions in California.

Summary of Section 95811(d)(3), Distillate Fuel Oil No. 2.

Subsection (d)(3) proposes to include offsite combustion emissions that result from Distillate Fuel Oil No. 2 produced in or imported into California. Suppliers of this fuel include a position holder or an enterer that produces or imports Distillate Fuel Oil No. 2. The first point of receipt at the terminal is the actual point of regulation.

Rationale for Section 95811(d)(3).

It is necessary to include tailpipe combustion emissions from Distillate Fuel Oil No. 2 because they account for a large share of GHG emissions in California.

Summary of Section 95811(e), Suppliers of Liquefied Petroleum Gas.

Subsection (e) proposes to include combustion emissions that result from liquefied petroleum gas produced in or imported into California. Suppliers include an operator of a refinery that produces liquid petroleum gas in California, an operator of a facility that fractionates natural gas liquids to produce liquid petroleum gas, and an importer of liquefied petroleum into California.

Rationale for Section 95811(e).

It is necessary to include emissions from suppliers of liquefied petroleum gas because these fuels result in a large share of the State's GHG emissions, when completely combusted.

Summary of Section 95811(e)(1) through (e)(3).

Subsections (e)(1) through (e)(3)propose to include combustion emissions resulting from liquid petroleum gas produced in or imported into California. Suppliers include an operator of a refinery that produces liquid petroleum gas in California, an operator of a facility that fractionates natural gas liquids to produce liquid petroleum gas, and an importer of liquefied petroleum into California.

Rationale for Section 95811(e)(1) through (e)(3).

It is necessary to include emissions from suppliers of liquefied petroleum gas because these fuels result in a large share of the State's GHG emissions, when completely combusted. The proposed revised regulation will affect all suppliers of natural gas, as well as consignees who import liquefied petroleum gas (LPG) into the State of California where annual amounts of supplied or imported fuel, when completely combusted or oxidized, equals or exceeds the threshold.

Summary of Section 95811 (f).

Section 95811(f) specifically includes CO_2 emissions from blended fuels.

Rationale for Section 95811 (f).

It is necessary to include emissions from suppliers of blended fuels because these fuels result in a large share of the state's GHG emissions.

Summary of Section 95811(g), Suppliers of Carbon Dioxide.

Subsection (f) proposes to include CO_2 emissions that result from the complete release of the product that they place into commerce. Suppliers of CO_2 must report the mass of CO_2 captured from production process units and extracted from production wells, and the mass of CO_2 that is imported and exported.

Rationale for Section 95811(g).

It is necessary to include emissions from suppliers of carbon dioxide because these products placed into commerce generate CO_2 which results in emissions of GHG.

Section 95812. Inclusion of Thresholds for Covered Entities.

Summary of Section 95812(a).

Subsection (a) establishes the inclusion thresholds for emissions associated with each covered entity based on its reported GHG emissions to U.S. EPA for the data year 2010. If an entity's 2010 reported emissions exceed the inclusion threshold, it will be classified as a covered entity when this regulation becomes effective. The inclusion threshold for each covered entity is based on the subset of GHG emissions that generate a compliance obligation for that entity.

Rationale for Section 95812(a).

This subsection is necessary to establish what the emissions threshold is based on and derived from.

Summary of Section 95812(b).

Subsection 95812(b) proposes that if an entity's aggregated, reported, or verified emissions in any data year from 2008 to 2010 equals or exceeds the thresholds in subsequent sections, the entity will be classified as a covered entity as of January 1, 2012.

Rationale for Section 95812(b).

This subsection is necessary to establish under what circumstances an entity can trigger the inclusion threshold for covered entities.

Summary of Section 95812(b)(1), Operators of Facilities.

Subsection (b)(1) establishes the inclusion threshold for emissions that result from facilities with operations and processes identified in section 95811(a). In their 2008–2009 program design recommendations, the WCI Partners expressed the desire to monitor what happens beneath the agreed-upon cap-and-trade threshold of 25,000 metric tons carbon dioxide equivalent ($MTCO_2e$) (WCI Design Recommendations 2009).[100] The Partners adopted a reporting threshold of 10,000 $MTCO_2e$, to enable monitoring for leakage of emissions from sources below the cap threshold and to assess whether the cap threshold was appropriately set. The Partners wanted to be able to recommend subsequent action if the cap threshold had unanticipated economic or emissions consequences, and the lower reporting threshold would inform their review of market impacts. Thus, the threshold is set at 25,000 $MTCO_2e$ for the data year 2010 and every year thereafter.

Rationale for Section 95812(b)(1).

This inclusion threshold captures emissions from facilities with the largest amount of emissions without including small facilities.

Summary of Section 95812(b)(2), First Deliverers of Electricity.

Subsection (b)(2) establishes the inclusion threshold for emissions that result from first deliverers of electricity.

Rationale for Section 95812(b)(2).

This subsection is necessary so first deliverers of electricity know the threshold they must exceed to be covered under the program.

Summary of Section 95812(b)(2)(A), Electricity Generating Facilities.

Subsection (a)(2)(A) proposes to include a threshold for emissions associated with in-state electricity generating facilities based on annual emissions from facilities at which the electricity originated. The threshold is set at 25,000 $MTCO_2e$ for the data year 2010 and every year thereafter.

Rationale for Section 95812(b)(2)(A).

This inclusion threshold captures emissions from facilities with the largest amount of emissions without including small facilities.

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[100] Western Climate Initiative (2008): Design Recommendations for the WCI Regional Cap-and-Trade Program. http://www.westernclimateinitiative.org/component/remosiory/general/design-recommendations/Design-Recommendations-for-the-WCI-Regional-Cap-and-Trade-Program/

Summary of Section 95812(b)(2)(B), Electricity Importers of Specified Electricity.

Subsection (b)(2)(B) proposes to include emissions that result from generating electricity imported from a specified facility out-of-state if that facility's annual GHG emissions are equal to or greater than 25,000 $MTCO_2e$ for the data year 2010 and every year thereafter.

Rationale for Section 95812(b)(2)(B).

This provision is necessary to set this emissions threshold to be comparable with in-state electricity generators, to comply with the interstate commerce clause.

Summary of Section 95812(b)(2)(C), Electricity Importers of Unspecified Electricity.

Subsection (b)(2)(C) proposes to include all emissions that result from generating electricity imported from unspecified sources out-of-state, meaning that a covered entity must account for all emissions from all unspecified electricity imports.

Rationale for Section 95812(b)(2)(C).

This provision is necessary to include all emissions that result from unspecified electricity imports because ARB cannot assign emissions to an unspecified facility.

Summary of Section 95812(c).

Subsection (c) proposes to establish a threshold for carbon dioxide suppliers. The threshold is 25,000 $MTCO_2e$ per year.

Rationale for Section 95812(c).

This provision is necessary because it proposes the threshold for carbon dioxide suppliers. The threshold is based on the sum of its imported and exported carbon dioxide into and out of California.

Summary of Section 95812(d).

Subsection (d) proposes to establish a threshold for emissions that result from the combustion of fuels produced or imported from in California.

Rationale for Section 95812(d).

This provision is necessary because it proposes the emissions threshold that will trigger an entity to be classified as a covered entity as of January 1, 2015.

Summary of Section 95812(d)(1), Fuel Suppliers.

Subsection (d)(1) proposes to establish under what circumstances fuel suppliers may trigger the inclusion threshold before coverage in 2015.

Rationale for Section 95812(d)(1).

This inclusion threshold captures emissions associated with suppliers with the largest amount of emissions without including small suppliers.

Summary of Section 95812(d)(2), Electricity Importers.

Subsection (d)(2) proposes to establish the threshold for an electricity importer of specified or unspecified source of electricity, which is zero.

Rationale for Section 95812(d)(2).

This inclusion threshold is necessary because it proposes the emissions threshold that will trigger an entity to be classified as a covered entity as of January 1, 2015.

Summary of Section 95812(e), Effect of Reduced Emissions on an Entity's Compliance Obligation.

Subsection (e) proposes the conditions for a covered entity to avoid a compliance obligation for a specified compliance period.

Rationale for Section 95812(e).

An entity that reduces its emissions, becomes more efficient, or produces less should not hold a compliance obligation for that compliance period, because it did not exceed the inclusion threshold for any year during that compliance period.

Summary of Section 95812(e)(1).

Subsection (e)(1) proposes to identify an entity whose reported GHG emissions drop below its annual threshold for an entire compliance period and will not hold a compliance obligation for that compliance period.

Rationale for Section 95812 (e)(1).

It is necessary to identify the period of time for which an entity's reported emissions drop below its respective threshold, to identify for which compliance period the entity does not hold a compliance obligation.

Summary of Section 95812 (e)(2).

Subsection (e)(2) proposes to identify an entity whose processes and operations shut down permanently. A covered entity must fulfill its compliance obligations for that compliance period during which it shuts down and will not be subject to a compliance obligation for the following compliance period and any thereafter. A

reporter is not required to verify its emissions for the first full year of non-operation following a permanent shutdown.

Rationale for Section 95812 (e)(2).

An entity that shuts down its operation and no longer emits GHGs should not hold a compliance obligation for compliance periods subsequent to the one in which it shuts down, because it will no longer exceed the inclusion threshold in subsequent compliance periods because, by default, its emissions will be zero. This provision is included to prevent unnecessary financial burden of verification to reporters that shut down their operations.

Section 95813. Opt-In Covered Entities.

Summary of Section 95813(a).

Subsection (a) proposes to include the entities in the categories identified in section 95811 that do not meet the inclusion threshold of section 95812 to voluntarily become a covered entity.

Rationale for Section 95813(a).

This provision is included to incentivize entities to implement more efficient processes and technologies to reduce their associated emissions, to receive a higher number of direct allocations of allowances based on the product output-based benchmarking methodology.

Summary of Section 95813(b).

Subsection (b) requires entities to apply for approval by the Executive Officer to be approved as an opt-in covered entity.

Rationale for Section 95813(b).

This provision is necessary so ARB can determine if an entity meets the requirements set forth in subsection (a).

Summary of Section 95813(c).

Subsection (c) proposes that all opt-in covered entities are subject to all regulatory requirements that apply to covered entities, including reporting, verification, and compliance obligations.

Rationale for Section 95813(c).

This provision is necessary so ARB can assign a compliance obligation to opt-in covered entities, and maintain program intensity.

Summary of Section 95813(d).

Subsection (d) proposes to allow eligible opt-in covered entities to receive direct allocations of allowances.

Rationale for Section 95813(d).

This provision is included to incentivize entities to implement more efficient processes and technologies to reduce their associated emissions, to receive a higher amount of direct allocations of allowances based on the product output-based benchmarking methodology.

Summary of Section 95813(e).

Subsection (e) proposes that the inclusion of opt-in covered entities will not affect the California GHG allowances budgets established in Table 6-1 of the Regulation.

Rationale for Section 95813(e).

This provision is included because staff is uncertain of how many opt-in covered entities will apply for approval by the Executive Officer. The allowance budgets cannot be adjusted each time an opt-in covered entity is approved because the cap is set in the regulation to provide certainty to market participants of how many compliance instruments are available in all years of the program.

Summary of Section 95813(f).

Subsection (f) proposes that an opt-in covered entity could opt out of the program at the end of each compliance period only if it has fulfilled its compliance obligations or has returned to ARB an equivalent number of allowances it received through direct allocations in that compliance period.

Rationale for Section 95813(f).

Staff proposes that an opt-in covered entity can opt out of the program because its emissions are below the inclusion threshold, and it is not required to participate in the program in the first place. Staff proposes that an opt-in covered entity must stay in the program until its triennial surrender obligation is completed after the compliance period ends.

Section 95814. Voluntarily Associated Entities and Other Registered Participants.

Summary of Section 95814(a)(1).

Subsection (a)(1) proposes that an entity not identified as a covered entity or an opt-in covered entity could voluntarily register with the accounts administrator to become a Voluntary Associated Entity. These entities may acquire and hold California Compliance Instruments and participate in auctions.

Rationale for Section 95814(a)(1).

This subsection is needed to allow entities that do not have a compliance obligation to participate in the cap-and-trade system. Qualifying entities may trade compliance instruments and voluntarily retire compliance instruments for the benefit of the environment. Allowing additional participants also increases market liquidity and creates a larger market.

Summary of Section 95814(a)(2)(A).

Subsection (a)(2)(A) proposes that an entity not identified as a covered entity or an opt-in covered entity could voluntarily register with the accounts administrator to become a Voluntary Associated Entity in order to acquire and hold California Compliance Instruments.

Rationale for Section 95814(a)(2)(A).

This provision is needed to allow additional participants interested in trading or voluntarily retiring compliance instruments to participate, increasing market liquidity and creating a larger market.

Summary of Section 95814(a)(2)(B).

Subsection (a)(2)(B) proposes that an entity operating an offset project could voluntarily register with the accounts administrator to become a Voluntary Associated Entity.

Rationale for Section 95814(a)(2)(B).

This provision is needed because before ARB can issue offset credits to the operator of an offset project registered with ARB, the operator must have a Holding Account into which ARB can transfer the offset credits.

Summary of Section 95814(b) through (b)(2), Other Registered Participants.

Subsections (b) through (b)(2) propose to allow entities that do not qualify to participate in the market or hold compliance instruments to register with the accounts administrator. These entities may include verifiers, verification bodies, Offset Project Registries, or other third parties approved pursuant to Subarticle 14.

Rationale for Section 95814(b) through (b)(2).

These provisions are necessary to ensure the integrity of the emissions verification and offset credit creation functions. The registration requirement gives ARB the opportunity to ensure that verifiers, verification bodies, and Offset Project Registries are qualified, free of conflicts of interest, and adhere to the provisions of this regulation. ARB can best ensure this by being able to use the

registration process to verify information on the entity, and to revoke registration (and prevent further participation) if the entity violates provisions of the regulation.

Summary of Section 95814(c).

Subsection (c) proposes that a registered entity that has had its Holding Account revoked pursuant to section 95831(b)(1) may not hold compliance instruments.

Rationale for Section 95814(c).

This provision is necessary because an entity may not participate in the cap-and-trade program if its Holding Account has been revoked due to a violation, to prevent further market disruption. ARB has an interest in protecting the integrity of the market.

Subarticle 4. Compliance Instruments.

Section 95820. Compliance Instruments Issued by Air Resources Board.

Summary of Section 95820(a), California Greenhouse Gas Emissions Allowances.

Subsection (a) identifies California Greenhouse Gas Emissions Allowances (CA GHG Allowances) as compliance instruments.

Rationale for Section 95820(a).

This provision is necessary so those participating in the program know which compliance instruments are valid.

Summary of Section 95820(a)(1).

Subsection (a)(1) proposes that CA GHG Allowances be issued by the Executive Officer. The amount of allowances issued by the Executive Officer will be equal to the schedule established in section 95841.

Rationale for Section 95820(a)(1).

This provision is necessary so those participating in the market know how many allowances will be in the market, which creates market stability.

Summary of Section 95820(a)(2).

Subsection (a)(2) proposes that each individual CA GHG Allowance issued by the Executive Officer be assigned a unique serial number that will also identify the year for which the allowance is issued.

Rationale for Section 95820(a)(2).

This provision is necessary so that each allowance is uniquely identifiable and cannot be used more than once. The serial numbers allow ARB to track the owner of the allowance at all times.

Summary of Section 95820(a)(3).

Subsection (a)(3) proposes that each CA GHG Allowance is placed into a Holding Account that is controlled by ARB.

Rationale for Section 95820(a)(3).

This provision is necessary because all allowances belong to ARB until they are put into the auction account or directly allocated to covered entities.

Summary of Section 95820(b), Offset Credits Issued by ARB.

Subsection (b) identifies offset credits issued by ARB as compliance instruments.

Rationale for Section 95820(b).

This provision is necessary so those participating in the program know which compliance instruments are valid.

Summary of Section 95820(b)(1).

Subsection (b)(1) proposes that the Executive Officer issue and register offset credits.

Rationale for Section 95820(b)(1).

This provision is necessary so that all offset credits used for compliance purposes meet the same requirements.

Summary of Section 95820(b)(2).

Subsection (b)(2) limits offset credits' use to the limit set forth in section 95855.

Rationale for Section 95820(b)(2).

This provision is necessary because users of offset credits need to know the use of offset credits is limited. For justification of section 95855, please see below.

Summary of Section 95820(c).

Subsection (c) proposes the properties associated with each compliance instrument, specifically that each compliance instrument represents permission to emit up to one metric ton of CO_2e. Additionally, the Executive Officer retains the right to revoke the authorization contained in the compliance instrument. Finally, compliance instruments do not constitute property or carry property rights.

Rationale for Section 95820(c).

This provision is necessary to inform holders of compliance instruments of the properties of compliance instruments. ARB has chosen to use a 1:1 ratio for compliance instruments to metric tons for administrative ease of calculation. Compliance instruments are created by ARB through AB 32, and are to be used solely for use as a compliance credit in California's market. It is necessary for the Executive Officer to retain authority to terminate or limit the "authorization to emit" so that in the case of fraud or market manipulation, ARB has a mechanism to protect the market. Additionally, property rights cannot attach to the compliance instruments because, in the event of federal preemption in the cap-and-trade market or other conditions, California must have the ability to revoke the compliance instruments without creating a loss to the people of California.

Section 95821. Compliance Instruments Issued by Approved Programs.

Summary of Section 95821(a) through (d).

Subsections (a) through (d) identify compliance instruments issued by other programs approved by ARB as compliance instruments that may be used to meet a compliance obligation.

Rationale for Section 95821(a) through (d).

These provisions are necessary so those participating in the program know which compliance instruments are valid. For justification of the specific requirements, please refer to those sections below.

Summary of Section 95821(e).

Subsection (e) identifies which compliance instruments issued by other approved programs are subject to the quantitative use limit.

Rationale for Section 95821(e).

This provision is necessary so those participating in the program know which compliance instruments issued by other approved programs are subject to the quantitative use limit. For justification of section 95855, please see above.

Subarticle 5. Registration and Accounts.

Section 95830. Registration with ARB.

Summary of Section 95830(a).

Subsection (a) proposes that the Executive Officer may serve as administrator of the accounts and tracking system or contract for the services.

Rationale for Section 95830(a).

This provision is necessary because ARB has not operated a tracking system of such complexity. ARB may find it is more efficient and less expensive to contract with a third party.

Summary of Section 95830(b).

Subsection (b) proposes that the Executive Officer must approve an entity's registration with ARB or that the entity is already registered with an external program approved by ARB before it can purchase or receive an allocation of allowances, buy offsets, or operate a project that will result in the creation of offsets.

Rationale for Section 95830(b).

This provision is necessary because ARB needs to maintain a complete record of all transactions involving California compliance instruments. To do this, ARB must know what entities are involved in any transaction. The registration requirement ensures anyone involved in transactions is subject to ARB requirements to report transactions.

Summary of Section 95830(c), Requirements for Registration.

Subsection (c) proposes that applicants for registration must submit information describing why they are participating in the system. They must also designate an authorized account representative, who will have the ability to make transactions and report them to ARB.

Rationale for Section 95830(c).

This provision is necessary because the applicant needs to identify how it qualifies for participation so ARB will know which rules to apply to the entity. Applicants also must identify any affiliated entities that are also participating in the system. This allows ARB to monitor transactions for potential collusion.

Summary of Section 95830(c)(1)(A).

Subsection (c)(1)(A) requires submission of an application for registration. The applicant must supply the name and a description of the organization registering.

Rationale for Section 95830(c)(1)(A).

The provision is necessary because ARB needs to collect basic information on registrants.

Summary of Section 95830(c)(1)(B).

Subsection (c)(1)(B) proposes that the applicant must identify how it qualifies to participate in the cap-and-trade system. The types of entities qualified to apply are identified in Subarticle 3.

Rationale for Section 95830(c)(1)(B).

The provision is necessary because Subarticle 3 identifies what types of entities may qualify to participate in the cap-and-trade system, as well as some that are prohibited from registering. Different rules apply to registrants depending on the category for which they are registering.

Summary of Section 95830(c)(1)(C).

Subsection (c)(1)(C) proposes that applicants must identify affiliated entities that are also registering.

Rationale for Section 95830(c)(1)(C).

The provision is necessary because identification of affiliates is needed for ARB to monitor the transactions in the market. An entity has a “direct corporate association” if it has a specified level of ownership or control over another entity. An entity has an “indirect corporate association” if it has a direct corporate association with a second entity, which in turn has a direct corporate association with a third entity.

Summary of Section 95830(c)(1)(D).

Subsection (c)(1)(D) proposes that applicants must disclose if they intend to hold compliance instruments which are actually owned by another entity.

Rationale for Section 95830(c)(1)(D).

The provision is necessary because ARB must be able to determine who is making the decisions on transactions in the market. ARB must also be able to evaluate a limit on how many compliance instruments an entity may control.

Summary of Section 95830(c)(1)(E).

Subsection (c)(1)(E) proposes that the Executive Officer may reject an application based on information contained in the application or withheld from the application.

Rationale for Section 95830(c)(1)(E).

The provision is necessary because ARB needs to ensure the integrity of the program and regulating participants contributes to that integrity. ARB may deny registration if it concludes the applicant does not qualify to participate. In addition, ARB may use information it collects from monitoring the market to determine if

the applicant has provided false or misleading information, or has withheld information. These are grounds for disqualifying an applicant.

Summary of Section 95830(c)(2).

Subsection (c)(2) proposes that an applicant must designate individuals who are authorized to act on the applicant's behalf to actually conduct transactions. Section 95832 contains the specific requirements for authorized account representatives.

Rationale for Section 95830(c)(2).

The provision is necessary because ARB needs a record of who may file transactions or information on behalf of the applicant for administrative purposes. ARB will reject transactions or information filed by anyone not designated as an authorized account representative.

Summary of Section 95830(d)(1).

Subsection (d)(1) proposes that entities qualifying as covered entities must register.

Rationale for Section 95830(d)(1).

The provision is necessary because ARB will need the registration information to administer the program.

Summary of Section 95830(d)(1)(A).

Subsection (d)(1)(A) proposes that an entity which becomes a covered entity after the cap-and-trade regulation is effective must register within 45 days of the deadline for reporting its emissions.

Rationale for Section 95830(d)(1)(A).

The provision is necessary to ensure the new covered entity registers promptly. ARB believes that 45 days will be sufficient for the entity to complete the registration process.

Summary of Section 95830(d)(1)(B).

Subsection (d)(1)(B) states that if an entity has crossed the 25,000 $MTCO_2e$ annual emissions threshold for any data year 2008 through 2010, it must register within 30 days of the effective date of this regulation.

Rationale for Section 95830(d)(1)(B).

The registration deadline provision is necessary for two reasons. First, based on the reporting deadlines in the Mandatory Reporting Regulation (MRR), it ensures

that an entity which becomes a covered entity will have enough time to complete registration by the proposed deadline. Second, the provision gives ARB enough time to process the registrations for the start of the program in 2012.

Summary of Section 95830(d)(2)(A).

Subsection (d)(2)(A) proposes that an entity must register by December 31, 2011, if it chooses to participate in the cap-and-trade system in 2012 as an opt-in participant, as allowed in section 95813.

Rationale for Section 95830(d)(2)(A).

The provision is necessary because Section 95813 allows an entity with reported emissions below the threshold to voluntarily subject itself to the compliance requirements of the cap-and-trade regulation. To be eligible to receive direct allocations of allowances, and to allow ARB to correctly calculate their compliance obligations in 2012, these entities must complete their registration before December 31, 2011. ARB believes this schedule gives the entity time to complete the registration process.

Summary of Section 95830(d)(2)(B).

Subsection (d)(2)(B) proposes that an entity choosing to participate as an opt-in participant, as allowed in section 95813, must register by November 30 of the year before which it chooses to participate in the cap-and-trade system.

Rationale for Section 95830(d)(2)(B).

The provision is necessary to allow ARB to correctly calculate an entity's compliance obligations and create the necessary accounts. ARB believes this schedule gives the entity time to complete the registration process.

Summary of Section 95830(d)(3).

Subsection (d)(3) proposes that an entity registering as a voluntarily associated entity or in the category of other market participant must complete registration prior to holding compliance instruments or fulfilling other functions such as verification. However, they do not face any other deadlines for registration.

Rationale for Section 95830(d)(3).

The provision is necessary because entities that do not have a compliance obligation must register before they perform any other functions within the cap-and-trade system, such as holding allowances or conducting transactions, operating offset projects, or performing verifications. ARB believes this schedule gives the entity time to complete the registration process.

Summary of Section 95830(e).

Subsection (e) proposes that the Executive Officer determines when the registration is complete, approves the registration, and informs both the applicant and the accounts administrator of the approval. The accounts administrator will then create the accounts relevant for the type of registration approved.

Rationale for Section 95830(e).

This provision is necessary because approval of registration is not automatic. ARB must review the applicant's information for accuracy, and then determine whether the applicant is eligible to participate. ARB may need to review reporting data and information contained in the application, as well as the applicant's history of participation in the system.

Section 95831. Account Types.

Summary of Section 95831(a)(1).

Subsection (a)(1) states that the Executive Officer will authorize only one set of accounts for an entity which has completed registration.

Rationale for Section 95831(a)(1).

This provision is needed to serve two purposes. First, it ensures that ARB can effectively monitor the holdings of registered entities. Second, it ensures that ARB can effectively discipline an entity that violates the regulations by suspending, restricting, or revoking the entity's account.

Summary of Section 95831(a)(2).

Subsection (a)(2) proposes that the Executive Officer will create a Holding Account for any entity that completes registration as a covered entity, opt-in covered entity, or a voluntarily associated entity.

Rationale for Section 95831(a)(2).

The provision is necessary because an entity will need a Holding Account to keep compliance instruments.

Summary of Section 95831(a)(3).

Subsection (a)(3) proposes that some covered entities that receive a direct allocation will be given a Limited Use Holding Account in addition to their Holding Account for holding their allowances.

Rationale for Section 95831(a)(3).

The provision is necessary because some covered entities in the electricity retail distribution sector will receive a direct allocation of allowances from ARB. However, the allocation comes with restrictions on what the covered entities can do with their allowances. The creation of these special accounts will allow ARB to enforce the restrictions efficiently.

Summary of Section 95831(a)(3)(A).

Subsection (a)(3)(A) proposes that an entity with a Limited Use Holding Account may not transfer instruments from a Holding Account into this account.

Rationale for Section 95831(a)(3)(A).

The provision is necessary because entities with a Limited Use Holding Account may sell the allowances at the consignment auction. The restriction on transfers into this account prevents the entity from selling other allowances at consignment.

Summary of Section 95831(a)(3)(B).

Subsection (a)(3)(B) proposes that allowances placed into the Limited Use Holding account may not be transferred to any account other than the Auction Holding Account under the control of the Executive Officer.

Rationale for Section 95831(a)(3)(B).

The provision is necessary because allowances allocated to Limited Use Holding account holders are intended to be used for the benefit of electricity ratepayers. ARB will ensure this by requiring the covered entities to auction the allowances through the consignment option and use the proceeds to reduce electricity costs for ratepayers.

Summary of Section 95831(a)(4).

Subsection (a)(4) proposes that the Executive Officer will create a Compliance Account for any entity that completes registration as a covered entity or opt-in covered entity.

Rationale for Section 95831(a)(4).

The provision is necessary because when an entity needs to surrender a compliance instrument, it will transfer the instrument from its Holding Account to its Compliance Account.

Summary of Section 95831(a)(4)(A).

Subsection (a)(4)(A) proposes that a covered entity may transfer compliance instruments to its Compliance Account at any time.

Rationale for Section 95831(a)(4)(A).

The provision is necessary because ARB sees no reason to restrict when a covered entity can transfer instruments to its Compliance Account. In addition, instruments placed in a Compliance Account do not count toward a covered entity's holding limit, which is described in section 95920.

Summary of Section 95831(a)(4)(B).

Subsection (a)(4)(B) proposes that when a covered entity transfers a compliance instrument into its Compliance Account it may not remove it later.

Rationale for Section 95831(a)(4)(B).

The provision is necessary because ARB is imposing this restriction as a method of giving a covered entity an exemption from the holding limit for compliance instruments it has accumulated to cover its surrender obligation. If ARB is going to give covered entities the exemption, the entities should not be able to transfer the instruments to another registered entity.

Summary of Section 95831(b)(1).

Subsection (b)(1) proposes that the Executive Officer may revoke or suspend the registration of a voluntarily associated entity for violations of the regulation.

Rationale for Section 95831(b)(1).

The provision is necessary because this option ensures that entities violating the regulation do not continue to disrupt the market.

Summary of Section 95831(b)(1)(A).

Subsection (b)(1)(A) proposes that if the Executive Officer revokes an entity's registration, the entity will be given thirty days to sell or voluntarily retire any compliance instruments in its Holding Account.

Rationale for Section 95831(b)(1)(A).

The provision is necessary because once an entity's registration is revoked or suspended, its Holding Account is revoked or suspended as well, and it can no longer hold compliance instruments. ARB believes thirty days should give an entity sufficient time to transfer its instruments before it can no longer access its account.

Summary of Section 95831(b)(1)(B).

Subsection (b)(1)(B) proposes that if an entity whose registration and Holding Account have been suspended does not sell or voluntarily retire the compliance instruments in its account, ARB will transfer the allowances to the consignment auction for sale and return the auction proceeds to the entity. Any remaining offsets will be retired by ARB.

Rationale for Section 95831(b)(1)(B).

The provision is necessary because ARB must have a method of dealing with an entity which refuses to remove compliance instruments from its holding account when its registration has been revoked or suspended. This approach ensures that the entity receives value for the allowances sold at auction. ARB has no comparable way to sell offsets, so the offsets will be retired and the account holder compensated through the consignment auction pursuant to section 95910(d)

Summary of Section 95831(b)(2)(A).

Subsection (b)(2)(A) proposes that the Holding Account of any entity may be restricted for violations of the regulation to hold a number of compliance instruments that is less than the holding limit.

Rationale for Section 95831(b)(2)(A).

The provision is necessary to allow ARB to restrict holdings below the usual holding limit, as a response to rule violations. Normally, an entity may hold as many compliance instruments as it wishes, up to a number set by the holding limit. Restricting the number of compliance instruments held may be the only remedy available to prevent violations. For example, ARB could not suspend or revoke the account of a covered entity, which needs the accounts for compliance purposes, but ARB could penalize the entity by removing some of the flexibility afforded to covered entities under the rules.

Summary of Section 95831(b)(2)(B).

Subsection (b)(2)(B) proposes that the Holding Account of any entity may be restricted for violations of the regulation to limit or prohibit transfers in or out of the account.

Rationale for Section 95831(b)(2)(B).

The provision is necessary to allow ARB to respond to rule violations by restricting an entity's ability to accumulate instruments or participate in market activity. These could be implemented by prohibiting further transfers into or out of the entity's account.

Summary of Section 95831(c), Accounts Under the Control of the Executive Officer.

Subsection (c) proposes that there will be several accounts under the control of the Executive Officer.

Rationale for Section 95831(c).

The provision is necessary to allow the Executive Officer to serve essential functions of the system, such as the creation or approval of compliance instruments, auction operation, direct allocations to entities, voluntary retirements, surrender compliance, and the maintenance of a list of compliance instruments that have been retired in the California system or a GHG emissions trading system (ETS) to which California has linked.

Summary of Section 95831(c)(1).

Subsection (c)(1) proposes that the Executive Officer will control the Allocation Holding Account, into which the serial numbers of allowances will be recorded when the allowances are created.

Rationale for Section 95831(c)(1).

The provision is necessary because the Executive Officer must be able to introduce new allowances into the system. Allowances and offset credits do not exist outside of the system of accounts. Allowances are created when they are assigned serial numbers and the numbers are placed in the Allocation Holding Account. This account will be the source account when the Executive Officer transfers them to some other account for direct allocation or for auction.

Summary of Section 95831(c)(2).

Subsection (c)(2) proposes that the Executive Officer will control the Auction Holding Account, into which the serial numbers of allowances will be transferred for sale at auction.

Rationale for Section 95831(c)(2).

The provision is necessary because the Executive Officer must be able to transfer allowances from several source accounts to a central account for auction.

Summary of Section 95831(c)(2)(A).

Subsection (c)(2)(A) proposes that the Allocation Holding Account will be the source of allowances allocated by ARB directly to auction.

Rationale for Section 95831(c)(2)(A).

The provision is necessary because in each budget year ARB will designate a number of newly created allowances to be auctioned. Before each quarterly auction, ARB will need to transfer allowances to the Auction Holding Account.

Summary of Section 95831(c)(2)(B).

Subsection (c)(2)(B) proposes that the Executive Officer may transfer allowances from accounts that are to be suspended or revoked.

Rationale for Section 95831(c)(2)(B).

The provision is necessary to allow allowances previously allocated or auctioned to registered entities to be transferred to the auction if the entities' registration and accounts are to be suspended or revoked. In those cases, if the entities do not transfer all compliance instruments out of the account, ARB will consign them for sale at the auction.

Summary of Section 95831(c)(2)(C).

Subsection (c)(2)(C) proposes that covered entities may transfer allowances from Limited Use Holding Accounts to the Auction Holding Account.

Rationale for Section 95831(c)(2)(C).

The provision is necessary to permit allowances previously allocated to covered entities to be transferred to the auction.

Summary of Section 95831(c)(3).

Subsection (c)(3) proposes that the Executive Officer will transfer instruments from individual Compliance Accounts to the Retirement Account when compliance deadlines occur. Individual account holders may also voluntarily retire allowances by transferring them from their Holding Accounts to the Retirement Account.

Rationale for Section 95831(c)(3).

The provision is necessary because the transfer of a compliance instrument to the Retirement Account is the way instruments will be removed permanently from the system.

Summary of Section 95831(c)(3)(A).

Subsection (c)(3)(A) proposes that an instrument transferred to the Retirement Account cannot be further transferred to any holding or Compliance Account.

Rationale for Section 95831(c)(3)(A).

The provision is necessary because any instrument transferred to the Retirement Account must be removed from the system, and no further transfers may be permitted.

Summary of Section 95831(c)(3)(B).

Subsection (c)(3)(B) proposes that If California retires an instrument, it would then inform any linked ETS that the retirement has occurred.

Rationale for Section 95831(c)(3)(B).

The provision is necessary to guarantee that any compliance instrument retired by California will not then be traded on any system to which California chooses to link.

Summary of Section 95831(c)(3)(C).

Subsection (c)(3)(C) proposes that once an instrument has been transferred to the Retirement Account, the Executive Officer will publish the retirement by recording the serial number of the retired instrument in a public registry.

Rationale for Section 95831(c)(3)(C).

The provision is necessary because placing the serial number in a public registry will ensure the public can observe that entities are complying with their surrender obligations and that retired instruments are no longer circulating.

Summary of Section 95831(c)(4)(A) through (c)(4)(D).

Subsections (c)(4)(A) through (c)(4)(D) propose that the Allowance Price Containment Reserve Account will be a Holding Account into which the Executive Officer will transfer allowances from several sources: allowances initially allocated for auction, but which remain unsold when an auction settles at the reserve price; allowances directly allocated to the Reserve; and allowances submitted in fulfillment of an excess emissions obligation.

Subsection (c)(4)(D) proposes that section 95913 contains the rules governing the operation of the Allowance Price Containment Reserve Account.

Rationale for Section 95831(c)(4)(A) through (c)(4)(D).

Subsections (c)(4)(A) through (c)(4)(D) are needed to define the three sources of allowances that fund the Allowance Price Containment Reserve Account.

The first source is allowances remaining unsold at auction. Allowances would be unsold when an auction is settled at the auction reserve price. This could occur if

allowances are temporarily oversupplied to the market. Placing the unsold allowances in the Reserve helps eliminate the temporary oversupply and makes the allowances available if prices are much higher in the future.

The second source is direct allocation of a large number of allowances from future vintages. ARB chose this method to create a reserve of sufficient size to provide credible cost containment.

The third source is allowances surrendered to meet an excess emissions obligation when entities fail to comply in a timely manner with surrender obligations. However, the excess emissions obligation could reduce supplies of allowances to the market. This could result in higher prices for all entities. Placing the allowances used to meet the excess emissions obligation into the Allowance Price Containment Reserve keeps the allowances available for purchase in times of high market prices.

Subsection (c)(4)(D) is necessary to define the process by which allowances are removed from the Allowance Price Containment Reserve Account. Allowances may be withdrawn from the Allowance Price Containment Reserve Account as a source of an additional supply of allowances, which covered entities may purchase during times of high prices. The rules governing these sales from the Reserve are contained in section 95913.

Summary of Section 95831(c)(5)(A).

Subsection (c)(5)(A) proposes that the Executive Officer will ensure that a percentage of the offsets issued by ARB for projects approved under the Compliance Offset Protocol for Forest Projects are placed in a Holding Account known as the *Forest Buffer Account.*

Rationale for Section 95831(c)(5)(A).

The provision is necessary because the Forest Buffer Account will be used to replace offset credits that are invalidated due to an unintentional reversal of a forest project. The Compliance Offset Protocol for Forest Projects contains a procedure to determine the proportion of the offset credits issued for a project that must be placed into the Reserve. The Executive Officer must ensure this transfer takes place so that the Reserve may contain enough offset credits to replace invalidated offset credits.

Summary of Section 95831(c)(5)(B).

Subsection (c)(5)(B) proposes that the Executive Officer will remove offset credits from the Forest Buffer Account when an unintentional reversal occurs. These offset credits will be transferred to the Retirement Account.

Rationale for Section 95831(c)(5)(B).

The provision is necessary because the Executive Officer will use offset credits in the Forest Buffer Account to ensure the integrity of the retirement process.

Summary of Section 95831(c)(6), Voluntary Renewable Energy Allowance Set-Aside Account.

Subsection (c)(6) is reserved for a possible future account for a voluntary renewable energy allowance set-aside.

Rationale for Section 95831(c)(6).

The cap-and-trade program could have negative effects on the voluntary renewable energy (VRE) market that could be addressed through a voluntary renewable energy allowance set-aside. The proposed regulation does not currently provide for allocation of voluntary renewable energy allowance set-aside, but leaves this subsection as a placeholder for establishing an account to use as part of such a provision in the future.

Section 95832. Designation of Authorized Account Representative.

Summary of Section 95832(a)(1) through (a)(5).

Subsections (a)(1) through (a)(5) require that every application for registration pursuant to 95830 must designate a single authorized account representative and a single alternate authorized account representative who may act on behalf of the authorized account representative.

Subsections (a)(1) through (a)(5) list the required elements for the application. These include names and addresses of individuals named as representatives; name of the organization applying; statements of beneficial ownership and relationships between beneficial owners; and a certification statement signed by the authorized representatives.

Rationale for Section 95832(a)(1) through (a)(5).

These provisions are necessary to identify the individuals authorized to transact on behalf of the account holder.

Summary of Section 95832(b).

Subsection (b) proposes that the Executive Officer, not the accounts administrator, has the responsibility to evaluate the documentation supporting authorizations.

Rationale for Section 95832(b).

The provision is necessary because the accounts administrator simply processes transactions under the direction of the Executive Officer. The Executive Officer has the sole responsibility to recognize authorized account representatives.

Summary of Section 95832(c)(1) through (c)(3).

Subsections (c)(1) through (c)(3) contain requirements for the accounts administrator to perform when a registration application is received. Subsection (c)(1) requires creation of the account for the registrant. Subsection (c)(2) requires the registering entity owning any instruments in the account be bound by any action of the authorized account representative or alternate authorized account representative. Subsection (c)(3) requires the registering entity owning any instruments in the account be bound by orders issued by a court or the Executive Officer to the authorized account representative or alternate authorized account representative.

Rationale for Section 95832(c)(1) through (c)(3).

These subsections are necessary so that the account holder owning any instruments in an account is bound by the actions of courts, the Executive Officer, or the authorized account representative or alternate authorized account representative.

Summary of Section 95832(d) and (e).

Subsection (d) and (e) propose the requirements for certifications that must accompany any submission concerning the account by the account holder. Section (e) requires the accounts administrator to accept submissions only if accompanied by the proper certification.

Rationale for Section 95832(d) and (e).

These provisions are essential to ensuring that transaction submissions are only made by the persons authorized to do so.

Summary of Section 95832(f)(1) through (f)(4).

Subsections (f)(1) through (f)(4) contain the rules for changing an authorized account representative or alternate authorized account representative or a change to the entities that own compliance instruments in an account.

Rationale for Section 95832(f)(1) through (f)(4).

These provisions are necessary so that the accounts administrator can properly process changes of the authorized account representative or alternate authorized account representative or a change to the entities that own compliance instruments in an account.

Summary of Section 95832(g)(1) through (g)(3).

Subsections (g)(1) through (g)(3) contain requirements for the processing of objections concerning the authorized account representative or alternate authorized account representative. The accounts administrator will recognize the representatives named in completed registration applications until new applications are completed.

Rationale for Section 95832(g)(1) through (g)(3).

These provisions are necessary to maintain the ability of the accounts administrator to recognize an authorized account representative or alternate authorized account representative and process transactions submitted until representatives are changed through the registration process. The accounts administrator will not be involved with objections or disputes, and will only deal with submissions from the representatives designated through the registration process.

Summary of Section 95832(h)(1) through (h)(5).

Subsections (h)(1) through (h)(5) contain a process that must be followed for the authorized account representative or alternate authorized account representative to delegate the authority to another person. These requirements include notice that must be provided to the accounts administrator; a certification statement; processing of the delegation and superseding delegations by the accounts administrator, and handling of electronic submissions.

Rationale for Section 95832(h)(1) through (h)(5).

These provisions are necessary in case the authorized account representative or alternate authorized account representative need to delegate their authority. The provisions ensure that the accounts administrator will always only recognize a single authorized account representative or alternate authorized account representative as being able to submit transactions concerning accounts.

Subarticle 6. California Greenhouse Gas Allowance Budgets.

Section 95840. Compliance Periods.

Summary of Section 95840.

This section proposes the three compliance periods. A compliance period represents a three-year window for which covered entities' greenhouse gas emissions will be summed to calculate a triennial compliance obligation. Covered entities must surrender an equivalent number of compliance instruments to match their compliance obligation for each three-year period.

Rationale for Section 95840.

This section is necessary to establish multiyear compliance periods, which enhance flexibility for covered entities and help smooth allowance price volatility related to variations in emissions levels due to changes in weather, market conditions, or other variables. However, very long compliance periods cannot provide regular assurance that emissions targets are being met and that covered entities are acquiring sufficient compliance instruments to match their obligations. Staff concluded that three-year compliance periods—with interim partial surrenders annually—will appropriately balance the goals of flexibility and environmental integrity. In reaching this conclusion, staff relied on the advice of the Market Advisory Committee, deliberations with Western Climate Initiative partners, and the example set by the Regional Greenhouse Gas Initiative.

Section 95841. Annual Allowance Budgets for Calendar Years 2012–2020.

Summary of Section 95841.

This section proposes the total amount of allowances that will be created for each year. These annual allowance budgets, when coupled with permissible offset credit usage, represent a set of annual emissions targets for the covered entities.

Rationale for Section 95841.

The allowance budgets begin with the expected level of emissions from the narrow scope covered sources in 2012 and expand in 2015 to account for coverage of additional sources. This framework was adopted to allow one year of program coverage prior to any required emissions reductions, to ensure a smooth transition as a category of covered entities enters the program.

The allowance budget levels were based on an analysis of historical, current, and projected future emissions levels relative to the 2020 economy-wide target set forth by AB 32. In developing these budgets, staff synthesized the results of multiple analyses of GHG abatement opportunities and costs for the covered entities. In addition, staff considered California Executive Order S-3-05 that requires an 80 percent reduction of GHGs from 1990 levels by 2050, input from WCI partner deliberations, targets in existing GHG cap-and-trade systems, proposed federal climate legislation, the work of the United Nations' Intergovernmental Panel on Climate Change, and stakeholder comment.

Subarticle 7. Compliance Requirements for Covered Entities.

Section 95850. General Requirements.

Summary of Section 95850(a), Reporting Requirements.

Subsection (a) proposes that covered entities be subject to ARB's Mandatory Reporting Regulation.

Rationale for Section 95850(a).

This provision is necessary because covered entities must first report so that ARB can determine if they should be classified as covered entities and if they exceed the emissions threshold. Also, a covered entity's compliance obligation is calculated based on its reported emissions.

Summary of Section 95850(b), Record Retention Requirements.

Subsection (b) proposes that emissions data reports should be kept for 10 consecutive years by each covered entity and they must provide them to ARB within 20 days of a request.

Rationale for Section 95850(b).

This provision is necessary to cover all three compliance periods and the following year of the last compliance period. Covered entities must give records within 20 days to give them sufficient time to collect the information without delaying ARB's review.

Summary of Section 95850(b)(1).

Subsection (b)(1) specifies that covered entities must retain data and provide it to ARB upon request.

Rationale for Section 95850(b)(1).

This provision is necessary to allow covered entities to know what documentation they need to retain and provide to ARB upon request.

Summary of Section 95850(b)(2).

Subsection (b)(2) specifies that covered entities must keep, and provide to ARB if requested, records that are used to calculate their compliance obligations.

Rationale for Section 95850(b)(2).

This provision is necessary for ARB to ensure that the compliance obligation is correctly calculated over time.

Summary of Section 95850(b)(3).

Subsection (b)(3) requires covered entities to keep, and provide to ARB if requested, their verification statements.

Rationale for Section 95850(b)(3).

This provision is necessary for ARB to ensure that the emissions data used for purposes of (b)(2) was verified by an ARB accredited verification body.

Section 95851. Phase-in of Compliance Obligation for Covered Entities.

Summary of Section 95851(a).

Subsection (a) provides which covered entities have a compliance obligation in the first compliance period beginning in 2012. These include: operators of facilities, first jurisdictional deliverers of electricity, and suppliers of CO_2 that exceed the emissions threshold.

Rationale for Section 95851(a).

This provision is included because not all covered entities have a compliance obligation beginning in the first compliance period, and other sectors are phased in later in the program. These emissions sources are regulated in the context of clean air regulations; therefore, it is practical to cover these sectors from the start of the program in 2012.

Summary of Section 95851(b).

Subsection (b) provides which covered entities have a compliance obligation in the second compliance period beginning in 2015. These emissions sources include: suppliers of natural gas, transportation fuels, and natural gas liquids that exceed the emissions threshold.

Rationale for Section 95851(b).

These emission sources are included beginning in 2015 because there are currently no reporting requirements in place for these sources. This additional time will give these sources enough time to collect and verify their emissions data and provide it to ARB.

Section 95852. Emissions Categories Used to Calculate Compliance Obligations.

Summary of Section 95852.

This section identifies how ARB will calculate and assign compliance obligations to entities in the case of positive or qualified positive verification statements and in the case that an entity does not submit an emissions data report or complete verification.

Rationale for Section 95852.

This section is included because entities must know in advance how their emissions data reports will ultimately be assigned a compliance obligation under these different scenarios.

Summary of Section 95852(a), Operators of Facilities.

Subsection (a) proposes which GHG emissions operators of facilities will hold a compliance obligation for. Operators of facilities have a compliance obligation for every metric ton of CO_2e of positive or qualified positive GHG emissions, either as a process emission or a stationary combustion emission.

Rationale for Section 95852 (a).

This provision is included because operators of facilities may combust both process and stationary emissions, each of which will be covered under this program. It is important to identify the emissions categories used to calculate compliance obligations for operators of facilities.

Summary of Section 95852(b), First Deliverers of Electricity.

Subsection (b) proposes that a first deliverer of electricity has a compliance obligation for every metric ton of CO_2e of positive or qualified positive GHG emissions, stationary combustion emissions, or emissions associated with electricity imported into California.

Rationale for Section 95852(b).

This provision is included because first deliverers of electricity may combust stationary emissions, or emissions associated with electricity, each of which will be covered under this program. It is important to identify the emissions categories used to calculate compliance obligations for first jurisdictional deliverers of electricity.

Summary of Section 95852(c), Suppliers of Natural Gas.

Subsection (c) proposes that a supplier of natural gas has a compliance obligation for every metric ton of CO_2e of GHG emissions that would result from full combustion or oxidation of all fuel delivered to end users in California, less the fuel that is delivered to other covered entities.

Rationale for Section 95852(c).

This provision is included because it is necessary to identify the emissions categories used to calculate compliance obligations for suppliers of natural gas.

Summary of Section 95852(d), Suppliers of RBOB and Distillate Fuel Oils.

Subsection (d) identifies that a supplier of petroleum products has a compliance obligation for every metric ton of CO_2e of GHG emissions that would result from full combustion or oxidation of the quantities of RBOB, Distillate Fuel Oil No. 1, and Distillate Fuel Oil No. 2.

Rationale for Section 95852 (d).

This provision is included because it is necessary to identify the emissions categories used to calculate compliance obligations for suppliers of petroleum products. It is necessary to identify the specific fuels in (d)(1), (d)(2) and (d)(3) to ensure there is no confusion about which fuels generate a compliance obligation.

Summary of Section 95852(e)(1), Producers of Natural Gas Liquids; Producers of Liquefied Petroleum Gas.

Subsection (e)(1) identifies that a producer of liquefied petroleum gas has a compliance obligation for every metric ton of CO_2e of GHG emissions that would result from full combustion or oxidation of all fuel sold, distributed, or otherwise transferred for consumption in California.

Rationale for Section 95852(e)(1).

This provision is included because it is necessary to identify the emissions categories used to calculate compliance obligations for producers of natural gas liquids.

Summary of Section 95852(e)(2), Producers of Natural Gas Liquids: Importer consignees of Liquefied Petroleum Gas.

Subsection (e)(2) identifies that an importer of liquefied petroleum gas has a compliance obligation for every MT of CO2e of GHG emissions that would result from full combustion or oxidation of all fuel imported into California.

Rationale for Section 95852(e)(2).

This provision is included because it is necessary to identify the emissions categories used to calculate compliance obligations for importers of natural gas liquids.

Summary of Section 95852(f), Suppliers of Blended Fuels.

Subsection (f) identifies suppliers of blended fuels as entities with compliance obligations under this regulation based on the constitution of the blended fuel.

Rationale for Section 95852(f).

This section is necessary to ensure that suppliers of blended fuels are aware that, even though the blended fuel itself may not have a compliance obligation under the regulation, the different parts of the blend are subject to the regulation and incur a compliance obligation if the parts of the blended fuel meet the requirements of the regulation.

Summary of Section 95852(g), Suppliers of Carbon Dioxide.

Subsection (g) identifies that a supplier of carbon dioxide has a compliance obligation for GHG emissions that would result from imported and exported quantities of carbon dioxide.

Rationale for Section 95852(g).

This provision is included because it is necessary to identify the emissions categories used to calculate compliance obligations for suppliers of carbon dioxide.

Summary of Section 95852(h).

Subsection (h) identifies that the compliance obligation is calculated from the CO_2, CH_4, and N_2O emissions from fossil fuel combustion, the CH_4 and N_2O emissions from all biomass-based fuel combustion, the CO_2 emissions from the combustion of unverifiable biomass-derived fuels listed in 95852.2, the CO_2 emissions from the combustion of biomass-derived fuels not listed in 95852.2, and the CO_2, CH_4, and N_2O from all process and fugitive emissions specified in the Mandatory Reporting Regulation, except those listed in 95852.2(a)(6)

Rationale for Section 95852(h).

This provision is included because CO_2e may or may not include biomass-derived fuel. The current U.S. EPA requirement for facilities reporting annual emissions of CO_2, CH_4, N_2O, and each fluorinated GHG includes annual biogenic CO_2 emissions as aggregated for all GHGs from all applicable source categories.

Section 95852.1. Compliance Obligations for Biomass-Derived Fuels.

Summary of Section 95852.1, Compliance Obligations for Biomass-Derived Fuels.

This section states that entities that have emissions from the combustion of biomass-derived fuels incur a compliance obligation for every metric ton of CO_2e emissions emitted from biomass-derived fuels.

Rationale for Section 95852.1.

This section is necessary to ensure that all possible emissions of CO_2e from fuel combustion incurs a compliance obligation.

Summary of Section 95852.1 (a).

Subsection (a) specifies that combustion emissions from source categories not listed under section 95852(g) do not hold a compliance obligation.

Rationale for Section 95852.1 (a).

This provision is included because entities whose aggregate emissions include biomass-derived fuels will not count those emissions toward their total compliance obligation when reporting.

Summary of Section 95852.1 (b).

Subsection (b) specifies emissions from source categories that are listed under 95852(g), but are not verifiable under MRR section 95131(i).

Rationale for Section 95852.1 (b).

This provision is included because some biomass-derived fuels may be verifiable, and others may be reported, but unverifiable.

Section 95852.2. Emissions Without a Compliance Obligation.

Summary of Section 95852.2, Emissions Without a Compliance Obligation.

This section identifies emissions from specific sources that count toward the reporting threshold for the Mandatory Reporting Regulation, but do not count toward a cap-and-trade compliance obligation threshold.

Rationale for Section 95852.2.

This section is included because emissions from specified sources are not required to hold a compliance obligation under AB 32; however, ARB maintains the need to collect the emissions data from these sources in the event that they are covered in the future. Emissions from specified source categories may be required to report, but will not hold a compliance obligation.

Summary of Section 95852.2 (a) through (e).

Subsections (a) through (e) propose facilities using biomass, municipal solid waste, geothermal, hydropower, or biodiesel are subject to the additional resource or fuel-specific requirements described here.

Rationale for Section 95852.2(a) through (e).

These provisions summarize the requirements for a facility, which qualify for the Renewables Portfolio Standard (RPS). These categories are excluded from holding a compliance obligation because these facilities are subject to a separate regulation regarding RPS.

Summary of Section 95852(f) Fugitive and Process Emissions.

Subsection (f) identifies fugitive emissions that do not hold a compliance obligation. These emissions include CO_2 emissions from geothermal generating units, CO_2 and CH_4 emissions from geothermal facilities, and CO_2 emissions

from hydrogen fuel cells. This includes emissions at petroleum refineries such as asphalt-blowing operations, equipment leaks, storage tanks, and loading operations and leak detection and leaker emission factors, and stationary fugitive and stationary vented sources on offshore oil platforms at petroleum and natural gas system facilities.

Rationale for Section 95852(f).

This provision is included because entities whose aggregate emissions include fugitive emissions from the activities described will not count those emissions toward their total compliance obligation when reporting.

Section 95852.3. Effect of Status Verification Statement on Calculation of Compliance Obligations.

Summary of Section 95852.3 (a).

Subsection (a) specifies that in the case of a positive or qualified positive verification statement, the compliance obligation will be calculated by using the reported and verified emissions, as outlined in section 95131 of the Mandatory Reporting Requirements.

Rationale for Section 95852.3 (a).

This provision is necessary to specify how different types of verification statements will be used to calculate a compliance obligation.

Summary of Section 95852.3 (b).

Subsection (b) specifies that in the case of an adverse verification statement, for every metric ton of CO_2e of GHG emissions, as determined by ARB, the compliance obligation will equal the ARB-assigned emissions, as outlined in section 95131 of the Mandatory Reporting Regulation.

Rationale for Section 95852.3 (b).

This provision is necessary to specify how different types of verification statements will be used to calculate a compliance obligation.

Summary of Section 95852.3 (c).

Subsection (c) specifies that in the case than an entity does not submit an emissions data report or complete verification, the EO will determine its compliance obligation, as set forth in section 95103 of the Mandatory Reporting Regulation.

Rationale for Section 95852.3 (c).

This provision is necessary to specify how different types of verification statements will be used to calculate a compliance obligation.

Section 95853. Calculation of Covered Entity's Triennial Compliance Obligation.

Summary of Section 95853(a)

This section states that any entity that exceeds the compliance threshold in any of the three years before the start of a compliance period is an entity covered by the regulation for the entire next compliance period. It further specifies that the entity's compliance obligation will be calculated based on the total verified emissions from the entire compliance period.

Rationale for Section 95853(a)

This section is necessary to ensure that all entities that may be covered entities pursuant to this regulation are aware of the conditions that would make an entity a covered entity. This section is also necessary to inform all covered entities of their ongoing compliance obligations even though the entity may not exceed the threshold in subsequent years.

Summary of Section 95853(b)

This section states that if a covered entity initially exceeds the threshold stated in the regulation during the first year of a compliance period, that entity is a covered entity for all three years of the compliance period. It further specifies that the entity's compliance obligation will be calculated based on the total verified emissions from the entire compliance period.

Rationale for Section 95853(b)

This section is necessary to inform an entity that had not previously been subject to the regulation and whose emissions exceed the threshold in the first year of a compliance period, that the entity remains a covered entity for the entire compliance period.

This section is also necessary to inform all covered entities of their ongoing compliance obligations even though the entity may not exceed the threshold in subsequent years.

Summary of Section 95853(c)

This section states that if a covered entity initially exceeds the emissions threshold during the second year of a compliance period, the entity is a covered entity for the second and third years of the compliance period only.

It further specifies that, for an entity that first exceeds the regulation threshold in the second year of a compliance period, the entity's compliance obligation will be calculated based on the total verified emissions from the second and third year of the compliance period.

Rationale for Section 95853(c)

This section is necessary to clarify when an entity that had not previously been subject to the regulation and whose emissions exceed the threshold in the second year of a compliance period becomes a covered entity under the regulation, and when the newly covered entity's compliance obligation begins.

Summary of Section 95853(d)

This section states that if a covered entity initially exceeds the emissions threshold during the third year of a compliance period, the entity has a compliance obligation for the third year of the compliance period only. The section also states that the compliance obligation for its emissions from the third year of the compliance period is not due until the subsequent compliance period. The covered entity's compliance obligation for the third year will be added to the subsequent compliance period obligations.

Rationale for Section 95853(d)

This section is necessary to clarify that the compliance obligation for an entity that becomes a covered entity during the third year of the compliance period is not due immediately. The section further clarifies that the compliance obligation is not forgiven, but, for purposes of ease of administration, the obligation is added to the subsequent compliance period's compliance obligations.

Summary of Section 95853(e)

Subsection (e) states that if a new covered entity is eligible to receive a direct allocation of allowances, it will not receive an allocation until the year following the first year the covered entity exceeds the threshold of this regulation. In that year, it will receive twice the number of allowances which it is eligible to receive for a single year.

Rationale for Section 95853(e)

This provision is necessary because the verified information needed to allocate allowances will not be available until the year following the first time the entity exceeds the threshold of this regulation.

Section 95854. Quantitative Usage Limit on Designated Compliance Instruments – Offset Credits.

Summary of Section 95854.

Section 95854 proposes that a covered entity may use compliance instruments identified in sections 95821(b), (c), and (d) to meet up to 8 percent of its annual or triennial compliance obligation. Compliance instruments identified in section 95821(d) may only be used to meet up to 25 percent of this 8 percent limit (i.e., a maximum of 2 percent) during the first and second compliance periods, and up to 50 percent of this 8 percent limit (i.e., a maximum of 4 percent) during the third compliance period.

Rationale for Section 95854.

This section is needed to identify which compliance instruments may be used to meet up to 8 percent of a covered entity's compliance obligation. The purpose of this is to create a limit on offsets to balance emissions reductions from covered entities and offset projects.

Section 95855. Annual Compliance Obligation.

Summary of Section 95855(a).

Subsection (a) states that a covered entity will incur an annual compliance obligation each year that it is a covered entity, except when the entity becomes a covered entity during a reporting data year. In that case the entity will not owe an annual obligation for that year.

Rationale for Section 95855(a).

This provision is needed to define when an entity will incur an annual compliance obligation. The entity will owe an annual compliance obligation for any year when it is a covered entity for the entire year.

ARB staff is proposing an annual compliance obligation primarily as a safeguard against defaults by emitters. With a three-year compliance period, an entity could run up a large amount of emissions before defaulting. This would leave ARB in the position of having to either make up for the defaulted emissions from another source of reduction or risk having emissions exceed the cap. ARB chose the three-year compliance period to give entities the flexibility to emit early and purchase allowances later in the period. Nonetheless, staff believes a prudent entity would accumulate at least some allowances, even if it chose such a strategy. A partial annual surrender obligation would thus not be a hardship.

This provision is needed because the annual compliance obligation is due in the middle of the year following the actual emissions. ARB was concerned that new covered entities may not have sufficient time to acquire allowances for the annual obligation. Waiving the first annual compliance obligation does not result in any "forgiveness" of emissions. Rather, the entity will simply have to cover the emissions at the end of the three-year compliance period.

Summary of Section 95855(b).

Subsection (b) defines the annual compliance obligation for a covered entity as 30 percent of the entity's reported and verified emissions from the previous year.

Rationale for Section 95855(b).

This provision is necessary because staff believes that setting the annual compliance obligation to 30 percent of an entity's emissions for the previous year will not pose a hardship for a prudent entity, even one that intends to purchase allowances late in the compliance period to cover its emissions. However, it may allow ARB to identify entities failing to meet the 30 percent requirement as risks for eventual default. Staff believes this approach balances the flexibility given to emitters through the three-year compliance period against the need to identify and prevent defaults.

Section 95856. Timely Surrender of Compliance Instruments by a Covered Entity.

Summary of Section 95856(a).

Subsection (a) requires that a covered entity must surrender one compliance instrument for each metric ton of GHG emissions (in CO_2 equivalent) contained in the entity's surrender obligation. Some of the instruments must be surrendered each year, while others are surrendered at the end of the three-year compliance period.

Rationale for Section 95856(a).

This provision is needed to clarify the basic compliance requirement for covered entities. They must turn in allowances or offset credits in amounts equal to their emissions during the compliance period. Covered entities will make a partial surrender each year and cover the remaining emissions at the end of the three-year compliance period.

Summary of Section 95856(b)(1).

Subsection (b)(1) identifies the California compliance instruments; instruments issued by GHG ETS to which California links, and offset credits that are valid for compliance.

Rationale for Section 95856(b)(1).

This provision is needed to clarify which instruments will be accepted by ARB for surrender compliance.

Summary of Section 95856(b)(2).

Subsection (b)(2) states that compliance instruments are issued for a specific allowance budget year, also known as a *vintage year.* With limited exceptions, a

compliance instrument must be issued for a vintage year within or before the year or years for which the obligation is calculated to be valid to meet a surrender obligation.

Rationale for Section 95856(b)(2).

This provision is needed because ARB will issue allowances for vintage years through 2020 at the beginning of the program. In some cases, such as allowances sold at the advance auction, allowances from future vintage years can be purchased and held, but not used for surrender.

The use of compliance instruments from future vintage years for current compliance is known as “borrowing.” Staff is proposing to prohibit borrowing to avoid a scenario known as “cascading borrowing.” If borrowing were allowed, the added supply would reduce current market prices for instruments. This would lead to a reduction in the level of direct emissions reductions, as well as a greater surrender of instruments compared with a scenario of no borrowing. In turn, this would lead to a smaller supply of instruments in future compliance periods, leading to an even greater reliance on borrowing. Ultimately, either the borrowing would lead to the cap being violated or covered entities having to make drastic reductions in a short period of time.

Summary of Section 95856(b)(2)(A).

Subsection (b)(2)(A) states that covered entities will be able to use future vintage allowances years if the allowances are purchased from the Allowance Price Containment Reserve.

Rationale for Section 95856(b)(2)(A).

This provision is necessary because ARB needed a source of allowances in order to fund a credible cost containment reserve. The only source was future vintage allowances, which would be useless as a cost-containment mechanism if they could not be used for compliance when purchased.

Summary of Section 95856(b)(2)(B).

Subsection (b)(2)(B) proposes that covered entities be able to use allowances from future vintages if the allowances are used to fulfill excess emissions obligations.

Rationale for Section 95856(b)(2)(B).

This provision is needed because excess emissions obligations would only be incurred in the year after the year for which a compliance obligation is calculated. There would not be time to accumulate a supply of instruments from the appropriate vintages. In addition, ARB staff wants to avoid having the excess

emissions obligations excessively tighten the market for instruments at the time of compliance deadlines.

Summary of Section 95856(c).

Subsection (c) states that in order to comply with a surrender obligation, a covered entity simply transfers the serial number of valid compliance instruments from its Holding Account to its Compliance Account by the compliance deadline.

Rationale for Section 95856(c).

This provision is needed to simplify the surrender process. The covered entity does not have to submit any documentation on its surrender other than filing a transactions report with the accounts administrator. These transactions are time-stamped and can only be made by the account holder's authorized account representative, so it will not be difficult to verify timely compliance.

Summary of Section 95856(d)(1).

Subsection (d)(1) requires that covered entities that report by April 1 under section 95103 of the MRR must complete their annual compliance obligation by May 15 of the following year.

Rationale for Section 95856(d)(1).

This provision is needed to inform a covered entity of the specific date by which all transfers of compliance instrument to its Compliance Account must be completed.

Summary of Section 95856(d)(2).

Subsection (d)(2) requires that covered entities that report by June 1 under section 95103 of the MRR must complete their annual compliance obligation by July 15 of the following year.

Rationale for Section 95856(d)(2).

This provision is needed to inform a covered entity of the specific date by which all transfers of compliance instrument to its Compliance Account must be completed.

Summary of Section 95856(e)(1).

Subsection (e)(1) states that the Executive Officer will determine the covered entity's triennial obligation compliance based on a review of the positive or qualified verifications statement for the third year of the compliance period.

Rationale for Section 95856(e)(1).

This provision is needed to allow the Executive Officer to review verifications reports and resolve any issues involving verification reports, so that the covered entity can complete timely transfers of compliance instrument to its Compliance Account.

Summary of Section 95856(e)(2).

Subsection (e)(2) states that in the absence of a positive or qualified verifications statement for the third year of the compliance period, the Executive Officer will determine the covered entity's triennial obligation assigning emissions, according to the requirements set forth in section 95130 of the MRR.

Rationale for Section 95856(e)(2).

This provision is needed to allow the Executive Officer to resolve any issues involving missing data or negative verification reports, so that the covered entity can complete timely transfers of compliance instrument to its Compliance Account.

Summary of Section 95856(e)(3).

Subsection (e)(3) states that the Executive Officer will issue a final determination of the covered entity's triennial compliance obligation following a data review and reconciliation process pursuant to section 95104 of the MRR.

Rationale for Section 95856(e)(3).

This provision is needed to allow the Executive Officer to resolve any issues involving missing or problematic data, so that the covered entity can complete timely transfers of compliance instruments to its Compliance Account.

Summary of Section 95856(f)(1).

Subsection (f)(1) requires that a covered entity must complete the transfer of compliance instruments to fulfill its triennial compliance obligation by November 1 of the calendar year following the third year of the compliance period.

Rationale for Section 95856(f)(1).

This provision is needed to inform a covered entity of the specific date by which all transfers of compliance instrument to its Compliance Account must be completed.

Summary of Section 95856(f)(2).

Subsection (f)(2) requires that the number of offset credits used to fulfill the combined annual and triennial surrender obligations is subject to the quantitative use limit on offset credits.

Rationale for Section 95856(f)(2).

This provision is needed to inform a covered entity of the maximum number of offset credits it is allowed to transfer to its Compliance Account to complete the triennial compliance obligation.

Summary of Section 95856(f)(3)

Subsection (f)(3) states that the triennial surrender obligation will account for compliance instruments already surrendered pursuant to the annual compliance obligation.

Rationale for Section 95856(f)(3)

This provision is necessary to clarify that the triennial surrender obligation will account for previously surrendered compliance documents so the covered entity will not be required to resubmit compliance instruments.

Summary of Section 95856(g)(1).

Subsection (g)(1) states that when the Executive Officer has determined that the covered entity has met a surrender obligation, the Executive Officer shall retire the compliance instruments surrendered.

Rationale for Section 95856(g)(1).

This provision is needed to ensure that surrendered instruments can never be used again in California.

Summary of Section 95856(g)(2).

Subsection (g)(2) states that when the Executive Officer has determined that the covered entity has met a surrender obligation, the Executive Officer shall inform programs to which California has linked or that California recognizes that the surrendered compliance instruments have been retired.

Rationale for Section 95856(g)(2).

This provision is needed to ensure that surrendered instruments can never be used again in programs California recognizes or to which California is linked.

Section 95857. Untimely Surrender of Compliance Instruments by a Covered Entity.

Summary of Section 95857(a)(1).

Subsection (a)(1) states that when a covered entity or opt-in covered entity that does not meet the compliance deadline for annual or triennial compliance is subject to the compliance obligation for excess emissions.

Rationale for Section 95857(a)(1).

This provision is needed to clarify when the excess emissions obligation applies.

Summary of Section 95857(a)(2).

Subsection (a)(2) states that when an entity that fails to meet its triennial or annual compliance obligation only because it submitted offset credits that were invalidated upon review by the Executive Officer will not incur an excess emissions obligation.

Rationale for Section 95857(a)(2).

This provision is needed because the Executive Officer may invalidate offset credits after they are issued. ARB staff believes it is possible that the entity submitting the offset credit for compliance may be unaware of the defect, and therefore should only have to replace the invalidated offset credit with a valid compliance instrument, and not face an excess emissions obligation.

Summary of Section 95857(b)(1).

Subsection (b)(1) defines the quantity of excess emissions as the difference between the compliance obligation and any compliance instruments surrendered by the compliance deadline by the covered entity.

Rationale for Section 95857(b)(1).

This provision is needed to define the calculation for excess emissions using two quantities known immediately after the compliance deadline.

Summary of Section 95857(b)(2).

Subsection (b)(2) defines the covered entity's compliance obligation for untimely surrender as four times the entity's excess emissions

Rationale for Section 95857(b)(2).

This provision is needed to provide the calculation for the excess emissions obligation using two quantities known immediately after the compliance deadline. ARB staff is proposing the excess emissions obligation to ensure that no covered entity would knowingly fail to meet its compliance obligations. ARB staff is proposing an in-kind obligation instead of a financial obligation, so that the obligation results in further environmental improvement.

Summary of Section 95857(b)(3).

Subsection (b)(3) states that a covered entity's compliance obligation for untimely surrender may only be fulfilled with allowances issued by California or by a GHG ETS to which California has linked.

Rationale for Section 95857(b)(3).

This provision is needed because ARB staff proposes to not allow the use of offset credits to satisfy the excess emissions obligation so that the obligation results in further environmental improvement.

Summary of Section 95857(c)(1).

Subsection (c)(1) states that an excess emissions obligation is immediately due.

Rationale for Section 95857(c)(1).

This provision is needed because having the obligation due immediately allows the Executive Officer to implement a procedure to obtain the required allowances if the covered entity continues to fail to meet its obligations.

Summary of Section 95857(c)(2).

Subsection (c)(2) states that immediately upon determining that a covered entity has excess emissions, the Executive Officer shall prevent any transfers of compliance instruments from the Holding Account controlled by the covered entity.

Rationale for Section 95857(c)(2).

This provision is needed to prevent entities intending to default on their obligations from transferring instruments from their accounts.

Summary of Section 95857(c)(3).

Subsection (c)(3) states that the Executive Officer shall transfer any remaining allowances from the Holding Account controlled by the covered entity with excess emissions to its Compliance Account until the retirement obligations of this section are met.

Rationale for Section 95857(c)(3).

This provision is needed to give the Executive Officer authority to withdraw compliance instruments from a Holding Account of an entity that has not met its compliance obligations.

Summary of Section 95857(c)(4).

Subsection (c)(4) states that a if the Executive Officer is unable to withdraw sufficient allowances from an entity's Holding Account, the Executive Officer shall

provide the deficient covered entity 30 days to secure the allowances needed to cover its untimely surrender obligation.

Rationale for Section 95857(c)(4).

This provision is needed because ARB staff believes a covered entity would need time to acquire compliance instruments to meet its excess emissions obligations.

Summary of Section 95857(c)(5).

Subsection (c)(5) details a procedure to recover compliance instruments from a covered entity which defaults on its obligations.

Rationale for Section 95857(c)(5).

This provision is needed because ARB must anticipate cases, however unlikely, in which a defaulting entity takes steps to shield compliance instruments from retirement.

Summary of Section 95857(c)(5)(A).

Subsection (c)(5)(A) allows the Executive Officer to identify Holding Accounts controlled by affiliates of the deficient covered entity, to which the covered entity has transferred compliance instruments during the compliance period for which a compliance obligation remains unfilled.

Rationale for Section 95857(c)(5)(A).

This provision is needed to allow the Executive Officer to attempt to recover compliance instruments that should have been surrendered.

Summary of Section 95857(c)(5)(B).

Subsection (c)(5)(B) allows the Executive Officer to prevent transfers from the Holding Accounts belonging to entities with a corporate association to the deficient entity to which a deficient covered entity has transferred allowances, and retrieve allowances from those accounts to meet the untimely surrender obligation.

Rationale for Section 95857(c)(5)(B).

This provision is included to allow the Executive Officer to attempt to recover compliance instruments which should have been surrendered.

Summary of Section 95857(c)(6).

Subsection (c)(6) states that if the covered entity does not surrender sufficient allowances equal to its untimely surrender obligation by the end of the 30-day

period, the Executive Officer may undertake enforcement activities pursuant to Subarticle 15.

Rationale for Section 95857(c)(6).

This provision is needed so that ARB may use additional enforcement measures in case a covered entity does not comply with its untimely surrender obligation following the 30-day period.

Summary of Section 95857(d).

Subsection (d) details the activities the Executive Officer will undertake when the covered entity has complied with its untimely surrender obligations.

Rationale for Section 95857(d).

This provision is needed because there are standard activities that the Executive Officer must undertake after the covered entity has complied with its untimely surrender obligations.

Summary of Section 95857(d)(1).

Subsection (d)(1) requires the Executive Officer to remove the restrictions on transfers from the Holding Accounts controlled by the covered entity and affiliated entities.

Rationale for Section 95857(d)(1).

This provision is needed because once the untimely compliance obligation has been satisfied, there is no further need for the account restrictions.

Summary of Section 95857(d)(2).

Subsection (d)(2) states that the Executive Officer must perform the usual post-surrender activities of retiring the surrendered compliance instruments and informing the programs and GHG ETS to which California is linked of the retirements.

Rationale for Section 95857(d)(2).

This provision is needed because once the untimely compliance obligation has been rectified, the retirement process is the same as for timely compliance.

Summary of Section 95857(d)(3).

Subsection (d)(3) states that the Executive Officer must transfer the allowances used to fulfill the untimely surrender obligation to the Price Containment Reserve.

Rationale for Section 95857(d)(3).

This provision is needed because ARB staff is proposing this feature so that the fulfillment of the untimely surrender obligation does not overly reduce the supply of compliance instruments, and consequently raise their price. Placing these instruments in the Reserve will make them available at the Reserve release prices.

Subarticle 8. Disposition of Allowances.

Section 95870. Disposition of Allowances.

Summary of Section 95870, Disposition of Allowances.

Section 95870 specifies how the total number of allowances available from each allowance budget will be divided. Each allowance is dedicated to one of the following categories: Allowance Price Containment Reserve, Advance Auction, Allocation to Electrical Distribution Utilities, Allocation to Industrial Covered Entities, or Auction Proceeds for AB 32 Statutory Objectives.

Summary of Section 95870.

This section is necessary to divide the value embodied by the tradable allowances among various AB 32 purposes. The first two categories—Allowance Price Containment Reserve and Advance Auction—enhance the operation of the allowance market by containing allowance price and providing a long-term signal about expected future prices. Dedicating allowances to electrical distribution utilities protects ratepayers from the costs of AB 32 programs. Distributing allowances to industrial covered entities helps to maintain the competitiveness of California industry and minimizes the risk of emissions leakage. Allocating allowances for the purpose of auction allows the Legislature to use auction proceeds for AB 32 purposes and protects fuel customers from the costs of AB 32 programs.

Summary of Section 95870(a). Allowance Price Containment Reserve.

Subsection (a) proposes to allocate allowances to the Allowance Price Containment Reserve. One percent of the allowances from the first compliance period will be allocated to the price containment reserve. Four percent of the allowances from the second compliance period will be allocated to the price containment reserve. Seven percent of the allowances from the third compliance period will be allocated to the price containment reserve.

Rationale for Section 95870(a).

The price containment reserve is expected to assist in maintaining allowance prices within a specific price range. The desired range was determined through the economic analysis of the cap-and-trade program, consideration of similar proposals in federal climate policy, and feedback from stakeholders.

The amount of allowances dedicated to the Reserve was selected based on an understanding of what size of reserve was necessary to provide the desired price containment. The level of allowances placed in the Reserve was matched with an introduction of additional offsets due to an expansion of the quantitative offset limit (relative to the level proposed in the Preliminary Draft Regulation). Placing a greater percentage of allowances to the Reserve from later periods enhances surety of price containment goals in the early years of the program.

Summary of Section 95870(b). Advance Auction.

Subsection (b) proposes to designate 2 percent of allowances from budget years 2015 through 2020 for auction in prior compliance periods. Selling allowances from future compliance periods in the current period is known as *advance auctioning.* Subsection (b)(2) proposes that proceeds from the sale of allowances from future budget years be used in the same way as proceeds from other allowances auctioned pursuant to subsection 95870(e).

Rationale for Section 95870(b).

Auctioning allowances from future budget years in a current compliance period provides a price signal to the market about expectation of future prices. This is valuable for covered entities planning long-term investments in GHG abatement. Staff determined that advance auctioning 2 percent of the budgets from the second and third compliance periods ensured that enough allowances will be available for other purposes in these later years, while still allowing for a future price signal to be established.

AB 32 requires that all proceeds raised through programs enacted under the authority of AB 32 be placed into the Air Pollution Control Fund for appropriation by the Legislature (HSC 38597). Therefore, proceeds raised through advance auction will be placed into this fund.

Summary of Section 95870(c). Allocation to Public Utilities.

Subsection (c) describes how allowances will be given to public utilities. It includes allowances allocated to electrical distribution utilities and natural gas distribution utilities.

Rationale for Section 95870(c).

Free allocation of allowances to public utilities on behalf of their customers is designed to help offset the cost impacts of AB 32 policies. This is described in more detail for each type of utility below.

Summary of Section 95870(c)(1), Electrical Distribution Utilities.

Subsection (c)(1) describes how allowances will be given to electrical distribution utilities on behalf of the ratepayers in their distribution service territory. The

utilities will receive a total of 89 million allowances from budget year 2012, and this amount will decline at the rate established for the cap decline factor in subsequent years through 2020. These allowances will be placed into the accounts of distribution utilities annually.

Rationale for Section 95870(c)(1).

Free allocation of allowances to electrical distribution utilities on behalf of their customers (ratepayers) is designed to help offset the cost impacts of AB 32 policies. The initial allocation to distribution utilities was selected by comparing the historical proportionate share of emissions produced from electricity (generated and placed on California's transmission and distribution network) relative to total emissions covered in the cap-and-trade program. In making this calculation, staff used 2008 emissions shares to determine the percentage for the 2012–2014 budget years. This value was then adjusted downward consistent with the cap decline factor, which is set consistent with the rate of decline of the overall cap during the first compliance period.

Summary of Section 95870(c)(2). Natural Gas Distribution Utilities.

Subsection (c)(2) is reserved for any possible future allocation to natural gas distribution utilities on behalf of their customers.

Rationale of Section 95870(c)(2).

The natural gas utilities have requested allowances on behalf of their customers. The proposed regulation does not currently provide for allocation to natural gas distribution utilities but leaves this subsection as a placeholder for such a provision in the future.

Summary of Section 95870(d). Allocation to Industrial Covered Entities.

Subsection (d) proposes to allocate allowances to industrial sectors for the purposes of industry assistance. The allowances will be transferred annually to each eligible covered entity's Holding Account. The amount of allowances that each eligible industrial sector receives will be based on the assistance factors, as provided in Table 8-1 of Regulation. Subsection (d)(3) ensures that the total amount allocated to the Allowance Price Containment Reserve, advance auction, electrical distribution utilities, and to industrial covered entities does not exceed the total allowance budget levels.

Rationale for Section 95870(d).

Industry assistance is necessary to provide a smooth transition into the cap-and-trade program for industrial covered sources that face a competitiveness risk. The level of assistance allocated will decline over time to a minimum level necessary to prevent emissions leakage as industrial sources adapt to carbon constraints. To align with federal mandatory reporting requirements for product

output reporting, allocation to industrial covered entities is based on an annual cycle. The table included in this section reflects ARB's assessment of industry needs to ensure that covered entities can plan for future compliance obligations.

Summary of Section 95870(e), Allocation to Voluntary Renewable Energy Allowance Set-Aside.

Subsection (e) is reserved for any possible future allocation to a voluntary renewable energy allowance set-aside.

Rationale for Section 95870(e).

The cap-and-trade program could have negative effects on the voluntary renewable energy (VRE) market that could be addressed through a voluntary renewable energy allowance set-aside. The proposed regulation does not currently provide for allocation of voluntary renewable energy allowance set-aside, but leaves this subsection as a placeholder for such a provision in the future.

Summary of Section 95870(f). Auction Proceeds for AB 32 Statutory Objectives.

Subsection (e) describes how the remaining allowances will be sold at auction, and how the proceeds will be placed in the Air Pollution Control Fund and made available for appropriation by the California Legislature. The Legislature will then direct how these proceeds will be used to protect fuel consumers and accomplish the statutory objectives of AB 32.

Rationale for Section 95870(f).

AB 32 requires that all proceeds raised through programs enacted under the authority of AB 32 be placed into the Air Pollution Control Fund for appropriation by the Legislature (HSC 38597).

Subarticle 9. Direct Allocations of California GHG Allowances.

Section 95890. General Provisions for Direct Allocations.

Summary of Section 95890. General Provisions for Direct Allocations.

Section 95890 specifies the requirements that entities must meet to be eligible for free allowances. This requirement includes complying with the MRR and obtaining a positive or qualified positive verification statement.

Rationale for Section 95890.

This section is necessary because the amount of allowances that a covered entity receives annually must be based on verified output data reported through the MRR process. Verified data ensures the level of free allowances that a

covered entity receives is accurate and has been checked by an ARB accredited verifier.

Section 95891. Allocation for Industry Assistance.

Summary of Section 95891(a).

Subsection (a) explains how ARB will determine which benchmarking methodology will be used to calculate the number of free allowances that each leakage-exposed industrial covered entity will receive. For entities that are listed in both tables 8-1 and 9-1 of the Regulation, the benchmarking methodology will be based on product output. For entities that are listed in Table 8-1 but not in Table 9-1 the benchmarking methodology will be based on energy consumption. Entities that are not listed in Table 8-1 will not receive free allocation under this provision.

Rationale for Section 95891(a).

Product-based benchmarks set an allocation level based on a unit of output. Staff proposes to apply product-based allocation as the preferred methodology to provide transition assistance and prevent leakage. This section is necessary because product-based allocation creates all of the correct incentives to produce a given product in the most GHG-efficient way possible and to minimize leakage.

For industrial activities with a competitiveness or leakage risk for which a product-based allocation cannot be developed, staff proposes a ”fallback” allocation methodology based on benchmarking energy consumption choices.

Summary of Section 95891(b), Product Output-Based Allocation Calculation Methodology.

Subsection (b) proposes a formula to calculate the number of allowances given to each eligible covered entity based on the product output-based benchmarking methodology. The number of allowances for each eligible, covered entity will be determined by multiplying a facility’s output by the sector-wide emissions efficiency benchmark specified in Table 9-1. A facility’s output is based on the three most recently reported data years. The allocation is then adjusted by the sector-wide assistance factor specified in Table 8-1, and the sector-specific cap adjustment factor specified in Table 9-2 of the Regulation.

Rationale for Section 95891(b).

This provision is necessary to calculate how many allowances each eligible covered entity will be given for industry transition assistance and leakage prevention and to provide certainty to covered entities.

Summary of Section 95891(c), Thermal Energy-Based Allocation Calculation Methodology.

Subsection (c) proposes a formula to calculate the number of allowances given to each eligible covered entity based on benchmarking of energy consumption practices. The number of allowances for each eligible covered entity will be determined by multiplying the sector-specific assistance factor specified in Table 8-1 of the Regulation by the program-wide cap adjustment factor specified in Table 9-2, and an energy consumption term. The energy consumption term is dependent on the uses of fuel and steam at a given facility during the 2000–2010 historical baseline period.

Rationale for Section 95891(c).

This provision is necessary to calculate how many allowances each eligible, covered entity will be given for industry assistance using the energy-based allocation. The energy-based allocation is used because the only alternative is to calculate the allocation based on specifics of each facility or develop a product-based allocation for all industry, which is not feasible at this time.

Staff proposes that entities should receive either direct or indirect allocations to reduce GHG costs for energy consumed in a leakage-exposed manufacturing process. Energy embodied in steam consumed in the process and energy from direct fire applications receives a direct allocation through the thermal energy formula. Energy for electricity produced and consumed on-site also receives a direct allocation to offset direct GHG costs in the manufacturing process.

Thermal energy used to produce steam and electricity exported off-site receives no compensation because staff assumes that GHG costs can be passed on to the consumer of this energy.

Electricity purchased from off-site is not part of the thermal energy-based allocation equation but receives indirect compensation through distribution utility to offset the expected indirect GHG costs, as described in Section 95892.

The thermal energy consumed from the fuel combustion benchmark is based on GHG emissions levels from natural gas combustion, the dominant fuel used in California manufacturing facilities.

For energy embodied in the steam consumed by each facility, the benchmark is based on comparison to a theoretical boiler combusting natural gas with an assumed efficiency of 85 percent. This is intended to represent a highly efficient industrial boiler.

Summary of Section 95891(c)(1), Data Sources.

Subsection (c)(1) indicates the data sources that staff proposes ARB employ when calculating baseline levels of allocation to covered entities under the thermal energy-based methodology.

Rationale for Section 95891(c)(1).

Staff proposes that establishing the facility baselines under the thermal energy-based allocation method would employ data reported to ARB under the MRR. Any data that can be third-party verified and reported to ARB for the 2000–2010 base period will be evaluated by the Executive Officer. Staff proposes supplementing these data with an analysis of third-party verified data reported to the California Climate Action Registry (CCAR) for years 2000–2007 as available. These data sources have been chosen because staff believes that the third-party verified data reports submitted to ARB and CCAR represent the most accurate data for California facilities currently available.

Summary of Section 95891(c)(2), Maximum Free Allocation.

Subsection (c)(2) establishes an absolute limit on the level of free allocation under the thermal energy-based allocation relative to historical GHG emissions levels from a given facility. This limit is set at 110 percent of the maximum annual emissions during the baseline period.

Rationale for Section 95891(c)(2).

The thermal energy-based allocation is intended to reward facilities that have taken early action and chosen low-GHG fuels and/or employed efficient steam-generation systems. This reward occurs through allocating free allowances greater than expected compliance obligation to these facilities. This section is necessary to prevent the level of this reward from becoming excessive, and is constrained by other desired uses of allowance value. Staff proposes that the 110 percent of maximum historical emissions levels is sufficient reward to recognize early action and to ensure that early actors who have already taken on reductions equal to that required by the decline in allowance budgets over the 2012–2020 period are buffered from the impact of the declining (cap adjustment factor) term.

Summary of Section 95891(c)(3), New Entrants.

Subsection (c)(3) describes how covered entities for eligible industrial facilities new to the cap-and-trade program will receive allowances under the thermal energy-based allocation.

Rationale for Section 95891(c)(3).

The thermal energy-based allocation relies on information from a historical base period. To the extent that facilities did not operate or exist during this base period, the Executive Officer will need to assign a baseline level of allocation based on anticipated energy use to allocate allowances to these facilities.

Summary of Section 95891(c)(4), Facility Closures.

Subsection (c)(4) clarifies that covered entities will not continue to receive free allocation for any facilities that close or are no longer covered by the cap-and-trade program.

Rationale for Section 95891(c)(4).

Staff believes that continuing free allocation to covered entities that cease activities in California would create an incentive for leakage. Therefore, firms that close operations in California will no longer receive free allocations.

Firms that fall below the emissions inclusion thresholds due to GHG abatement can voluntary choose to remain in the cap-and-trade program as opt-in covered entities and continued to receive free allocation.

Section 95892. Allocation to Electrical Distribution Utilities for Protection of Electricity Ratepayers.

Summary of Section 95892(a).

Subsection (a) is reserved for the formula by which electrical distribution utilities will receive allowances on behalf of their ratepayers.

Rationale for Section 95892(a).

The allocation formula for distribution of allowances to electrical distribution utilities must further the cap-and-trade emissions-reduction objectives, including providing incentives to reduce emissions cost-effectively. Additionally, the allocation must enable all the utilities to serve their customers reliably and affordably. Details of the formula will be developed based on comments received during the 45-day comment period on the proposed regulation, and will be circulated for review in a subsequent 15-day comment period.

Summary of Section 95892(b). Transfer to Utility Accounts.

Subsection (b) explains that investor-owned utilities (electrical corporations) will receive free allocation into a special type of account called a Limited Use Holding Account. Publicly owned utilities will have the option to have allocations distributed to their limited use Holding Accounts or to their Compliance Accounts.

Rationale for Section 95892(b).

Distribution utilities that plan to monetize allowances on behalf of their ratepayers will receive a free allocation into limited use Holding Accounts. All allowances given to investor-owned utilities are required to be monetized. The publicly owned utilities have more flexibility. The transactions of allowances to and from limited use Holding Accounts will have special restrictions in the market tracking system.

Summary of Section 95892(c), Monetization Requirement.

Subsection (c) requires that distribution utilities offer each freely allocated allowance placed into a limited-use Holding Account at auction at least once in the calendar year corresponding to the budget year from which that allowance was issued.

If an allowance is not sold in the calendar year corresponding to the allowance's budget year (i.e., if the auction reserve price is not met for that allowance) the retail provider must offer this allowance at auction at least once in each of the following calendar years until it is sold.

Rationale for Section 95892(c).

Monetization of allowances through auction is intended to ensure that the amount of value given to distribution utilities is transparent to the public, and that this value is used on behalf of electricity ratepayers. This practice will also ensure that freely allocated allowances to a distribution utility will not impact competition in the electricity generation market (where utilities compete with merchant power producers).

This condition on allocating allowance value to distribution utilities was recommended to ARB by the California Public Utilities Commission and the California Energy Commission.

Summary of Section 95892(d), Limitations on the Use of Auction Proceeds.

Subsection (d) establishes limitations on how a distribution utility can use proceeds raised from the sale of allowances at auction.

Rationale for Section 95892(d).

These limitations ensure that allowance value given to a distribution utility will be used on behalf of ratepayers and in ways that are consistent with AB 32 statutory objectives.

Summary of Section 95892(d)(1) and 95892(d)(2).

Subsections (d)(1) and (d)(2) clarify that distribution utility proceeds from the sale of allowances at auction will be subject to limitations imposed by either the California Public Utilities Commission or by the governing bodies of publicly owned utilities.

Rationale for Section 95892(d)(1) and 95892(d)(2).

Proceeds from sale at allowances at auction will generate a new revenue stream for a distribution utility. This revenue stream will need to be accounted for along

with all other revenues and costs in the ratemaking actions of the CPUC and the governing bodies of the POUs.

Summary of Section 95892(d)(3).

Subsection (d)(3) clarifies that the statutory goals of AB 32 apply to all utility proceeds raised through auctioned allowances and that all proceeds must be used to the benefit of ratepayers rather than for the benefit of shareholders (or any other entities). Further limitations are placed on how rebates directly to customers must function.

Rationale for Section 95892(d)(3).

Limiting the use of proceeds on behalf of ratepayers and for the purposes of AB 32 ensures that distribution utility adopt programs that support GHG reductions and minimize cost of these programs to their customers.

Limiting customer rebates such that they appear on the fixed portion of customer bills and cannot be based solely on the amount of electricity consumed in any period after 2012 is intended to create an incentive to use less electricity and create a GHG price signal in retail electric rates.

Summary of Section 95892(e), Reporting on the Use of Auction Proceeds.

Subsection (e) requires that distribution utilities report to ARB on how they use proceeds generated from the sale of allowances at auction.

Rationale for Section 95892(e).

This provision will ensure transparency on how distribution utilities use allowance value and demonstrate that this value is used for the purposes of AB 32 implementation.

Section 95893. Reserved for Allocation to Natural Gas Distribution Utilities for Protection of Natural Gas Ratepayers.

Summary of Section 95893.

Section 95893 is reserved for the details of any possible future allocation method to individual natural gas distribution utilities on behalf of their customers.

Rationale for Section 95893.

The natural gas utilities have requested allowances on behalf of their customers. The proposed regulation does not currently allow for allocation to natural gas distribution utilities but leaves this section as a placeholder for such a provision in the future.

Subarticle 10. Auction and Sale of California Greenhouse Gas Allowances.

Section 95910. Timing of Auction of California GHG Allowances.

Summary of Section 95910(a), Timing of Allowance Auctions.

Subsection (a) sets a quarterly schedule for auctions.

Rationale for Section 95910(a).

The provision is needed because ARB must inform potential auction participants of the schedule for the quarterly auctions. ARB chose a quarterly auction to balance the costs of running auctions against the need to have a frequent price signal to the market.

Summary of Section 95910(a)(1).

Subsection (a)(1) states that the first auction will take place on February 14, 2012.

Rationale for Section 95910(a)(1).

The provision is needed because ARB must inform potential auction participants of the schedule for the quarterly auctions. This schedule places an auction close to the beginning of the program. Some stakeholders indicated they intend to purchase allowances as they emit, so ARB must get a supply into the market at the beginning of the program.

Summary of Section 95910(a)(2).

Subsection (a)(2) states that after the first auction, quarterly auctions will take place on the twelfth business day of the first month of each calendar quarter.

Rationale for Section 95910(a)(2).

The provision is needed because ARB must inform potential auction participants of the schedule for the quarterly auctions.

Summary of Section 95910(b).

Subsection (b) states that ARB may auction allowances created for future allowance budget years during each auction.

Rationale for Section 95910(b).

The provision is needed because ARB will allow entities to purchase allowances from future budget years to allow them to plan their purchases over a longer time horizon. However, they will not be able to use these allowances for compliance prior to their vintage year.

Summary of Section 95910(c)(1).

Subsection (c)(1) states that ARB will auction one-fourth of the allowances designated for auction each year at each quarterly auction.

Rationale for Section 95910(c)(1).

The provision is needed because ARB believes spreading the auction of allowances evenly through the year will provide for a more predictable entry of new supply to the market. This should allow for easier planning of allowances purchases by auction participants.

Summary of Section 95910(c)(2).

Subsection (c)(2) states that ARB will auction one-fourth of the allowances from future budget years, which are designated for auction each calendar year, at each quarterly auction.

Rationale for Section 95910(c)(2).

The provision is needed because ARB believes spreading the auction of allowances evenly through the year will provide for a more predictable entry of new supply to the market. This should allow for easier planning of allowances purchases by auction participants.

Summary of Section 95910(c)(3).

Subsection (c)(3) states that ARB will conduct separate auctions for current and future vintage allowances during each quarter.

Rationale for Section 95910(c)(3).

The provision is needed because auctions must be conducted separately, as future vintage allowances cannot be used for current compliance. ARB expects that separate auctions would result in different prices for current and future vintage allowances because the auction price of future vintage allowances will reflect bidders' evaluation of future prices and the added interest costs of buying and holding allowances that cannot be used for compliance right away.

Summary of Section 95910(d)(1).

Subsection (d)(1) states that ARB will not just auction allowances from its annual allowance budget. ARB will allow electrical distribution utilities to have ARB auction some allowances held by the entities, in what is known as a *consignment* auction. Only an entity with Limited Use Holding Account may use the consignment feature.

Rationale for Section 95910(d)(1).

The provision is needed because ARB has identified instances in which electrical distribution utilities should be allowed to sell allowances through ARB's auction. ARB intends to directly allocate allowances to the electrical distribution utilities for the benefit of their ratepayers. ARB chose the consignment auction feature to ensure that proceeds from the sale of the allowances benefit the ratepayers. ARB will assign the electrical distribution utilities Limited Use Holding Accounts to receive direct allocations of allowances from ARB. Once allowances are in the Limited Use Holding Account, the electrical distribution utilities may only consign them to the auction and cannot use them for any other purpose.

Summary of Section 95910(d)(2).

Subsection (d)(2) states that pursuant to 95831, ARB may close or revoke a Holding Account due to rule violations or a lack of activity by an entity. In these cases ARB will give the entity time to sell or retire the allowances in the account. If the entity does not do this, ARB will consign the allowances to the auction and then close the account. If the account contains offset credits, then the Executive Officer will review the validity of the offset credits. If they are valid, the Executive Officer will retire them, withdraw the same number of allowances from the Auction Holding Account, and consign them to the next auction in place of the offset credits.

Rationale for Section 95910(d)(2).

The provision is needed because if an entity is no longer participating in the system, its account must be closed. ARB must be able to transfer any remaining allowances to another account. The only method available is to consign them to the auction. This is straightforward for allowances, but ARB will not be auctioning offset credits. If offset credits are withdrawn from a closed account, the Executive Officer will determine if they are valid. If they are not, they will immediately be invalidated and their serial numbers removed from the tracking system. The account holder will receive no payment for them. If the review shows the offset credits are valid, they will be retired and the Executive Officer will withdraw the same number of allowances from the Auction Holding Account and consign them to the auction in place of the offset credits.

Summary of Section 95910(d)(3).

Subsection (d)(3) states that anyone using the consignment option agrees to accept the auction settlement price.

Rationale for Section 95910(d)(3).

The provision is needed because auction results are uncertain. Those entities using the consignment auction must commit to the auction before they know the auction settlement price.

Summary of Section 95910(d)(4).

Subsection (d)(4) states that entities must have consigned allowances at least 60 days before the auction date for them to be sold at the next auction. Otherwise, ARB will hold the consigned allowances for the next auction.

Rationale for Section 95910(d)(4).

The provision is needed because ARB must have time to complete the administrative procedures for the consignment auction before the auction takes place, including publishing the number of allowances that will be sold at the next auction.

Section 95911. Format for Auction of California GHG Allowances.

Summary of Section 95911(a)(1).

Subsection (a)(1) requires a single-round auction.

Rationale for Section 95911(a)(1).

The provision is needed because ARB staff determined that a single-round format would reduce costs to auction participants and to ARB, compared with a multiple-round auction format.

Summary of Section 95911(a)(2).

Subsection (a)(2) requires auction participants to submit sealed bids.

Rationale for Section 95911(a)(2).

The provision is needed to reduce the chances for collusion among auction participants. Other sections in this subarticle contain rules designed to prevent participants from sharing information that could result in collusion.

Summary of Section 95911(a)(3).

Subsection (a)(3) requires auction participants to submit bids for allowances in multiples of 1,000 metric tons.

Rationale for Section 95911(a)(3).

The provision is needed to simplify the auction process. Covered entities face a minimum threshold of 25,000 tons. Even with a minimum quantity of 1,000 tons per bid the smallest covered entity could spread out its purchases over a large number of auctions or bid prices.

Summary of Section 95911(a)(4).

Subsection (a)(4) requires auction participants to submit bids in whole dollars and whole cents.

Rationale for Section 95911(a)(4).

The provision is needed to simplify bidding and auction operations.

Summary of Section 95911(b)(1) and (b)(2).

Subsections (b)(1) and (b)(2) set a reserve price for each auction. The auction operator will not accept bids below the reserve price. No allowances can be awarded to bids below the reserve price.

Rationale for Section 95911(b)(1) and (b)(2).

These provisions are needed because staff determined that a reserve price, which is a minimum price for an auction, should be used for the auction. The reserve price will be announced prior to the deadline for submitting bids.

Most auctions use a reserve price. There are many reasons for using a reserve price. First, someone auctioning a good may have another way to sell or use the item. They would not accept an auction price for less than the value they could get from an alternative use or method of sale. Second, auction operators may use a reserve price to deter collusion. Collusion can occur if bidders are capable of communicating with other bidders and agreeing to submit low bids. The reserve price limits how far collusion could drive down prices. Third, in the case of GHG allowances, ARB may choose to use a reserve price to incent direct reductions by compliance entities or to support investment in offset projects. If allowances are abundant and there is no reserve price, it may be cheaper for covered entities to purchase allowances and not make any direct reductions. A reserve price would create an incentive for covered entities to find direct reductions that cost less than the reserve price. Similarly, if allowances are overabundant then they may cost less than what it would cost to operate a project to create offset credits. ARB could determine a price at which investment in some offset projects would be cost-effective.

ARB proposes an auction reserve price to provide a price floor to support investment in direct reductions and offset credit projects. ARB's cost containment approach requires the steady production of offset credits. If these do not materialize the Allowance Price Containment Reserve will not provide price stability because market participants will realize that the diversion of future vintage allowances to the Allowance Price Containment Reserve will result in a shortage of allowances in later compliance periods. ARB has also observed that a prolonged period of low allowance prices in the Northeast Regional Greenhouse Gas Initiative (RGGI) market has not supported incentives for the creation of offset credits.

Summary of Section 95911(b)(3).

Subsection (b)(3) describes how the auction operator will award allowances when an auction settlement price equals the minimum reserve price.

Rationale for Section 95911(b)(3).

The provision is needed because when the settlement price equals the reserve price there will be allowances left over. Since the allowances at any given auction may come from several sources, ARB needs to determine in what order allowances will be sold from each source.

Summary of Section 95911(b)(3)(A).

Subsection (b)(3)(A) lists the sources of allowances that are auctioned. When the auction results in some allowances left over, the auction operator will sell allowances from one source until all the allowances from that source are sold. The operator will then move on to the next source. The sales will be conducted from sources in the following order: allowances consigned from closed, revoked, or suspended accounts; allowances consigned from Limited Use Holding Accounts; and finally, allowances allocated directly to auction by ARB.

Rationale for Section 95911(b)(3)(A).

The provision is needed because ARB may need to return unsold allowances to their source accounts. Since this is not possible for allowances from closed, suspended, or revoked accounts, this source is given the first sales priority. The next sources are those entities consigning allowances. ARB intends to give these sources the next sales priority to simplify the consignment process. The lowest priority source is the ARB Auction Holding Account. ARB assigns this the lowest priority because it is easy for ARB to redirect the unsold allowances from this source to the Allowance Price Containment Reserve.

Summary of Section 95911(b)(3)(B).

Subsection (b)(3)(B) states that if the auction operator fills all winning bids before exhausting all allowances from one of the consigned sources, the auction operator will sell an equal number of allowances from each consigning entity in that source category.

Rationale for Section 95911(b)(3)(B).

The provision is needed because as the auction operator sells from one of the consignment source categories described above, it may fill all winning bids before every allowance from that source is sold. In this case, the auction operator will sell an equal number of allowances from each entity in that consignment category.

Summary of Section 95911(b)(4).

Subsection (b)(4) states that allowances designated by ARB for a quarterly auction which remain unsold will be transferred to the highest price tier of the Allowance Price Containment Reserve Holding Account.

Rationale for Section 95911(b)(4).

The provision is needed because allowances transferred from the Allocation Holding Account to the Auction Holding Account will not go back to the Allocation Holding Account if they remain unsold. Instead, ARB will transfer them to the Allowance Price Containment Reserve Holding Account. Once in that account, they may be purchased by covered entities pursuant to 95913. Allowances will remain unsold during times of oversupply and lower prices. ARB considered holding them over until the next auction, but that simply continues the oversupply. Placing them in the Reserve will make them available during periods of shortage and higher prices. ARB proposes to place them in the highest price tier because it is possible that all of the allowances in the lower tiers may be sold, at which point ARB will close those tiers to further sales.

Summary of Section 95911(b)(5)(A).

Subsection (b)(5)(A) states that allowances consigned to auction from Limited Use Holding Accounts that remain unsold at auction will be returned to their source accounts.

Rationale for Section 95911(b)(5)(A).

The provision is needed if the auction settlement price equals the Reserve Price, then some allowances remain unsold. ARB must return them to the accounts from which they were consigned. This allows the account holders to determine when is the best time to consign the allowances.

Summary of Section 95911(b)(5)(B).

Subsection (b)(5)(B) states that allowances removed from closed Holding Accounts that remain unsold at auction will be held in the Auction Holding Account until the next auction.

Rationale for Section 95911(b)(5)(B).

The provision is needed because once a Holding Account is closed, allowances cannot be transferred back to it. The only option for allowances transferred from a closed account to the auction is to retain the allowances in the Auction Holding Account until they are sold, and the proceeds sent on to the entity with the closed account.

Summary of Section 95911(b)(6)(A).

Subsection (b)(6)(A) states that for auctions conducted during 2012, the auction Reserve Price shall be $10 for the auction of allowances from the 2012 allowance budget year, and $11.58 for the auction of allowances from the 2015 allowance budget year.

Rationale for Section 95911(b)(6)(A).

Staff proposes a $10 initial reserve price for auctions beginning in 2012 to provide incentives for direct emissions reductions and the investment in offset credit projects. The reserve price for the advance auction will start at $11.58 to reflect the rate at which the reserve price will increase each year. (Subsection 95911(b)(6)(B) explains how staff determined the inflator mechanism.)

Staff chose the $10 reserve price for two reasons. First, staff are concerned that through recessionary economic conditions or forecasting error the cap-setting procedure may accidently lead to the creation of excess allowances. Throughout the regulatory process, staff heard concerns from environmental groups that the cap would be unintentionally set too lax—a condition sometimes referred to as *oversupply* or *over-allocation.* The over-allocation condition occurs if too many allowances are supplied to covered entities relative to expected business-as-usual emissions levels. If the cap is set too loose, prices will be lower than expected, and a weakened incentive to reduce emissions will be created. The reserve price mechanism would correct this condition by transferring excess allowances to the Allowance Price Containment Reserve, where they will be available in times of high prices.

Second, staff is adapting the approach used in the federal Waxman-Markey proposal (HR 2454), which proposed a reserve price of $10 with an inflator mechanism of 5 percent per year plus inflation.

Summary of Section 95911(b)(6)(B).

Subsection (b)(6)(B) states that for auctions conducted after 2012, the auction reserve prices for the current and advance auctions from the previous year will each be increased by 5 percent plus the Consumer Price Index for All Urban Consumers.

Rationale for Section 95911(b)(6)(B).

Staff proposes an inflator mechanism based on the expectation that marginal abatement costs and offset project costs will increase over time as lower cost-abatement measures are undertaken first, and due to inflation. Auction reserve prices would need to increase to reflect the increased marginal abatement cost and the inflation rate; otherwise, the reserve price would no longer support direct reductions and offset projects as intended.

ARB's staff economic analysis assumed a rate of increase in marginal abatement costs of 7 percent, without factoring in inflation. Staff proposes to increase the reserve price by 5 percent, plus inflation each year, so that the reserve price continues to support direct reductions and offset investment as those become more expensive. At the same time, the reserve price will rise more slowly than the expected marginal abatement cost so that the reserve price does not make the program unnecessarily more expensive.

Summary of Section 95911(c).

Subsection (c) states that ARB will limit the share of the allowances at an auction that can be purchased by an entity or group of entities that has a corporate association under section 95914 to a fixed percentage. The limit will apply from 2012 through 2014.

Rationale for Section 95911(c).

The provision is needed because ARB has determined that a purchase limit should apply at each auction, to ensure that a few entities do not obtain market power through purchases at the auctions. Purchase limits are common features at existing auctions. For example, RGGI applies a 25 percent purchase limit to its auctions of GHG allowances.

ARB is proposing the limit for the first compliance period and will set the limit for subsequent periods in a later rulemaking. ARB is proposing this approach for three reasons. First, ARB will have a better understanding of the compliance needs of larger entities when new reporting data become available for the expanded scope of the program during the second compliance period. Second, ARB recognizes that the market will take time to develop, and it may be necessary to revise the limit based on actual market experience. Third, ARB intends to link with WCI jurisdictions at some point, but WCI has not arrived at a decision on purchase limits. ARB may have to revise the limit to account for the size distribution of covered entities in the WCI.

Summary of Section 95911(c)(1).

Subsection (c)(1) states that the purchase limit will be 10 percent for covered entities and opt-in covered entities.

Rationale for Section 95911(c)(1).

The provision is needed to base the purchase limit on an assessment of the holding limit and limited exemption for the larger covered entities in California. The holding limit with the limited exemption, contained in 95920, would constrain the largest covered entities in California to about 10 percent of the allowances issued annually. The purchase limit constrains them to purchase no more than the same share at auction. Staff believes this level will allow them to purchase sufficient allowances at auction given the direct allocations planned for the first compliance period. Smaller entities will have more flexibility.

Summary of Section 95911(c)(2).

Subsection (c)(2) states that the purchase limit will not apply to electrical corporations receiving a direct allocation of allowances which they may only consign to auction. The section may not be interpreted to exempt the entities

from any other requirements, especially the holding limit contained in Subarticle 11.

Rationale for Section 95911(c)(2).

This provision is needed due to the complexity of evaluating the compliance obligations of electrical corporations which import large amounts of electricity. ARB proposes to exempt these entities for three reasons. First, the only way to accommodate their compliance needs would be to raise the purchase limit to a point at which the limit has no effect on any entity. Second, these entities do not receive an allocation of allowances that they can use for their own compliance needs. They must purchase their entire obligation at auction or in the secondary market. Other covered entities participating in the auction do not face this constraint. Third, these entities are also regulated by the California Public Utilities Commission. The exemption from the purchase limit does not exempt them from other requirements of this regulation.

Summary of Section 95911(c)(3).

Subsection (c)(3) states that the purchase limit will be 4 percent for voluntarily associated entities.

Rationale for Section 95911(c)(3).

The provision is needed to base the purchase limit on an assessment of the holding limit without the limited exemption. Voluntarily associated entities do not qualify for the exemption. Based on current estimates of the 2012 allowance budget, the holding limit will allow voluntarily associated entities to hold about 4 percent of the annual allowance budget. The purchase limit allows them to purchase at auction in the same proportion

Summary of Section 95911(d).

Subsection (d) states that the auction process will generate a single, or “uniform,” auction settlement price. All entities winning allowances will pay the same price for them.

Rationale for Section 95911(d).

The provision is needed to use a single price auction format instead of a “pay-as-bid” format. Staff concluded that the uniform price format would make it easier for bidders to bid their true valuation of the allowances with less risk of overpaying for allowances.

Summary of Section 95911(d)(1).

Subsection (d)(1) states that each bid will consist of a price and the number of allowances to be purchased at that price. The quantity must be in multiples of 1,000 metric tons.

Rationale for Section 95911(d)(1).

The provision is needed to conduct a single-round, uniform price auction. The requirement that bid quantities be in units of 1,000 allowances was chosen to simplify the auction process. Since covered entities would have obligations greater than 25,000 metric tons per year, staff concluded that the requirement would not prevent them from being able to spread out their purchases over a large number of separate bids.

Summary of Section 95911(d)(2).

Subsection (d)(2) states that each bidder may submit multiple bids.

Rationale for Section 95911(d)(2).

The provision is needed because bidders may use multiple bids to attempt to get most of their allowances when prices are low. Allowing multiple bids means that bidders can speculate on what the settlement price may be, while still ensuring they can purchase at least some allowances. For example, an entity may place one high bid because it has decided it needs at least that number of allowances at no more than a particular price. It may then place one or more bids at much lower prices, perhaps even below the price the entity expects, just in case the auction settles at an unusually low price. The only constraints on the bids are the purchase limit and the value of the bids compared to the value of the bid guarantee the bidder is willing to supply.

Summary of Section 95911(d)(3).

Subsection (d)(3) states that the auction operator will place the bids in declining order, from highest to lowest bid price.

Rationale for Section 95911(d)(3).

The provision is needed because placing the bids in declining price order allows the auction operator to determine whether the bids meet various auction rules. The auction operator will apply the rules to an entity's highest bid first, then proceeds to lower bids. This procedure will preserve an entity's more competitive bids if the auction administrator does not accept all the entity's bids.

Summary of Section 95911(d)(3)(A).

Subsection (d)(3)(A) states that the auction operator will not accept a bid if acceptance of the bid would violate the purchase limit.

Rationale for Section 95911(d)(3)(A).

The provision is needed because the action operator will evaluate the cumulative bids submitted by an entity against the purchase limits for individual or associated entities as appropriate. If a bid would result in an entity exceeding a limit, the auction operator will not accept it. If a bid is not accepted, the bid is disqualified. It will not be used to determine winning bids or the auction settlement price.

Summary of Section 95911(d)(3)(B).

Subsection (d)(3)(B) states that the auction operator will not accept a bid if acceptance of the bid would violate the holding limit.

Rationale for Section 95911(d)(3)(B).

The provision is needed because the action operator will evaluate the cumulative bids submitted by an entity against the holding limits for individual or associated entities as appropriate. If a bid would result in an entity exceeding a limit, the auction operator will not accept it. If a bid is not accepted, the bid is disqualified. It will not be used to determine winning bids or the auction settlement price.

Summary of Section 95911(d)(3)(C).

Subsection (d)(3)(C) states that the auction operator will not accept a bid if acceptance of the bid would result in the total value of the accepted bids exceeding the value of the bid guarantee submitted by the entity.

Rationale for Section 95911(d)(3)(C).

The provision is needed because the auction operator will calculate the value of a bid as the bid price times the quantity. The auction operator will add the value of each bid submitted by the entity in declining price order until all of the entity's bids have been counted or the cumulative value of the bids becomes greater than the value of the bid guarantee submitted by the entity. The auction operator will disqualify a bid that causes the cumulative value of bids to exceed the bid guarantee.

Summary of Section 95911(d)(4).

Subsection (d)(4) states that the auction operator will award allowances beginning with the highest bid and proceeding in declining bid price order.

Rationale for Section 95911(d)(4).

The provision is needed to implement the uniform price auction. While most bidders do not generally pay their bid price in a uniform price auction, bidding

high helps ensure that the bidder wins allowances. Allowances are awarded to the bids in declining price order until the auction operator meets a stopping point.

Summary of Section 95911(d)(4)(A).

Subsection (d)(4)(A) states that the auction operator will stop awarding allowances when the next lower bid price is less than the auction reserve price. At that point the auction operator declares the last winning bid as the auction settlement price.

Rationale for Section 95911(d)(4)(A).

The provision is needed because the auction operator cannot sell allowances below the reserve price. The auction operator must then set the auction settlement price equal to the reserve price. All winning bidders will pay the auction settlement price.

Summary of Section 95911(d)(4)(B).

Subsection (d)(4)(B) states what will happen if the quantity of allowance bids at the next lower bid price is greater than the number of allowances left to award. In this case the auction operator declares that price to be the auction settlement price, and will apply the tie-breaking procedure in 95911(d)(5).

Rationale for Section 95911(d)(4)(B).

The provision is needed because the auction operator sets the settlement price at the level that will exhaust all bids. In this case, there remain more bids than unawarded allowances. The auction operator must begin the tie-breaking procedure to award the last remaining allowances.

Summary of Section 95911(d)(5)(A).

Subsection (d)(5)(A) states that the auction operator may have to deal with instances in which there are more bids than allowances left. The auction operator will use a random number generator to assign a number to each bundle of 1,000 allowances contained in each bid submitted at the auction settlement price.

Rationale for Section 95911(d)(5)(A).

The provision is needed because when the auction settles at a price higher than the reserve price, the auction operator may not have enough allowances to fill all the bids submitted at the settlement price. ARB staff proposes a modification of the tie bid resolution process used by RGGI to break ties. In the RGGI procedure, a random number is assigned to each bid submitted at the settlement price, regardless of the quantity bid. Beginning with the lowest random number and proceeding to the highest, the auction operator awards allowances until all

are awarded. The last bidder winning allowances may get only part of the allowances for which it bid. The RGGI process treats each bidder equally, but could result in a situation in which one entity could win a disproportionate share of the remaining allowances.

Staff decided to modify the RGGI procedure by assigning a random number to each 1,000 metric ton bundle in each participant's bid. The auction operator would use random numbers to award allowances as in the existing RGGI procedure. However, in the staff proposal, one random number would be assigned to each of the 1,000 metric ton bundles for which an entity bids, instead of assigning one random number for the entire quantity bid. For example, in the RGGI approach someone bidding for 10,000 metric tons would receive one random number. In the staff proposal, the entity would receive ten random numbers.

ARB also considered prorating the allowances among the tied bidders. However, this might result in awards of allowances in bundles of less than 1,000 metric tons, which would add to the auction's complexity.

Summary of Section 95911(d)(5)(B).

Subsection (d)(5)(B) states that having assigned a random number to each bundle of 1,000 allowances contained in each tied bid, the auction operator will begin awarding allowances to the bidder with the lowest number. The auction operator will award allowances to the holder of the next lowest random number until all allowances are awarded.

Rationale for Section 95911(d)(5)(B).

The provision is needed because this approach will treat each tied bidder equally while reducing the chance that a bidder could win a disproportionate share of the remaining allowances.

Section 95912. Auction Administration and Registration

Summary of Section 95912(a).

Subsection (a) states that the Executive Officer may serve as auction administrator or designate an entity to serve as auction administrator.

Rationale for Section 95912(a).

This provision is needed to give ARB the flexibility to contract with an outside auction operator.

Summary of Section 95912(b).

Subsection (b) states that if California links with other jurisdictions' cap-and-trade systems, then California may participate in a joint allowance auction with those jurisdictions, provided the joint auction rules conform to the proposed regulation.

Rationale for Section 95912(b).

The provision is needed because California may link with cap-and-trade systems in other U.S. or Canadian jurisdictions in order to form a regional market. A regional market would operate more efficiently if the member jurisdictions jointly auctioned their allowances. However, California could only participate in a joint auction if the rules of that auctioned conformed with rules in this regulation.

Summary of Section 95912(c).

Subsection (c) states that an entity that intends to participate in an auction must complete an auction registration at least 30 days prior to the auction.

Rationale for Section 95912(c).

The provision is needed because ARB is requiring a separate auction registration, even though all participants are already registered account holders, for several reasons. First, it ensures the participants provide updated information. Second, the applications will inform the auction operator of the number of participants to expect. Third, the application will include agreement by the entity with the rules of the auction and any procedures set out by the auction operator.

Summary of Section 95912(c)(1).

Subsection (c)(1) states that the auction operator will publish a notice describing the auction and auction registration process at least 60 days before each auction.

Rationale for Section 95912(c)(1).

The provision is needed because auction participants must have sufficient time to prepare the auction application.

Summary of Section 95912(c)(2).

Subsection (c)(2) explains the information auction participants must submit with their auction applications.

Rationale for Section 95912(c)(2).

The provision is needed because the auction operator must collect information on auction participants in order to correctly evaluate purchase and holding limits, assess the financial capability of participants to execute bids, and conduct oversight of the auction.

Summary of Section 95912(c)(2)(A).

Subsection (c)(2)(A) states that the auction applicant must supply information and documentation on corporate identity, ownership, and capital structure.

Rationale for Section 95912(c)(2)(A).

The provision is needed because the auction operator must have correct information on the identity of bidders.

Summary of Section 95912(c)(2)(B).

Subsection (c)(2)(B) states that the auction applicant must supply information and documentation on corporate associations, as described in section 95914.

Rationale for Section 95912(c)(2)(B).

The provision is needed because the auction operator must have correct information on corporate associations in order to correctly apply the holding limit to purchases by bidders that are affiliated through a corporate association.

Summary of Section 95912(c)(2)(C).

Subsection (c)(2)(C) states that the auction applicant must supply information on beneficial holdings that may result from auction purchases or may already exist. The information must disclose the existence of associations with any other auction bidders.

Rationale for Section 95912(c)(2)(C).

The provision is needed because the auction operator must have correct information in order to understand relationships between auction participants. One type of association is between bidders. The auction operator must know of these arrangements in order to correctly apply purchase and holding limits. The calculation of both of these limits takes into account when one entity is holding or purchasing allowances on behalf of another. This is known as a *beneficial* holding. Ultimately, ARB must be aware of these relationships to perform effective market monitoring.

Summary of Section 95912(c)(2)(D).

Subsection (c)(2)(D) states that the auction applicant must supply information on any criminal history of officials of the bidding entity.

Rationale for Section 95912(c)(2)(D).

The provision is needed because the Executive Officer must be able to determine whether the applicant should be allowed to participate in the auction.

Summary of Section 95912(c)(2)(E).

Subsection (c)(2)(E) states that the auction applicant must supply information on previous or pending investigations of allegations that the bidding entity or its officials were involved in violations of rules, regulations, or law associated with any commodity market or exchange.

Rationale for Section 95912(c)(2)(E).

The provision is needed because the Executive Officer must be able to determine whether the applicant should be allowed to participate in the auction.

Summary of Section 95912(c)(2)(F).

Subsection (c)(2)(F) states that all auction participants must supply their Holding Account number.

Rationale for Section 95912(c)(2)(F).

The provision is needed because once the auction operator has the applicant's Holding Account number, it can verify the applicant's registration status, identify the authorized account representative, and access other information on the applicant. The applicant must also already have a Holding Account in order to be able to purchase any allowances awarded to it at auction. If it does not have a Holding Account, or if it has been suspended, the applicant cannot participate in the auction.

Summary of Section 95912(d)(1).

Subsection (d)(1) states that auction participants may not release confidential information. Staff is proposing a sealed-bid auction format in part to prevent collusion. If the contents of an entity's bids or other information are circulated among participants, those with access to the information could collude to reduce the auction settlement price.

Rationale for Section 95912(d)(1).

The provision is needed to prevent participants from colluding during the auction.

Summary of Section 95912(d)(1)(A) through (d)(1)(E).

Subsections (d)(1)(A) through (d)(1)(E) state the types of information that auction applicants shall not release, including their qualification status, bidding strategy, bid prices or quantity, the financial security they provide to the auction administrator, or other information contained in the application that the auction administrator considers sensitive and will designate as confidential.

Rationale for Section 95912(d)(1)(A) through (d)(1)(E).

These provisions are needed to clarify to auction participants the information that must not be released. The provision is needed to prevent participants from colluding during the auction.

Summary of Section 95912(d)(2).

Subsection (d)(2) states that if an entity participating in the auction retains the services of an advisor, the entity must ensure the advisor does not transfer information to other participants.

Rationale for Section 95912(d)(2).

The provision is needed because auction participants must ensure that persons with access to their confidential bidding strategy do not disclose the information to other participants. This requirement is necessary to prevent collusion or market manipulation.

Summary of Section 95912(d)(3).

Subsection (d)(3) states that the Executive Officer will treat the information contained in the auction application as confidential to the extent permitted by State law.

Rationale for Section 95912(d)(3).

The provision is needed because ARB staff will not voluntarily make the information contained in the applications public, to avoid aiding collusion or market manipulation. However, the Executive Officer must comply with State law concerning what information ARB must make public.

Summary of Section 95912(d)(4)(A) and (d)(4)(B).

Subsections (d)(4)(A) and (d)(4)(B) describe the information the Executive Officer may release after an auction has concluded. The information includes the names of participating bidders and the auction settlement price

Rationale for Section 95912(d)(4)(A) and (d)(4)(B).

These provisions are needed because making some information on auction results available to the public balances the risk of disclosing information on participants' business strategies with the benefits for market transparency.

Summary of Section 95912(d)(4)(C).

Subsection (d)(4)(C) states that the Executive Officer may disclose aggregated or distributional information purchases with the names of the entities withheld. Aggregated data would refer to data summarized for different classifications of entities; for example, covered entities versus voluntarily associated entities.

Distributional information could include the number of allowances purchased by each winner, without identifying the entities themselves.

Rationale for Section 95912(d)(4)(C).

The provision is needed because releasing the data without identifying the winning entities by name would not reveal any confidential business information.

Summary of Section 95912(e).

Subsection (e) states that the Executive Officer may bar any auction participant from participating in future auctions if that participant has provided false or misleading information, or violated any other rules governing the auction. This prohibition would be in addition to any other enforcement action taken concerning the violations themselves.

Rationale for Section 95912(e).

The provision is needed because the prohibition is the surest method of maintaining the integrity of the auction, and should be an option available in addition to other enforcement actions.

Summary of Section 95912(f).

Subsection (f) states that auction participants must already be registered as participants in the California cap-and-trade system.

Rationale for Section 95912(f).

This provision is needed for two reasons. First, registration is required before an entity is provided with a Holding Account. Without a Holding Account, the entity could not purchase allowances at auction. Second, registration provides the Executive Officer with information of the entity which is necessary for market monitoring.

Summary of Section 95912(g).

Subsection (g) states that an entity whose Holding Account has been revoked or is currently suspended cannot participate in an auction.

Rationale for Section 95912(g).

The provision is needed because suspension or revocation of registration and accounts is needed as an enforcement mechanism of the cap-and-trade system. The action is applicable only to voluntarily associated entities which have no surrender compliance obligation. Without an active Holding Account, an entity cannot purchase and hold allowances.

Summary of Section 95912(h).

Subsection (h) states that the Executive Officer will specify the form and manner for submission of bids, and the bids will be considered binding offers to purchase allowances.

Rationale for Section 95912(h).

The provision is needed because the Executive Officer needs flexibility in using different methods of operating the auction, including the use of online bid mechanisms. Submitted bids must be considered binding so that the auction operator can process bid payments and access the bid guarantee mechanism, if needed.

Summary of Section 95912(i).

Subsection (i) states that registrants must provide a bid guarantee to the auction administrator at least one week before the auction.

Rationale for Section 95912(i).

The bid guarantee is needed in case a winning bidder fails to pay in a timely manner for allowances it is awarded. It must be submitted at least one week before auction to give the auction operator an opportunity to determine if it meets requirements.

Summary of Section 95912(i)(1)(A).

Subsection (i)(1)(A) states that the bid guarantee may be in the form of a bond issued by a financial institution with a United States banking license.

Rationale for Section 95912(i)(1)(A).

The U.S. banking license is required to ensure that the auction operator will not have difficulty accessing the bond.

Summary of Section 95912(i)(1)(B).

Subsection (i)(1)(B) states that the bid guarantee may be in cash in the form of a wire transfer or certified funds, such as a bank check or cashier's check.

Rationale for Section 95912(i)(1)(B).

The provision is needed because these instruments can be evaluated by the auction operator and processed quickly in the event of untimely payment by a bidder.

Summary of Section 95912(i)(1)(C).

Subsection (i)(1)(C) states that an irrevocable letter of credit issued with a United States banking license.

Rationale for Section 95912(i)(1)(C).

The provision is needed because the auction operator would obtain payment from a financial institution with which the bidder has established credit.

Summary of Section 95912(i)(1)(D).

Subsection (i)(1)(D) states that the auction operator will accept qualifying financial instruments from financial institutions with a Canadian banking license if California links to programs in one or more Canadian provinces.

Rationale for Section 95912(i)(1)(D).

The provision is needed because if California links its system with GHG ETS in one or more Canadian provinces, it is possible that some California allowances will be purchased at auction by entities located in Canada. These entities may need to use Canadian financial institutions, so the auction operator needs to accept instruments from institutions with Canadian banking licenses.

Summary of Section 95912(i)(2).

Subsection (i)(2) states that the value of the bid guarantee must be greater than or equal to the sum of the value of the bids submitted by the auction participant.

Rationale for Section 95912(i)(2).

The provision is needed because bid guarantees are common features of auctions to deter manipulative bidding. Without such a mechanism, bidders could submit multiple bids, then default on paying if the auction settlement price was higher than they desired. This practice would jeopardize the integrity of the auction.

Summary of Section 95912(j)(1) through (j)(6).

Subsections (j)(1) through (j)(6) describe the information the Executive Officer must make public at least 60 days before an auction. The notice shall include the date and time of the auction; instructions for applying for auction participation; instruction on how to submit bids; the procedures the auction operator will follow to conduct the auction; the administrative requirements for participation; and the number of GHG allowances to be auctioned.

Rationale for Section 95912(j) through (j)(6).

These provisions are needed because public notice is necessary so that potential participants can complete the registration process, develop a bidding strategy, and arrange financing in time for the auction.

Summary of Section 95912(k)(1).

Subsection (k)(1) states that the auction operator will process the bid guarantees.

Rationale for Section 95912(k)(1).

The provision is needed because the auction operator will need to determine the value of bids for which a participant has submitted a valid guarantee.

Summary of Section 95912(k)(2).

Subsection (k)(2) states that the auction operator will determine that the bids submitted by a participant conform to the holding and purchase limits and value of the bid guarantee submitted.

Rationale for Section 95912(k)(2).

The provision is needed because the auction operator will disqualify individual bids that exceed any of the limits.

Summary of Section 95912(k)(3).

Subsection (k)(3) states that the auction operator will determine the winning bids and auction settlement price.

Rationale for Section 95912(k)(3).

The provision is needed because the auction operator has responsibility for these functions.

Summary of Section 95912(k)(4).

Subsection (k)(4) states that the auction operator will inform the Executive Officer of the results.

Rationale for Section 95912(k)(4).

The provision is needed because the Executive Officer is responsible for ensuring the integrity of the auction. The results must be reported to the Executive Officer for approval before actual awarding of and payment for allowances occurs.

Summary of Section 95912(l).

Subsection (l) describes the actions the Executive Officer must take after an auction concludes.

Rationale for Section 95912(l).

The provision is needed because the auction operator only conducts the auction and determines winners. All transactions involving distribution of allowances require action by the Executive Officer. No payments can be processed until this occurs.

Summary of Section 95912(l)(1).

Subsection (l)(1) states that after the auction, the Executive Officer will certify that the auction was conducted pursuant to the regulation.

Rationale for Section 95912(l)(1).

This provision is needed to ensure no allowances are awarded or payments processed until the Executive Officer is certain that the auction rules have been followed.

Summary of Section 95912(l)(2)(A).

Subsection (l)(2)(A) states that after certifying the auction was conducted properly, the Executive Officer will instruct the auction operator to collect payment from winning bidders.

Rationale for Section 95912(l)(2)(A).

The provision is needed because the auction operator must collect payments before the Executive Officer will transfer allowances to the winners' Holding Accounts.

Summary of Section 95912(l)(2)(B).

Subsection (l)(2)(B) states that after certifying the auction was conducted properly, the Executive Officer will instruct the auction operator to declare the bid guarantee mechanism forfeit by any entity that fails to make full payment for awarded allowances when payment is due. The auction operator will access the bid guarantee to make up any shortfall in payment.

Rationale for Section 95912(l)(2)(B).

The provision is needed because the auction operator must collect payments before the Executive Officer will transfer allowances to the winners' Holding Accounts.

Summary of Section 95912(l)(2)(C).

Subsection (l)(2)(C) states that after certifying the auction was conducted properly, the Executive Officer will instruct the auction operator to deposit the proceeds for allowances allocated by ARB into the Air Pollution Control Fund.

Rationale for Section 95912(l)(2)(C).

The provision is needed because proceeds for allowances allocated for auction by ARB must go to a State account where they are available for appropriation by the Legislature.

Summary of Section 95912(l)(2)(D).

Subsection (l)(2)(D) states that after certifying the auction was conducted properly, the Executive Officer will instruct the auction operator to distribute auction proceeds to entities that consigned allowances to the auction under the provisions of section 95910.

Rationale for Section 95912(l)(2)(D).

The provision is needed to provide authority for the Executive Officer to ensure that those entities that consigned allowances are paid for them.

Summary of Section 95912(l)(3).

Subsection (l)(3) states that after determining that allowances have been paid for, the Executive Officer will instruct the accounts administrator to transfer the serial numbers of allowances to the Holding Accounts of the winning bidders.

Rationale for Section 95912(l)(3).

The provision is needed because allowances belong to purchasers after payment has been received. Until payment has been received, the allowances either belong to ARB or have been consigned to the Executive Officer for auction. Therefore, the Executive Officer must determine when payment has been completed and instruct the accounts administrator to transfer the allowances.

Summary of Section 95912(l)(4).

Subsection (l)(4) states that after certifying the auction was conducted properly, the Executive Officer will inform any GHG ETS to which California is linked of the allowances distributed.

Rationale for Section 95912(l)(4).

The provision is needed because California must inform linked systems of the allowances that it has distributed, so that the other systems can recognize them as valid.

Summary of Section 95912(l)(5).

Subsection (l)(5) states that the Executive Officer will publish the results at www.arb.ca.gov.

Rationale for Section 95912(l)(5).

This provision is necessary to ensure transparency of the auction proceedings.

Section 95913. Sale of Allowances from the Allowance Price Containment Reserve Account.

Summary of Section 95913(a).

Subsection (a) states that the Executive Officer may administer sales from the Allowance Price Containment Reserve Account (also referred to as the *Reserve*) or designate an entity to serve as auction administrator.

Rationale for Section 95913(a).

This provision gives the Executive Officer the flexibility to contract with an outside entity to administer transactions.

Summary of Section 95913(b).

Subsection (b) states that if California links with other GHG ETS, the linkage agreement will specify whether entities registered into the linked systems will be eligible to purchase from the Reserve.

Rationale for Section 95913(b).

This provision is needed because staff cannot make a determination on eligibility before linking agreements have been created. Under the current staff proposal, entities must be registered into the California cap-and-trade system under section 95830 before they can participate in the Reserve sales.

Summary of Section 95913(c)(1)(A).

Subsection (c)(1)(A) states that only covered entities, including opt-in covered entities, are eligible to participate in sales from the Reserve.

Rationale for Section 95913(c)(1)(A).

This provision is needed because staff is proposing a Reserve to mitigate price increases during periods of short supplies, especially when these occur near to compliance deadlines. Since voluntarily associated entities do not have a compliance obligation, they can simply avoid purchasing allowances when prices are high.

Summary of Section 95913(c)(1)(B).

Subsection (c)(1)(B) states that covered entities may only purchase from the Reserve if they do not hold any compliance instruments in their Holding Accounts.

Rationale for Section 95913(c)(1)(B).

This provision is needed because staff is proposing the Reserve to help ensure that compliance may be achieved at a reasonable cost. Staff intends the benefit to go to entities that have had difficulty finding compliance instruments at a reasonable cost, not those that can meet their compliance needs and still maintain a balance in their Holding Accounts for speculative purposes.

Summary of Section 95913(c)(2).

Subsection (c)(2) states that all of the allowances in the Reserve will be available for purchase at each sale.

Rationale for Section 95913(c)(2).

This provision is needed because staff concluded that if shortages occur close to a compliance deadline, then the Reserve needs to be available in its entirety.

Summary of Section 95913(c)(3)(A) and (c)(3)(B).

Subsections (c)(3)(A) and (c)(3)(B) state that the first Reserve sale will be conducted on March 4, 2012. After the first Reserve Sale, further Reserve sales will take place three weeks after each quarterly allowance auction.

Rationale for Section 95913(c)(3)(A) and (c)(3)(B).

Staff propose this date to allow entities to complete the registration process and for the first auction to conclude. Staff proposes this schedule so that entities may use the Reserve sales to supplement their auction purchases.

Summary of Section 95913(c)(3)(C).

Subsection (c)(3)(C) states that the sale administrator will publish a notice for each sale four weeks prior to the sale.

Rationale for Section 95913(c)(3)(C).

This provision is needed because covered entities will need time to prepare their purchase strategies following each auction, to submit their bids, and to arrange financing.

Summary of Section 95913(c)(4).

Subsection (c)(4) states that purchases of allowances from the Reserve will be subject to the holding limit.

Rationale for Section 95913(c)(4).

This provision is necessary because the Reserve is intended to aid entities that need allowances for compliance rather than speculative purposes. Covered entities have a limited exemption for allowances held in their Compliance Accounts. The exemption is intended to allow them to meet compliance obligations. If they exceed that limit they should have no need to access the Reserve.

Summary of Section 95913(d)(1).

Subsection (d)(1) states that the allowances in the Reserve will be evenly divided into three pools, referred to as *tiers.*

Rationale for Section 95913(d)(1).

This provision is needed because staff proposes the division to allow the allowances to be available at different prices.

Summary of Section 95913(d)(2)(A) through (d)(2)(C).

Subsections (d)(2)(A) through (d)(2)(C) list the prices for each tier to be used in 2012. The price for allowances will be $40/metric ton for the first tier, $45/metric ton for the second tier, and $50/metric ton for the third tier.

Rationale for Section 95913(d)(2)(A) through (d)(2)(C).

These provisions are needed because ARB will specify prices for 2012, then use an inflator to raise prices in later years.

ARB proposes the use of fixed prices for sales from the Reserve so that program administrators do not need to make a determination that market conditions require an intervention. This certainty of the Reserve being available at established prices is an important aspect of the design.

ARB proposes setting the prices for the three tiers at $40, $45, and $50 because if allowance prices remain within the anticipated range (as described in

Appendix N: Supporting Documentation for the Economic Analysis), no allowances will be purchased from the Reserve because the established sales prices would be higher than the estimated market price of allowances. Consequently, when no allowances are purchased from the Reserve, the total number of instruments that can be used for compliance (allowances plus the offset limit) is unchanged by the creation of the allowance reserve. Under these conditions, the environmental integrity of the program is maintained, and the emissions reductions required by covered sources remains unchanged.

Appendix N examines scenarios that could result in allowance prices that are substantially above the price estimated under the main policy case for 2020. An allowance reserve could potentially prevent the higher allowance prices in these circumstances if it is large enough to accommodate the estimated shortfalls in emissions reductions from the complementary measures. ARB estimated that the allowance reserve needed to accommodate potential shortfalls in direct reductions would be in the order of 2 percent to 5 percent of the total allowance budget.

This protection against high prices is limited, however, because the number of allowances in the Reserve is limited. Once the allowances in the Reserve are all purchased, there is no additional buffer against higher-than-expected prices.

The limited nature of the proposed reserve distinguishes it from a hard allowance price cap. Under a hard price cap, a maximum allowance price is established, and additional allowances are made available at the cap price, typically in unlimited quantity. Under such conditions, the environmental integrity of the program is not maintained if additional allowances are sold at the price cap. The allowance reserve discussed here does not share these features with a hard price cap.

Summary of Section 95913(d)(3).

Subsection (d)(3) proposes that after 2012, the tier prices for a given calendar year will equal the prices for the previous calendar year, plus five percent and a measure of inflation, the Consumer Price Index for All Urban Consumers.

Rationale for Section 95913(d)(3).

Staff proposes an inflator mechanism based on the expectation that marginal abatement costs and allowance prices will increase over time as lower cost abatement measures are undertaken first. Reserve sale prices would need to increase to reflect the increased marginal abatement cost and the inflation rate, otherwise the Reserve would no longer be the seller of last resort as intended.

Summary of Section 95913(e).

Subsection (e) describes how covered entities must submit their bids to purchase allowances from the Reserve. The bids are due to the sales administrator two weeks before each sale is conducted.

Rationale for Section 95913(e).

The provision is necessary so that the sales administrator has time to process the bids. Staff is proposing minimal requirements on the bids themselves. The requirements are necessary to ensure that the sales proceed efficiently.

Summary of Section 95913(e)(1).

Subsection (e)(1) states that the bids will include the number of allowances the covered entity wishes to purchase from each of the three tiers, in multiples of 1,000 metric tons.

Rationale for Section 95913(e)(1).

The provision is necessary to simplify the bidding and award process. The bid must specify the number of allowances from each tier. The total number of allowances, combined with the entity's existing holdings, must be less than the holding limit.

Summary of Section 95913(e)(2).

Subsection (e)(2) states that bidders must provide a bid guarantee equal to the value of the bids they submit.

Rationale for Section 95913(e)(2).

The provision is necessary because without this requirement, bidders could default on their bids. This might force the sales administrator to rerun the sale.

Summary of Section 95913(e)(2)(A).

Subsection (e)(2)(A) states that the bid guarantee may be in the form of a bond issued by a financial institution with a U.S. banking license.

Rationale for Section 95913(e)(2)(A).

The provision is necessary because the sales administrator could easily recover payment for the allowances from a bond.

Summary of Section 95913(e)(2)(B).

Subsection (e)(2)(B) states that the bid guarantee may be in the form of cash, in the form of a wire transfer, or certified funds, such as a bank check or cashier's check.

Rationale for Section 95913(e)(2)(B).

The provision is necessary because the sales administrator could easily recover payment for the allowances from these instruments.

Summary of Section 95913(e)(2)(C).

Subsection (e)(2)(C) states that the bid guarantee may be in the form of an irrevocable letter of credit issued by a financial institution with a U.S. banking license.

Rationale for Section 95913(e)(2)(C).

The provision is necessary because the sales administrator could easily recover payment for the allowances from letters of credit. The requirement for a U.S. banking license is included to simplify transactions.

Summary of Section 95913(e)(2)(D).

Subsection (e)(2)(D) states that if California links with GHG ETS operated by one or more Canadian Provinces, then bonds or irrevocable letters of credit from financial institutions with Canadian banking licenses would be acceptable.

Rationale for Section 95913(e)(2)(D).

The provision is necessary if California links with GHG ETS operated by Canadian Provinces, because the linking agreements may allow Canadian entities to purchase from the Reserve. In this case, the entities may well be transacting through Canadian banks.

Summary of Section 95913(f)(1).

Subsection (f)(1) states that the sales administrator will conduct sales from each tier starting with the lowest-priced tier and proceeding to the highest.

Rationale for Section 95913(f)(1).

The provision is necessary because the sales administrator will be evaluating each purchase against the holding limit. By conducting sales from each tier from lowest to highest price, the administrator will disqualify the higher-priced bids.

Summary of Section 95913(f)(2)(A).

Subsection (f)(2)(A) states that the sales administrator will disqualify bids once purchases exceed the bidding entity's holding limit.

Rationale for Section 95913(f)(2)(A).

The provision is necessary because no entity's holdings may exceed the holding limit.

Summary of Section 95913(f)(2)(B).

Subsection (f)(2)(B) states that the sales administrator will disqualify bids once the value of purchases exceeds the value of the bidding entity's bid guarantee.

Rationale for Section 95913(f)(2)(B).

The provision is necessary because if the sales administrator accepts the bids beyond the value of the bid guarantee, there is risk that an entity may not pay for the allowances. This would affect the integrity of the auction.

Summary of Section 95913(f)(3).

Subsection (f)(3) states that if the total number of bids for a tier is less than the total available, bidders will receive all the allowances for which they bid.

Rationale for Section 95913(f)(3).

The provision is necessary because the sales administrator will fill all the qualified bids from a tier if the tier is not depleted.

Summary of Section 95913(f)(4).

Subsection (f)(4) describes the process the sales administrator will use if the number of qualified bids for a tier exceeds the number of allowances in the tier.

Rationale for Section 95913(f)(4).

The provision is necessary because there must be a procedure in place if a tier becomes depleted.

Summary of Section 95913(f)(4)(A).

Subsection (f)(4)(A) states that if there are more bids for a tier than there are allowances remaining, the share of allowances to be awarded to each bidder will equal the number of allowances for which one entity bids, divided by the total number of bids.

Rationale for Section 95913(f)(4)(A).

The provision is necessary because if a tier becomes depleted during a sale, the administrator will prorate the purchases among qualified bids. Once a tier is depleted, it will not be replenished. ARB is filling the Reserve with allowances issued at the beginning of the program and does not intend to replenish the Reserve with allowances issued through 2020. However, ARB does intend to transfer allowances remaining unsold at auction to the Reserve.

Summary of Section 95913(f)(4)(B).

Subsection (f)(4)(B) states that the number of allowances awarded to each bidder will equal the bidder's share, as calculated in 95913(f)(4)(A), times the number of allowances in the tier, rounded to the lowest whole number.

Rationale for Section 95913(f)(4)(B).

The provision is necessary because it allows the administrator to empty the tier while treating each bidder equally.

Summary of Section 95913(f)(5).

Subsection (F)(5) states that the sales administrator will inform the Executive Officer of the sales results.

Rationale for Section 95913(f)(5).

The provision is necessary because the Executive Officer will have to certify that the sale was conducted properly under the regulation.

Summary of Section 95913(g)(1) through (g)(2).

Subsections (g)(1) through (g)(2) detail the post-sale actions by the Executive Officer. The Executive Officer must certify that the sale was conducted according to the regulation. After approving the sale, the Executive Officer will authorize the reserve sale administrator to process payments for the allowances purchased.

Rationale for Section 95913(g) (1) through (g)(2).

These provisions are necessary because some actions must be taken by the Executive Officer after the sale. The Executive Officer must determine that the sale administrator conducted the sale appropriately before allowances can be distributed. The reserve sale administrator cannot process payments until the Executive Officer approves the conduct of the sale.

Summary of Section 95913(g)(3).

Subsection (g)(3) states that after determining that the payments have been placed into the Air Pollution Control Fund, the Executive Officer will authorize the accounts administrator to transfer the allowances purchased from the Reserve account to the winning bidders' Compliance Accounts.

Rationale for Section 95913(g)(3).

The provision is necessary because the Executive Officer will authorize allowance transfers once payment has been processed. The allowances are placed in the winning bidders' Compliance Account because the Reserve is intended for use by those entities finding it difficult to acquire allowances during times of tight supply. ARB does not intend the allowances to be available for further speculation.

Summary of Section 95913(g)(4).

Subsection (g)(4) states that the Executive Officer will inform the GHG ETS to which California has linked of the serial numbers of the allowances sold.

Rationale for Section 95913(g)(4).

The provision is necessary because when California links to other GHG ETS, the systems must inform each other when compliance instruments have been placed into circulation, so that the instruments may be recognized as valid in each system.

Summary of Section 95913(g)(5).

Subsection (g)(5) states that the Executive Officer will publish all sales results online.

Rationale for Section 95913(g)(5).

The provision is necessary because staff proposes to have all results be a matter of public record. The cost-containment mechanism was designed in part to provide information on the compliance costs of the program. In addition, staff believes the public should know who is benefitting from this distribution of allowances.

Section 95914. Disclosure of Direct and Indirect Corporate Associations.

Summary of Section 95914(a).

Subsection (a) requires that entities disclose direct and indirect corporate associations when they register. This subsection contains the definitions of the associations.

Rationale for Section 95914(a).

This provision is necessary because registered entities may have corporate associations that allow them to coordinate their market activities. Staff is proposing disclosure of these relationships so that market monitors will be able to identify transactions involving affiliates. In addition, if ARB were to be unaware of these relationships it would be unable to apply holding and purchase limits in a meaningful way. Corporate affiliates would be able to control a much larger share of the market for compliance instruments.

Summary of Section 95914(a)(1)(A) through (a)(1)(E).

Subsections (a)(1)(A) through (a)(1)(E) contain the criteria for determining whether two entities have a direct corporate association. These include the share of share ownership, appointment of directors, voting power, or other means of control of another entity. In addition, subsection (a)(1)(E) states that a corporate association would exist if one entity holds compliance instruments in which the other has an ownership interest.

Rationale for Section 95914(a)(1)(A) through (a)(1)(E).

These provisions are needed to give clear guidance about how to determine which corporate associations must be disclosed.

Summary of Section 95914(a)(2).

Subsection (a)(2) contains the criteria for determining whether two entities have an indirect corporate association. This type of association occurs when an entity has an association with an entity through a third entity, or a chain of entities.

Rationale for Section 95914(a)(2).

This provision is needed to give clear guidance about how to determine which corporate associations must be disclosed.

Summary of Section 95914(b).

Subsection (b) requires that if California links to other GHG ETS, then registered entities must disclose corporate associations with entities in those systems.

Rationale for Section 95914(b).

This provision is needed to give clear guidance about how to determine which corporate associations must be disclosed.

Summary of Section 95914(c)(1) through (c)(3).

Subsections (c)(1) and (c)(3) contain the list of information which entities must provide when disclosing corporate associations. This includes names of the other entities, the type of corporate association, and a brief description of the association, such as subsidiary, partnership, corporate parent, sister company, or other.

Subsection (c)(2) gives the entity the opportunity to report the share of the corporate association's purchase and holding limits allocated to each entity in the association.

Rationale for Section 95914(c)(1) through (c)(3).

These provisions are necessary to provide basic identification of the members of a corporate association. In addition, subsection (c)(2) is needed to enable the auction administrator to apply purchase and holding limits to members of a corporate association. The limits treat the holdings and purchases of members of an association as if they were held by one entity. Staff is proposing that members of an association be able to allocate the limit among the members so that each entity will always know how the limitations apply to it. When the allocation is disclosed, the auction operator and the Executive Officer will ensure that the sum of the allocated shares is less than the holding and purchase limits.

Summary of Section 95914(d)(1) through (d)(4).

Subsections (d)(1) through (d)(4) contain the list of times when corporate associations must be disclosed or the disclosure updated. Subsection (d)(1) requires that disclosure be made when an entity initially registers under section 95830. Subsection (d)(2) requires that disclosure be made any time an association is created or exists. Subsection (d)(3) requires disclosure whenever there is a material change in the information already disclosed. Subsection (d)(4) requires disclosure at least 60 days before an auction.

Rationale for Section 95914(d)(1) through (d)(4).

These provisions are necessary so that entities understand their responsibilities of when they must report or update the information retained by ARB.

Summary of Section 95914(e)(1).

Subsection (e)(1) makes the total number of allowances purchased at auction by a group of entities with a corporate association subject to the purchase limit as if they were one entity.

Rationale for Section 95914(e)(1).

This provision is needed to correctly apply the purchase limit. ARB intends the limit to restrict the ability of an entity or group of entities from gaining a dominant share of the market for instruments.

Summary of Section 95914(e)(2)(A) through (e)(2)(C).

Subsection (e)(2) allows members of a corporate association to allocate shares of the limit among themselves. The sum of shares allocated to the members of the corporate association must sum to the purchase limit. After they inform the Executive Officer of the allocation, the auction administrator will treat the entity's allocated share as its purchase limit.

Rationale for Section 95914(e)(2)(A) through (e)(2)(C).

Subsections (e)(2)(A) through (e)(2)(C) are necessary so that members of a corporate association can clarify their share of their association's purchase limit between themselves. By informing the Executive Officer, they can ensure that the limit will be applied correctly.

Summary of Section 95914(e)(3)(A) through (e)(3)(C).

These provisions describe how the purchase limit will be applied to members of a corporate association if they do not inform the Executive Officer of an allocation of the shares of the purchase limit among themselves. To evaluate the purchase limit, the auction administrator will pool the bids from all members of the association, and order them from highest to lowest bid price. The administrator will then accept the bids in declining price order until the association's purchase limit is reached. The administrator will then disqualify any remaining bids. The auction administrator will conduct this process before the auction itself.

Rationale for Section 95914(e)(3)(A) through (e)(3)(C).

These provisions are necessary to instruct the administrator how to apply the purchase limit to members of a corporate association when they have not allocated the purchase limit among themselves.

Summary of Section 95914(f)(1).

Subsection (f)(1) makes the total number of compliance instruments held by members of a corporate association subject to the holding limit as if the association were one entity.

Rationale for Section 95914(f)(1).

This provision is necessary to correctly apply the holding limit. ARB intends the limit to restrict the ability of an entity or group of entities from gaining a dominant share of the market for instruments. Without this requirement, a corporate

association could expand its share of the market by creating and registering more affiliates.

Summary of Section 95914(f)(2)(A) and (f)(2)(B).

Subsections (f)(2)(A) and (f)(2)(B) describe how entities that are part of a corporate association may allocate the holding limit among themselves. The sum of shares allocated to each member must sum to the holding limit. The association must inform the Executive Officer of the allocation before the limit can be correctly applied.

Rationale for Section 95914(f)(2)(A) and (f)(2)(B).

These provisions are necessary because ARB is proposing that the holding limit applies to members of a corporate association as if they were one entity.

Summary of Section 95914(f)(3).

Subsection (f)(3) requires that if the members of a corporate association do not inform the Executive Officer of a an allocation of the holding limit among themselves, then the accounts administrator will not record a transaction that would result in the holdings of the members of a corporate association exceeding the holding limit.

Rationale for Section 95914(f)(3).

Subsection (f)(3) is necessary in the event that members of a corporate association do not report an allocation of the holding limit to the Executive Officer. This subsection gives the default treatment of the limit, unless the members of the association take advantage of the allocation option.

Section 95915. Identifying Disclosable Bidding Associations.

Summary of Section 95915(a).

Subsection (a) requires entities registering for the auction to disclose the existence of bidding associations with any entities registered into the California cap-and-trade system or into a GHG ETS with which California has linked.

Rationale for Section 95915(a).

The provision is needed to require entities participating in California's auction to disclose if they are participating in the auction with another registered entity. Staff is proposing the requirement so that ARB can monitor auctions for collusive behavior.

Summary of Section 95915(b)(1) through (b)(3).

Subsections (b)(1) through (b)(3) provide a list of criteria for determining whether a bidding association exists. These include whether the entity has an agreement with another entity; is partnered with another entity for bidding purposes; or has agreed to provide advisory services except for investment advice.

Rationale for Section 95915(b)(1) through (b)(3).

These provisions are necessary to inform auction participants of the criteria governing disclosure of bidding associations.

Summary of Section 95915(c)(1) and (c)(2).

Subsection (c)(1) requires that bidding associations be disclosed during the auction registration process. Subsection (c)(2) lists the disclosure requirements for bidding associations. These include a description of the agreement, relationships between members of the association, including which entity may be holding instruments on behalf of another, and a copy or description of any agreement.

Rationale for Section 95915(c)(1) and (c)(2).

Subsection (c)(1) is necessary to ensure the Executive Officer has the information prior to the auction. Subsection (c)(2) is necessary to make clear to the auction participants what type of information must be disclosed. The disclosed information will help the Executive Officer monitor the bidding behavior of participants.

Summary of Section 95915(d)(1) through (d)(3).

Subsections (d)(1) through (d)(3) contain the requirements for when disclosures must be made and when an entity can communicate information on its auction participation. Subsection (d)(1) requires disclosure at least 30 days prior to the auction. Subsection (d)(2) prohibits communication by an entity with another auction participant if there has been no disclosure of a bidding association between the two. Subsection (d)(3) prohibits an entity from participation in the auction if it has a material change to its bidding association disclosure less than 30 days from the auction.

Rationale for Section 95915(d)(1) through (d)(3).

These provisions are necessary to ensure that there is no undisclosed communication between bidders at an auction. Subsection (d)(1) is needed to ensure all associations have been disclosed a sufficient interval prior to the auction, so that the auction can be properly monitored. Subsection (d)(2) is needed to prohibit communication between bidders. Subsection (d)(3) prohibits

the creation of new bidding associations after the auction disclosure deadlines have passed.

These provisions will ensure that the auction can be monitored for potential collusion between bidders.

Summary of Section 95915(e)(1).

Subsection (e)(1) applies the purchase limit at an auction to the members of a bidding association which are designated as “the recipient” of a beneficial purchase by another entity.

Rationale for Section 95915(e)(1).

The provision is needed to address when an entity has other registered entities make purchases on its behalf. An entity could easily escape the purchase limit by such arrangements. However, part of the required disclosure is to have a purchasing entity identify the ultimate recipient of the purchased instrument. The purchase limit will then correctly be applied to the recipient, not to the apparent purchaser.

Summary of Section 95915(e)(2)(A) and (e)(2)(B).

Subsections (e)(2)(A) and (e)(2)(B) permit the entities within a bidding association to allocate the purchase limit among those entities in the association and inform the Executive Officer of the allocation. The sum of the shares allocated must be less than or equal to the purchase limit. The share allocated to an individual entity becomes its purchase limit.

Rationale for Section 95915(e)(2)(A) and (e)(2)(B).

These provisions are needed so that entities that are part of a bidding association may enter an auction knowing exactly the number of allowances each will be allowed to purchase on its own behalf. The Executive Officer must be aware of the allocation before the auction to evaluate whether it was correctly calculated.

Summary of Section 95915(e)(3).

Subsection (e)(3) requires the auction operator to calculate shares of the purchase limit if entities in a bidding association fail to declare an allocation to the Executive Officer. The limit for entities designated as “purchaser” is the purchase limit less the sum of bids submitted by entities in the association designated as “recipient,” divided by the number of entities designated as “purchaser.” Thus, all “purchasers” would end up with an equal share of the limit as a default.

Rationale for Section 95915(e)(3).

The provision is necessary in case entities in a bidding association do not allocate the purchase limit among themselves.

Subarticle 11. Trading and Banking.

Section 95920. Trading.

Summary of Section 95920(a).

Subsection (a) contains a list of actions that are explicitly prohibited in the California cap-and-trade system.

Rationale for Section 95920(a).

The list of prohibited actions is needed to enable ARB to take enforcement actions against entities that attempt to manipulate the market. The list of prohibited activities attempt to capture actions that are part of manipulative activities.

Summary of Section 95920(a)(1).

Subsection (a)(1) requires that transaction reports include the names of authorized account representatives of those involved in a trade.

Rationale for Section 95920(a)(1).

The provision is needed because ARB needs to know who has an ownership interest in the instruments being traded, in order to detect the exercise of market power.

Summary of Sections 95920(a)(2)(A) through (a)(2)(F).

Subsections 95920(a)(2)(A) through (a)(2)(F) prohibit trades involving a number of techniques used to manipulate markets, including manipulative or deceptive devices; attempts to corner a market; fraud; false, misleading, or inaccurate reporting or documentation; or other efforts to falsify or conceal material facts.

Rationale for Section 95920(a)(2)(A) through (a)(2)(F).

The prohibitions are needed to because ARB must be able to take enforcement against an entity attempting to manipulate markets or deceive other market participants.

Summary of Section 95920(b)(1) and (b)(2).

Section (b)(1) defines the *holding limit* as the maximum number of California compliance instruments that can be held by an entity or a group of entities with a

corporate association. Section (b)(2) applies the limit to any entity with a Holding Account.

Rationale for Section 95920(b)(1) and (b)(2).

Sections (b)(1) and (b)(2) are needed to define the holding limit that will apply to each entity with a Holding Account. The limit applies to entities that have a corporate association with each other, as defined in section 95914.

The purpose of a holding limit is to prevent a market participant, or a group of market participants that can coordinate their buying and selling, from gaining too large a share of the goods in a market. The limits are common features in commodity markets.

Summary of Section 95920(b)(3).

Section (b)(3) contains the formula for calculating the holding limit. The formula calculates the holding limit in millions of metric tons:

Holding Limit = 2.5 million metric tons + 0.025*(Annual Allowance Budget – 2.5 million metric tons).

The holding limit is calculated for each year using that year's Annual Allowance Budget. ARB selected this formula based primarily on recommendations by a consultant to the WCI Markets Committee.[101]

Rationale for Section 95920(b)(3).

The provision is needed because account holders must know at all times the holding limit that applies each year. The formula adjusts the holding limit for changes in the allowance budget. This will allow the holding limit to increase when the scope of the system is enlarged in the second period, and to decrease when the cap decreases over time.

The size of the limit, coupled with the limited exemption, represents a trade-off between having a limit that is small enough to reduce opportunities for market manipulation and a limit that is so small that it reduces banking and market liquidity by restricting the activity of non-covered entities. As the WCI consultant

[101] Harris, Jeffrey H. *Western Climate Initiative Markets Committee Report on Holdings Limits*. May 6, 2010.

concluded, economic theory provides little practical guidance to setting the trade-off for a market that does not yet exist.[102]

Summary of Section 95920(b)(4)(A)

Subsection (b)(4)(A) provides a limited exemption from the holding limit for allowances placed in a compliance account by covered entities within a single calendar year. The limit to the transfer of allowances added to an entity's compliance account is equal to the verified emissions reported for the entity for the previous year. The verification statement must be a positive or qualified positive statement.

Rationale for Section 95920(b)(4)(A)

This provision is needed to have a holding limit that treats all covered and voluntarily associated entities equally. The exemption applies only to allowances transferred to a compliance account in a single year.

Staff concluded that the verified emissions would be the best available estimate of an entity's current emissions. Using the verified emissions to set the exemption means that the exemption would not be large enough to exempt allowances an entity accumulates to cover growth in emissions.

Summary of Section 95920(b)(4)(B)

Subsection (b)(4)(B) states that the total number of allowances which can be held in a compliance account during a calendar year is the sum of previous annual transfer limits.

Rationale for Section 95920(b)(4)(B)

This provision is needed in order for the limited exemption to be cumulative. The approach allows the exemption to be high enough to accommodate holdings needed prior to the triennial compliance.

Summary of Section 95920(b)(4)(C)

Subsection (b)(4)(C) states that on December 31 of the calendar year following the end of a compliance period the limited exemption will be reduced by the sum of the entity's verified emissions over that compliance period.

Rationale for Section 95920(b)(4)(C)

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[102] Harris, Jeffrey H. *Western Climate Initiative Markets Committee Report on Holdings Limits.* May 6, 2010, p. ii.

This provision is needed in order for the limited exemption to reflect changes in the number of allowances a covered entity would need to hold over the triennial compliance cycle. The limit is reduced by the entity's total emissions over a compliance period after that entity has met the triennial compliance deadline. The limit will still be high enough to allow the entity to begin accumulating allowances for the next compliance period. At the same time, the exemption does not continue to grow in an unlimited fashion so that the covered entity is effectively no longer bound by the holding limit.

Summary of Section 95920(b)(4)(D)

Subsection (b)(4)(B) states that if a positive or qualified positive verification statement is not available then ARB will calculate the exemption based on emissions assigned to the entity.

Rationale for Section 95920(b)(4)(D)

This provision is needed to allow ARB to calculate the holding limit exemption for covered entities when they do not have a positive or qualified positive verification statement for their emissions from the previous year.

Summary of Section 95920(b)(5).

Subsection 95920(b)(5) states that if the Executive Officer determines that a transaction by an entity would result in the number of compliance instruments held by that entity being greater than the holding limit, the Executive Officer will not approve the transaction.

Rationale for Section 95920(b)(5).

This provision is needed to enforce the holding limit. ARB has two choices on how to enforce the limit. First, it could allow transactions to proceed, then review them for conformance. If violations were found, ARB would have to penalize an entity involved in the trade and then arrange to unwind the transaction. Second, it could rely on the section 95921 requirement that each trade must conform to the proposed rules for holding or trading compliance instruments or it will not be accepted by the accounts administrator. This means all trades would be monitored for conformance to the holding limit and other rules, and would not be recorded if a violation is detected. Staff concluded that the second approach would be less resource-intensive to operate.

Summary of Section 95920(b)(6).

Subsection 95920(b)(6) states that the holding limit will treat holdings of entities with a corporate association as being held by a single entity. This restriction will not apply if existing law or regulation prohibits coordinated market activity by the associated entities, including the transfer of compliance instruments between accounts controlled by the associated entities.

Rationale for Section 95920(b)(6).

This provision is needed to deal with the possibility that individual entities registered into the cap-and-trade system may be coordinating their market activities with other entities that have a corporate association. The main purpose of a holding limit is to prevent an entity from acquiring a large enough share of compliance instruments that it can influence market prices. Entities subject to an individual holding limit could jointly control enough compliance instruments to affect market prices if they coordinated their market activity.

Summary of Section 95920(b)(7).

Subsection 95920(b)(7) states that the holding limit treat beneficial holdings by an agent as part of the holding of the owner. A beneficial holding refers to compliance instruments held by one entity on behalf of another entity that has an ownership interest.

Rationale for Section 95920(b)(7).

This provision is needed to calculate the holding limit to reflect the entity that actually controls compliance instruments. Without this provision, entities could escape the holding limit by simply having agents purchase and hold allowances on their behalf. At the same time, the provision protects entities interested in buying and selling on behalf of clients from having their actions curtailed by the holding limit.

Summary of Section 95920(c)(1).

Subsection 95920(c)(1) states that the Executive Officer may restrict the number of compliance instruments held by a covered entity or opt-in covered entity in response to violations by the entity. The restriction will allow the entity to accumulate sufficient compliance instruments to meet obligations but not enough to participate in speculative transactions.

Rationale for Section 95920(c)(1).

This provision is needed as a response to rule violations. Obviously the Executive Officer cannot suspend or revoke the registration of covered entities. Staff instead proposes to restrict the number of instruments the violator could hold. This would allow the entity to meet its obligations without giving it more opportunities to violate market rules.

Summary of Section 95920(c)(2).

Subsection 95920(c)(2) states that the Executive Officer may raise the annual surrender obligation for covered entities and opt-in covered entities in response to violations.

Rationale for Section 95920(c)(2).

This provision is needed as a response to rule violations. The provision would reduce some of the flexibility given to covered entities through the three-year compliance period by forcing them to meet a greater percentage of their triennial compliance obligation through the annual compliance "payment."

Summary of Section 95920(c)(3).

Subsection 95920(c)(3) states that the Executive Officer may suspend or revoke the registration of opt-in covered entities, voluntarily associated entities, and other registered market participants

Rationale for Section 95920(c)(3).

This provision is needed as a response to rule violations. The Executive Officer must have the authority to remove participants for serious or repeated violations.

Section 95921. Conduct of Trade.

Summary of Section 95921(a).

Subsection (a) requires that the accounts administrator will examine all transactions reports submitted by account holders prior to recording them. The accounts administrator will not accept transactions if the administrator determines that the transaction does not conform to the cap-and-trade system rules. For example, if the administrator will determine if a transaction would result in an account holder exceeding the holding limit set forth in 95920(b), the administrator will inform the parties to the trade that the transaction was not recorded into the accounts system.

Rationale for Section 95921(a).

This provision is needed because the system of accounts maintained by the accounts administrator is the final record of who owns each compliance instrument. The cap-and-trade system rules are set up to ensure the integrity of transactions. ARB has determined that the system would operate more efficiently if the administrator examined the transactions at the time of reporting rather than reviewing and possibly reversing the transactions at a much later date.

Summary of Section 95921(b).

Subsection (b) states the information that must be submitted along with each transaction report by account holders when they wish to transfer allowances between accounts.

Rationale for Section 95921(b).

The information requested allows the accounts administrator to determine that a valid transaction has taken place.

Summary of Section 95921(b)(1).

Subsection (b)(1) states that transaction reports must include the Holding Account number and name of the authorized account representative of the seller.

Rationale for Section 95921(b)(1).

The provision is needed because ARB must ensure that the person filing the transaction to sell a compliance instrument has the authority to do so. ARB will compare this information with the information supplied when the selling entity originally registered with ARB for an account.

Summary of Section 95921(b)(2).

Subsection (b)(2) states that transaction reports must include the Holding Account number and name of the authorized account representative of the buyer.

Rationale for Section 95921(b)(2).

The provision is needed because ARB must ensure that the person filing the transaction to buy a compliance instrument has the authority to do so. ARB will compare this information with the information supplied when the buying entity originally registered with ARB for an account.

Summary of Section 95921(b)(3).

Subsection (b)(3) states that the transaction report must include the serial numbers of the compliance instruments being transferred.

Rationale for Section 95921(b)(3).

The provision is needed because all tracking of transfers of compliance instruments is done through the serial number of the instrument.

Summary of Section 95921(b)(4).

Subsection (b)(4) states that the transaction report must include the date and time of the transaction agreement.

Rationale for Section 95921(b)(4).

The provision is needed because the accounts administrator needs to know when an agreement to transact was reached, so that it may maintain an accurate history of transfers.

Summary of Section 95921(b)(5).

Subsection (b)(5) states that the transaction report must include the date and time of the settlement of a transfer, if it is different than the date and time of the transaction agreement.

Rationale for Section 95921(b)(5).

The provision is needed because in some cases, parties to a trade may agree to transfer allowances at a future date, on terms specified in a contract. ARB will need to know when compliance instruments need to be transferred. For market monitoring purposes, ARB will need to know when instruments are being held in one account for the benefit of another entity. A *beneficial holding* means that someone other than the account holder may have ownership interest in the instrument.

Summary of Section 95921(b)(6).

Subsection (b)(6) states that the transaction report must include the price paid for the instrument.

Rationale for Section 95921(b)(6).

The provision is needed because ARB needs to know the prices paid for instruments in order to monitor market developments for potential manipulation or short supplies.

Summary of Section 95921(b)(7).

This subsection states that in cases where the buyer or seller are acting on behalf of a third party that has an ownership interest in the instrument, known as a beneficial holding, the transaction report must include the Holding Account number and name of the authorized representative of the entity with the ownership interest.

Rationale for Section 95921(b)(7).

The provision is needed because the accounts administrator must track the actual ownership interest in an instrument for market monitoring purposes. Some rules, such as the holding limit, are applied based on ownership rights, not only in whose account the instrument is located.

Summary of Section 95921(c).

Subsection states that the seller and buyer must report each transaction within three days of settlement of the transaction agreement.

Rationale for Section 95921(c).

The provision is needed because the accounts administrator needs to know when an agreement to transact was reached so that it may maintain an accurate history of transfers. If the reporting period is too long, additional transactions involving an instrument could take place before problems with previous transactions could be resolved.

Section 95922. Banking, Expiration, and Voluntary Retirement.

Summary of Section 95922(a).

Subsection (a) states that allowances issued by ARB or approved for use in California in the current year or a previous year may be held, or *banked,* by entities registered in the California cap-and-trade system.

Rationale for Section 95922(a).

The provision is needed because all those holding compliance instruments must be registered so that the accounts administrator can place the instruments in the correct account. For market monitoring purposes, ARB must know the identity of anyone holding instruments.

Summary of Section 95922(b).

Subsection (b) states that allowances issued by ARB or approved for use in California may be held by registered entities.

Rationale for Section 95922(b).

The provision is needed because all those holding compliance instruments must be registered so that the accounts administrator can place the instruments in the correct account. For market monitoring purposes, ARB must know the identity of anyone holding instruments. Unlike instruments issued for the current or previous year, there are restrictions in other parts of this regulation on the use of instruments issued for future compliance periods.

Summary of Section 95922(c).

Subsection (c) states that California compliance instruments do not have an expiration date. They remain valid until some action is taken by a registered entity to retire the allowance. This section provides a list of actions that may result in the retirement of an instrument by the Executive Officer. Once the retirement has been processed by the Executive Officer, the accounts administrator will prevent the instrument from appearing in another account in the system.

Rationale for Section 95922(c).

The provision is needed because ARB will allow account holders to hold allowances until they need them for compliance or voluntary retirement purposes.

Summary of Section 95922(c)(1).

Subsection (c)(1) states that an instrument will be removed from the tracking system when it is surrendered as part of a compliance obligation.

Rationale for Section 95922(c)(1).

The provision is needed to prevent double-counting. Once an instrument has been submitted for retirement, ARB must ensure that it cannot be transferred again between accounts on the system.

Summary of Section 95922(c)(2).

Subsection (c)(2) states that an instrument will be removed from the tracking system when it is voluntarily surrendered.

Rationale for Section 95922(c)(2).

The provision is needed to prevent double-counting. Once an instrument has been submitted for retirement, ARB must ensure that it cannot be transferred again between accounts on the system.

Summary of Section 95922(c)(3).

Subsection (c)(3) states that an instrument will be removed from the tracking system when it is surrendered within a GHG emissions-trading system with which the California cap-and-trade system has linked.

Rationale for Section 95922(c)(3).

To prevent double-counting, once a compliance instrument has been submitted for retirement, either in California or in a GHG emissions-trading system to which California has linked, ARB must ensure that it cannot be transferred again between accounts on the system.

Summary of Section 95922(d)(1).

Subsection (d)(1) states that a registered entity may voluntarily retire at any time any instrument it holds in its Holding Account.

Rationale for Section 95922(d)(1).

The provision is needed because entities without a compliance obligation may be interested in offsetting their emissions or contributing voluntarily to achieve program goals.

Summary of Section 95922(d)(2).

Subsection (d)(2) states that to voluntarily retire instruments, a registered entity simply files a transaction report with the accounts administrator listing the serial numbers of the instruments and the Retirement Holding Account controlled by the Executive Officer as the destination account.

Rationale for Section 95922(d)(2).

The provision is needed because ARB intends to keep the voluntary surrender process as simple as possible by having the entity involved use the standard transaction reporting process. The ARB Retirement Holding Account will have an account number like any other account.

Subarticle 12. Linkage to External Greenhouse Gas Emissions Trading Systems.

Section 95940. General Requirements.

Summary of Section 95940.

Section 95940 proposes that only approved compliance instruments issued by approved programs may be used for compliance in the cap-and-trade program.

Rationale for Section 95940.

This section is necessary to establish which types of compliance instruments issued by other programs may be approved for use under this article.

Section 95941. Procedures for Approval of External GHG ETS.

Summary of Section 95941.

Section 95941 proposes that the Board must approve each linkage after public notice and opportunity for public comment. In approving linkage, the Board will approve which compliance instruments issued by the program may be used for compliance.

Rationale for Section 95941.

This section is necessary to provide consistency among linked programs approved by the Board. This is ensured by requiring that the Board approves each program for linkage and determines that they meet the regulatory requirements.

Section 95942. Approval of Compliance Instruments from External GHG ETS.

Summary of Section 95942(a).

Subsection (a) proposes that once a linkage has been approved by the Board, the specified compliance instruments in Subarticle 12 can be used for compliance in this program.

Rationale for Section 95942(a).

This provision is necessary to ensure that compliance instruments issued by other programs can only be used for compliance once the Board has approved them at a programmatic level.

Summary of Section 95942(b).

Subsection (b) proposes that allowances issued by linked programs should not be subject to the quantitative usage limit specified in section 95855.

Rationale for Section 95942(b).

This provision provides that allowances issued by linked programs should not be subject to the quantitative limit on offsets because an allowance from a linked program is fungible in the same way that a California allowance is within the cap-and-trade system.

Summary of Section 95942(c).

Subsection (c) proposes that an offset credit or a sector-based credit issued by linked program should be subject to the quantitative usage limit specified in section 95855.

Rationale for Section 95942(c).

This provision provides that offset and sector-based credits issued by linked programs should be subject to the quantitative limit on offsets because California offsets and sector-based credits are also subject to this limit, and they should be treated equally.

Section 95943. Reserved for Linkage.

Summary of Section 95943.

Section 95943 is reserved as a placeholder for linkages approved by the Board in the future.

Rationale for Section 95943.

This section is necessary to ensure that provisions in the regulation are reserved to incorporate linkages that may be approved in the future, and to send a signal that California is serious about linking to programs in the future.

Subarticle 13. Offset Credits Issued by ARB.

Section 95970. General Requirements for Offset Credits Issued by ARB.

Summary of Section 95970.

Section 95970 establishes the requirements for an offset credit issued by ARB.

Rationale for Section 95970.

This section is necessary to show the requirements that an offset credit must meet to be issued by ARB. This section will help guide the reader through the credit issuance process.

Summary of Section 95970(a).

Subsection (a) requires that a greenhouse gas emission reduction be real, additional, quantifiable, permanent, verifiable, and enforceable.

Rationale for Section 95970(a).

Offset credits may only be issued for reductions that meet these qualities because Health and Safety Code section 38562(d)(1) states that these qualities are what constitute a greenhouse gas reduction. Since offset credits will be used in lieu of reducing emissions in California, those credits must be based on the same criteria.

Summary of Section 95970(b).

Subsection (b) limits offset credits' use to the limit set forth in section 95855.

Rationale for Section 95970(b).

This subsection is necessary because users of offset credits need to know the use of offset credits is limited. For justification of section 95855, please see above.

Summary of Section 95970(c).

Subsection (c) states that any offset credit issued must comply with protocols adopted by the Board.

Rationale for Section 95970(c).

This subsection is necessary because there are many different types of offset credits available, but not all of them meet the standards included in Board-adopted protocols. By including this section, ARB ensures that offset credits are subjected to uniform standards of integrity.

Summary of Section 95970(d).

Subsection (d) states that offset projects must meet the requirements of section 95973.

Rationale for Section 95970(d).

This subsection is necessary because there are many different offset projects. By including this section, ARB ensures that offset projects are subjected to uniform standards.

Summary of Section 95970(e).

Subsection (e) states that offset projects must be listed pursuant to requirements in section 95975.

Rationale for Section 95970(e).

This subsection is necessary to ensure that ARB has all the relevant information regarding offset projects using Board-approved protocols.

Summary of Section 95970(f).

Subsection (f) states that offset projects must meet the requirements for monitoring, reporting, and records retention.

Rationale for Section 95970(f).

This subsection is necessary because there are many different offset projects. By including this section, ARB ensures that offset projects are subjected to uniform requirements for monitoring, reporting, and record retention.

Summary of Section 95970(g).

Subsection (g) states that reductions from offset projects must meet the requirements for verification.

Rationale for Section 95970(g).

This subsection is necessary because there are many different offset projects. By including this section, ARB ensures that all reductions from offset projects are subjected to uniform requirements for verification.

Summary of Section 95970(h).

Subsection (h) states that offset credits must be issued according to sections 95980 and 95981.

Rationale for Section 95970(h).

This subsection is necessary because all offset credits issued under compliance offset protocols must meet the same requirements.

Summary of Section 95970(i).

Subsection (i) states that offset credits must be registered.

Rationale for Section 95970(i).

This subsection is necessary for ARB to track offset credits and the owners of offset credits at all times.

Section 95971. Procedures for Approval of Compliance Offset Protocols.

Summary of Section 95971.

Section 95971 establishes the process for how compliance offset protocols will be approved. Each compliance offset protocol must be approved by the Board after public notice and the opportunity for the public to submit comments. These protocols can then be used to generate offsets.

Rationale for Section 95971.

This section is necessary because the Board must determine if compliance offset protocols meet the criteria and requirements of this regulation for offset credits to be used for compliance purposes. It is also required by AB 32 that the Board adopt methodologies for the quantification of GHG emissions reductions (HSC § 38571) used for compliance purposes. Compliance offset protocols will be incorporated by reference in the regulation.

Section 95972. Requirements for Compliance Offset Protocols.

Summary of Section 95972(a).

Subsection (a) establishes the criteria that a compliance offset protocol must meet to be adopted by the Board.

Rationale for Section 95972(a).

This provision is necessary to provide consistency among compliance offset protocols that are adopted by the Board. Since each offset equals one metric ton of CO_2e, it is necessary that the rules governing the creation of offset credits are consistent.

Summary of Section 95972(a)(1).

Subsection (a)(1) requires that compliance offset protocols approved by the Board contain accurate quantification methods to determine the total number of GHG emission reductions or GHG removal enhancements.

Rationale for Section 95972(a)(1).

This provision is necessary because measurements and estimates associated with quantification must be as accurate as possible to ensure that GHG emissions reductions and GHG removal enhancements are real.

Summary of Section 95972(a)(2).

Subsection (a)(2) requires that compliance offset protocols approved by the Board contain monitoring procedures and processes for collecting data.

Rationale for Section 95972(a)(2).

Rules for monitoring procedures and data collection are essential for calculating the GHG emissions reductions or GHG removal enhancements that are controlled by the operator of the offset project.

Summary of Section 95972(a)(3).

Subsection (a)(3) requires that compliance offset protocols approved by the Board use a principle of conservativeness for estimating project baselines and business-as-usual emissions.

Rationale for Section 95972(a)(3).

To ensure GHG emissions reductions or GHG removal enhancements are real, the compliance offset protocol must contain factors that provide an accurate and realistic reflection of the project baseline and the business-as-usual (BAU) scenario.

Summary of Section 95972(a)(4).

Subsection (a)(4) requires that compliance offset protocols approved by the Board account for activity-shifting and market-shifting leakage.

Rationale for Section 95972(a)(4).

A compliance offset protocol must contain methods for leakage assessments to ensure that GHG emissions reductions and GHG removal enhancements are real. If leakage exists, emissions are displaced from one area to another and provide no net decrease in GHG emissions in the atmosphere.

Summary of Section 95972(a)(5).

Subsection (a)(5) requires that compliance offset protocols approved by the Board account for any uncertainties when quantifying GHG emission reductions or GHG removal enhancements.

Rationale for Section 95972(a)(5).

Compliance offset protocols must account for uncertainty to ensure that GHG emissions reductions or GHG removal enhancements are real. The greater the uncertainty in calculating GHG emissions reductions or GHG removal enhancements from project activities, the less confidence there is that all offsets generated by a project are real.

Summary of Section 95972(a)(6).

Subsection (a)(6) requires that compliance offset protocols approved by the Board ensure that GHG emission reductions are permanent.

Rationale for Section 95972(a)(6).

This provision is necessary to comply with Health and Safety Code section 38562(d)(1) that requires GHG reductions to be permanent.

Summary of Section 95972(a)(7).

Subsection (a)(7) requires that compliance offset protocols approved by the Board include mechanisms to ensure that GHG emissions reductions and GHG removal enhancements from sequestration offset projects are permanent.

Rationale for Section 95972(a)(7)

This provision is necessary if there is a risk of reversal, as is the case in most biological sequestration offset projects. In this case mechanisms must be in place to replace any reversed offset credits. Compliance offset protocols must include mechanisms to replace reversed offset credits to ensure permanence. Greenhouse gas emissions reductions and GHG removal enhancements credited as offsets must endure for a period of time, comparable to the atmospheric lifetime of anthropogenic CO_2 emissions, because the use of an offset allows a covered entity to emit one metric ton of CO_2e. If the offset credit is reversed while the emitted metric ton from the covered entity is still in the atmosphere, the atmospheric result is a net increase in GHG emissions.

Summary of Section 95972(a)(8).

Subsection (a)(8) requires that compliance offset protocols approved by the Board include the length of the crediting period.

Rationale for Section 95972(a)(8).

Compliance offset protocols must include the period of time a specific type of offset project is allowed to be issued compliance offset credits (the crediting period). The length of crediting periods may vary based on project type; therefore, ARB must include the length in the compliance offset protocol.

Summary of Section 95972(b), Crediting Periods.

Subsection (b) proposes a range for the length of crediting periods. The crediting period for non-sequestration projects is between 7 and 10 years and for sequestration-based projects between 10-30 years.

Rationale for Section 95972(b).

The length of a crediting period must be finite because ARB wants flexibility in the future to decide if certain offset project types are no longer valid for AB 32 compliance. This approach allows ARB to reevaluate and readjust project baseline and additionality requirements in the future if the regulatory environment changes and ARB determines offset projects are no longer additional. Staff proposes the range of 7 to 10 years for non-sequestration projects and 10 to 30 years for sequestration projects, to incentivize investment in these offset project types. Offset project developers need a guarantee of return on their investment. The most efficient way to do this is to establish a crediting period in which the emission reductions or removals from their projects will be eligible for compliance purposes.

Section 95973. Requirements for Offset Projects Using ARB Compliance Offset Protocols.

Summary of Section 95973(a), General Requirements for Offset Projects.

Subsection (a) establishes the requirements that offset projects must meet to be issued offset credits.

Rationale for Section 95973(a).

This provision is necessary to ensure that all offset projects meet the same criteria and are held to consistent standards.

Summary of Section 95973(a)(1).

Subsection (a)(1) proposes that all offset projects are required to use a compliance offset protocol, if the project wants to be issued offset credits.

Rationale for Section 95973(a)(1).

This provision is necessary to provide consistency among offset projects of the same type. Since each offset equals one metric ton of CO_2e, it is necessary that the rules governing the creation of offset credits are consistent. This can be achieved by requiring that all offset projects use the standardized compliance offset protocols.

Summary of Section 95973(a)(2).

Subsection (a)(2) proposes that all offset projects meet the same additionality requirements, and that additionality be assessed as of the date the offset project commences.

Rationale for Section 95973(a)(2).

This provision is necessary to provide consistency among offset projects of the same type. To ensure that each offset equals one metric ton of CO_2e, it is necessary that the rules for determining additionality are consistent for all offset projects.

Summary of Section 95973(a)(2)(A).

Subsection (a)(2)(A) proposes that GHG emissions reduction or GHG removal enhancement activities undertaken to comply with any federal, state, or local law, or regulation in the jurisdiction where the offset project is located, or would occur anyways under a conservative BAU scenario, not be eligible for offset credits.

Rationale for Section 95973(a)(2)(A).

This provision is necessary because AB 32 states that an emission reduction used for compliance purposes must be "in addition to any greenhouse gas emission reduction otherwise required by law or regulation, and any greenhouse gas emission reduction that otherwise would occur" (HSC §38562(d)(2)). Since offset projects can be located anywhere in North America, the laws and regulations applicable where the offset project is located will determine whether the project is additional.

Summary of Section 95973(a)(2)(B).

Subsection (a)(2)(B) proposes that an offset project must commence after December 31, 2006 to be considered additional.

Rationale for Section 95973(a)(2)(B).

This provision is necessary because establishing the eligibility date for an offset project is critical to determining if it is additional. December 31, 2006, reflects the implementation date of AB 32 and makes the bounds more clear for ARB to determine if an offset project was implemented to achieve AB 32 goals.

Summary of Section 95973(a)(2)(C).

Subsection (a)(2)(C) proposes that GHG emissions reductions and GHG removal enhancements must exceed the project baseline established in a compliance offset protocol to be considered additional. There are four protocols referenced in the regulation, and they include: U.S. Ozone Depleting Substances Projects

Protocol incorporated by reference date: October 2010; Livestock Manure (Digesters) Projects Protocol incorporated by reference date: October 2010; Urban Forest Projects Protocol incorporated by reference date: October 2010; and U.S. Forest Projects Protocol incorporated by reference date: October 2010.

Rationale for Section 95973(a)(2)(C).

This provision is necessary to ensure that GHG emissions reductions and GHG removal enhancements are additional. The project baseline reflects the conservative BAU scenario that would likely occur in the absence of the offset project. The offset project must prove that its emissions are less than the project baseline to receive offset credits. The number of offset credits each project receives is based on the difference of its measured emissions and the emissions in the BAU scenario.

Summary of Section 95973(a)(3).

Subsection (a)(3) proposes that offset projects must be located in the United States, Canada, or Mexico to be eligible to generate offset credits.

Rationale for Section 95973(a)(3).

This provision is necessary for ARB to have practical oversight over the offset projects that generate offsets. This geographic scope allows ARB to have oversight of its third-party verifiers, while also ensuring an ample supply of offsets. Limiting the geographic scope to only projects in California would not provide enough offset supply to meet total offset demand.

Summary of Section 95973(b), Local, Regional, and National Environmental Impact Assessment Requirements.

Subsection (b) proposes that an offset project meet all local, regional, and national requirements for environmental impact assessments that are applicable in its jurisdiction.

Rationale for Section 95973(b).

This provision is necessary to ensure that those responsible for offset projects are not implementing activities that do not comply with their local environmental laws and regulations.

Section 95974. Authorized Project Designee.

Summary of Section 95974(a), General Requirements for Designation of Authorized Project Designee.

Subsection (a) proposes to allow an operator of an offset project to give certain rights and responsibilities to a third party. Those responsible for an offset project

must say who these third parties are at the time they submit their project for listing.

Rationale for Section 95974(a).

This provision is necessary so ARB or an Offset Project Registry (OPR) knows which parties to contact when it issues offset credits or sends correspondence regarding an offset project.

Summary of Section 95974(a)(1).

Subsection (a)(1) proposes that an operator of an offset project can allow a third party to own the offset credits issued to its project, as long as the third party is allowed to hold compliance instruments.

Rationale for Section 95974(a)(1).

This provision is necessary because a landowner or project operator may have financial arrangements with third parties for the ownership of a project's offsets in which it invested. These third parties must be reported to ARB or an OPR so it knows which party to transfer the offset credits to.

Summary of Section 95974(a)(2).

Subsection (a)(2) proposes that an operator of an offset project can allow a third party to perform certain responsibilities associated with an offset project. These include: listing an offset project; monitoring, reporting and record retention; and verification.

Rationale for Section 95974(a)(2).

This provision is necessary because a landowner or project operator may contract with a third party to implement all or some aspects of their offset project on their behalf. These third parties must be reported to ARB or an OPR so it knows which party to contact regarding the offset project.

Summary of Section 95974(b), Modifications to Authorized Project Designee and Activities.

Subsection (b) proposes to allow an operator of an offset project to change and/or modify approved third parties or their approved activities once within each calendar year for a listed offset project.

Rationale for Section 95974(b).

This provision is necessary to allow operators of offset projects to conduct their private business and contracts as it wishes. Staff proposes to limit the number of

times an operator may do this to prevent any potential fraud or gaming of the program.

Section 95975. Listing of Offset Projects Using ARB Compliance Offset Protocols.

Summary of Section 95975(a), General Requirements for Offset Project Operators and Authorized Project Designees Who Are Submitting an Offset Project for Listing.

Subsection (a) proposes requirements that those responsible for an offset project must meet before an offset project can be listed.

Rationale for Section 95975(a).

This provision is necessary to ensure that ARB or an OPR has all the relevant information regarding those responsible for the offset project and details about the offset project itself.

Summary of Section 95975(a)(1).

Subsection (a)(1) proposes to require those responsible for an offset project to register with ARB, before an offset project that they are involved with is listed.

Rationale for Section 95975(a)(1).

This provision is necessary to ensure that ARB has all the relevant information regarding those responsible for the offset project. To hold compliance instruments, the party must register with ARB and open a Holding Account.

Summary of Section 95975(a)(2).

Subsection (a)(2) proposes that those responsible for an offset project may not be subject to any Holding Account restrictions, before an offset project that they are involved with is listed.

Rationale for Section 95975(a)(2).

This provision is necessary to ensure that those subject to a Holding Account restriction are not allowed to list or be involved with further offset projects.

Summary of Section 95975(a)(3).

Subsection (a)(3) proposes that the party responsible for listing an offset project must list their offset project with ARB or an OPR.

Rationale for Section 95975(a)(3).

This provision is necessary so that ARB or an OPR has all information related to the offset project if it intends to be issued offset credits.

Summary of Section 95975(b), General Requirements for Offset Project Listing.

Subsection (b) proposes that the party responsible for listing an offset project must make attestations and submit information related to the offset project to ARB or an OPR.

Rationale for Section 95975(b).

This provision is necessary to ensure that ARB or an OPR has all the relevant information regarding an offset project and that ARB has a legal and enforcement connection to those involved with offset projects.

Summary of Section 95975(b)(1).

Subsection (b)(1) proposes that the party responsible for listing an offset project attest to ARB that all information they submit to ARB or an OPR is complete and accurate.

Rationale for Section 95975(b)(1).

This provision is necessary to ensure that the information that the party responsible for listing the offset project submits is accurate and complete, and that ARB has a legal and enforcement connection to those involved with offset projects.

Summary of Section 95975(b)(2).

Subsection (b)(2) proposes that the party responsible for listing an offset project attest to ARB that they are subject to all regulatory requirements and enforcement mechanisms of the cap-and-trade program.

Rationale for Section 95975(b)(2).

This provision is necessary to ensure that the party responsible for listing the offset project acknowledges they are subject to all cap-and-trade regulatory and enforcement requirements and that ARB has a legal and enforcement connection to those involved with offset projects.

Summary of Section 95975(b)(3).

Subsection (b)(3) proposes to require the party responsible for listing an offset project to submit all documentation required to list an offset project in section 95975(c).

Rationale for Section 95975(b)(3).

This provision is necessary so that ARB or an OPR has all information related to the offset project and assess if the offset project may be eligible to be issued offset credits.

Summary of Section 95975(b)(4).

Subsection (b)(4) proposes that if an offset project is listed with an OPR, the attestations required in sections 95975(b)(1) and (b)(2) be submitted to ARB at the time of listing or when the party responsible of the offset project wishes to be issued ARB offset credits pursuant to section 95981(d)(1).

Rationale for Section 95975(b)(4).

This provision is necessary to ensure that the information that the party responsible for listing the offset project submits is accurate and complete, and that ARB has a legal and enforcement connection to those involved with offset projects.

Summary of Section 95975(c), Offset Project Listing Information Requirements.

Subsection 95975(c) proposes that the party responsible for listing an offset project submit all the listing information required in a compliance offset protocol. There are four protocols referenced in the regulation and they include: U.S. Ozone Depleting Substances Projects Protocol incorporated by reference date: October 2010; Livestock Manure (Digesters) Projects Protocol incorporated by reference date: October 2010; Urban Forest Projects Protocol incorporated by reference date: October 2010; and U.S. Forest Projects Protocol incorporated by reference date: October 2010.

Rationale for Section 95975(c).

This provision is necessary so that the party responsible for listing an offset project knows what information and documentation they must submit to ARB or an OPR for their project to be listed.

Summary of Section 95975(d), Notice of Completeness for Offset Project Listing Information.

Subsection (d) proposes that ARB or an OPR notify the party responsible for listing an offset project that all listing information is complete and the offset project may be listed. If the information submitted is incomplete, the party responsible for listing an offset project will also be notified of what is deficient.

Rationale for Section 95975(d).

This provision is necessary so the party responsible for listing an offset project knows that ARB or an OPR has received their listing information and that it can be processed for listing. If it is not complete, they will be told why and be given the opportunity to submit the correct and complete information.

Summary of Section 95975(e), Timing for Offset Project Listing in an Initial Crediting Period.

Subsection (e) proposes that the party responsible for listing an offset project in an initial crediting period submit its listing information no later than when it submits its monitoring and reporting data, as required in section 95976, to ARB or an OPR.

Rationale for Section 95975(e).

This provision is necessary to ensure that ARB or an OPR has listed an offset project before it begins accepting monitoring and reporting data for the offset project in an initial crediting period.

Summary of Section 95975(f), Listing Status of Offset Projects in an Initial Crediting Period.

Subsection (f) proposes that once the party responsible for listing an offset project in an initial crediting period submits its listing information, and ARB or an OPR has reviewed the information against the requirements for additionality, it will be listed as a "Proposed Project." This subsection also proposes that if an OPR denies the listing of an offset project in an initial crediting period, the party responsible for the offset project may request ARB to make a final decision as to whether or not the offset project meets the requirements for listing.

Rationale for Section 95975(f).

This provision is necessary so that all offset projects listed by ARB or an OPR in an initial crediting period are reviewed against the same requirements for additionality. A more in-depth analysis of additionality will be performed by an ARB-accredited third-party verifier. The project will be listed as a "proposed project" for transparency purposes on a publicly available website. The project is considered a "proposed project" at this time because it has not yet received a positive offset or qualified positive offset verification statement. This section is necessary so ARB can have the final determination as to whether an offset project meets the requirements for listing in an initial crediting period.

Summary of Section 95975(g), Timing for Offset Project Listing in a Renewed Crediting Period.

Subsection (g) proposes that the party responsible for listing an offset project in a renewed crediting period submit its listing information no earlier than 18 months before the conclusion of its initial crediting period or a previous renewed crediting period, and no later than 9 months before conclusion of its initial crediting period or a previous renewed crediting period.

Rationale for Section 95975(g).

This provision is necessary to establish a range of time in which additionality will be assessed for offset projects seeking a renewed crediting period.

Summary of Section 95975(h), Listing Status of Offset Projects in a Renewed Crediting Period.

Subsection (h) proposes that once the party responsible for listing an offset project in a renewed crediting period submits its listing information, and ARB or an OPR has reviewed the information against the requirements for additionality as of the date the renewed crediting period begins, it will be listed as a "Proposed Renewal." This subsection also proposes that if an OPR denies the listing of an offset project in renewed crediting period, the party responsible for the offset project may request ARB to make a final decision as to whether or not the offset project meets the requirements for listing. This section is necessary so ARB can have the final determination as to whether an offset project meets the requirements for listing in an initial crediting period.

Rationale for Section 95975(h).

This provision is necessary so that all offset projects listed by ARB or an OPR in a renewed crediting period are reviewed against the same requirements for additionality. A more in-depth analysis of additionality will be performed by an ARB-accredited third-party verifier. The project will be listed as a "proposed renewal" for transparency purposes on a publicly available website. The project is considered a "proposed renewal" at this time, because it has not yet received a positive or qualified positive verification statement in its renewed crediting period.

Summary of Section 95975(i), Limitations for Crediting Period Renewals.

Subsection (i) proposes that an offset project's crediting period may be renewed if it meets the requirements for additionality.

Rationale for Section 95975(i).

This provision is necessary to allow offset projects that meet the additionality criteria for a period of time to continue to reduce GHG emissions. A renewed

crediting period also allows for ARB to reevaluate the offset project's baseline and additionality before it can be renewed.

Summary of Section 95975(i)(1).

Subsection (i)(1) proposes that a non-sequestration offset project may be renewed twice, for the length of the crediting period that is specified in a compliance offset protocol.

Rationale for Section 95975(i)(1).

This provision is necessary to allow non-sequestration projects to be renewed. The period of time represented by the total renewal periods represents the length of time that staff believes these types of offset projects will continue to be additional. Crediting periods may be renewed to continue to allow offset projects to generate offset credits, as long as they continue to meet the eligibility requirements for offset projects.

Summary of Section 95975(i)(2).

Subsection (i)(2) proposes that a sequestration offset project may be renewed for a total of 100 years, regardless of the length of the crediting period that is specified in a compliance offset protocol.

Rationale for Section 95975(i)(2).

This provision is necessary to allow sequestration offset projects to be renewed. The period of time represented by the total renewal periods represents the length of time that staff believes these types of offset projects will continue to be additional and will continue to store carbon. Crediting periods for sequestration offset projects may be renewed as long as they continue to meet the eligibility requirements for offset projects, because they require long-term investment and commitment by project developers and achieve gradual GHG removals over long timescales.

Section 95976. Monitoring, Reporting, and Record Retention Requirements for Offset Projects.

Summary of Section 95976.

Section 95976 provides the monitoring, reporting, and record retention requirements for offset project.

Rationale for Section 95976.

This provision is needed to provide enforceable monitoring, reporting, and record retention requirements, to provide consistent and accurate information to ARB

and for program transparency. The document retention requirements will support verification and ARB audits of the project.

Summary of Section 95976(a).

Subsection (a) specifies that equipment used to monitor emissions from offset projects must be maintained and calibrated as required by the manufacturer at the level of accuracy stated in the Compliance Offset Protocol. Other measurements must be consistent with the applicable offset protocol.

Rationale for Section 95976(a).

This provision is needed to ensure accurate accounting of project related emissions data. It is necessary to specify basic requirements for the accuracy and measurement of GHG emissions for consistence in data quality across all offset projects.

Summary of Section 95976(b).

Subsection (b) requires any applicable missing data provisions in each Compliance Offset Protocol to be followed by the project developer.

Rationale for Section 95976(b).

This provision is necessary to ensure that those developing offset projects of the same project type are held to the same standard when accounting for missing data. Some Compliance Offset Protocols may offer these methods when there is a requirement for continuous monitoring of project performance.

Summary of Section 95976(c).

Subsection (c) requires that all monitoring equipment must be installed as specified in each Compliance Offset Protocol. Each Compliance Offset Protocol contains specific monitoring requirements to support quantification of GHG reductions or GHG removals.

Rationale for Section 95976(c).

This provision is necessary to ensure that those developing offset projects are correctly installing the required monitoring equipment specific to each project type. It is important to have the correct monitoring equipment to accurately quantify baseline emissions, project emissions, GHG removals, and GHG reductions.

Summary of Section 95976(d).

Subsection (d) requires those developing an offset project to submit an Offset Project Data Report to ARB or an OPR for a calendar year.

Rationale for Section 95976(d).

This provision is necessary to have annual reporting of data for offset projects that may be eligible to be issued offset credits by ARB. This data also provides transparency in the program, as all stakeholders will be able to see a public report on the performance of each offset project.

Summary of Section 95976(d)(1) through (d)(4).

Subsections (d)(1) through (d)(4)require those developing offset projects to annually submit the types of data for each project provided in the applicable Compliance Offset Protocol to ARB or an OPR.

Rationale for Section 95976(d)(1) through (d)(4).

These subsections are needed for program transparency, as the information will be made available to all stakeholders, and to ensure a consistent level of reporting between project types.

Summary of Section 95976(d)(5).

Subsection (d)(5) requires those developing offset projects to attest to ARB that the information provided in the Offset Project Data Report is accurate and complete.

Rationale for Section 95975(d)(5).

This provision is necessary to ensure that the information that the party responsible for submitting the Offset Project Data Report is accurate and complete and that ARB has a legal and enforcement connection to those involved with offset projects.

Summary of Section 95975(d)(6).

Subsection (d)(6) requires all Offset Project Data Reports covering the previous year of reporting to be submitted by an April 1 deadline. For sequestration projects, there are still annual reports, but GHG removals may be aggregated into an annual report to cover up to six years of GHG removals.

Rationale for Section 95975(d)(6).

This subsection is necessary to provide timely and consistent flow of data for the transparency of the program. Sequestration projects take a long time to sequester carbon, and it makes sense to allow those developing offset projects to report multiple years of GHG removals, by year, on a single report. During verification of that annual report, all GHG removals for each year would be verified at the same time, thus making it more cost-effective for those developing offset projects.

Summary of Section 95975(d)(7).

Subsection (d)(7) states that any Offset Project Data Reports that are not submitted covering the project performance for the previous year are ineligible to receive ARB offset credit for the GHG removals or GHG reductions quantified and reported in that report.

Rationale for Section 95975(d)(7).

This provision is necessary to help enforce the reporting deadline of April 1. Participation in the compliance offset program is voluntary, and this provides a mechanism to ensure that all data required for an offset project is provided in a timely manner for program transparency, and for compliance entities to be aware of the types and amounts of compliance instruments they may be able to use.

Summary of Section 95976(e).

Subsection (e) requires those developing offset projects to retain all information used to develop the Offset Project Data Report, including documentation of the project boundary, fuel usage, model inputs, and other descriptions of the project. Specific document type retention requirements are included.

Rationale for Section 95976(e).

This provision is necessary to provide careful documentation that allows for the verification of the Offset Project Data Report by a verification body and also allows for any audits by ARB.

Summary of Section 95976(e)(1).

Subsection (e)(1) provides a detailed list of the types of documentation those developing an offset project must retain for their offset project.

Rationale for Section 95976(e)(1).

This provision is necessary so that all project-relevant data is maintained to support a successful verification of the offset project and for ARB to review as part of its offset project auditing. This list provides a consistent requirement for all data retention across all offset projects.

Summary of Section 95976(e)(2).

Subsection (e)(2) specifies the length of project related data document retention, that they must be able to support verification, and that the documents must be made available to ARB or an OPR if requested.

Rationale for Section 95976(e)(2).

This provision is necessary to ensure that ARB or an OPR has access to the documents even after a crediting period has ended, in case a problem is found with the offset project.

Summary of Section 95976(e)(3)

Subsection (e)(3) specifies that documents required for retention must be extensive enough for verification of each Offset Project Data Report.

Rationale for Section 95976(e)(3)

This provision is necessary to ensure that ARB or an OPR will have enough data to confirm the crediting project has been operating in accordance with the appropriate ARB-approved protocol.

Summary of Section 95976(e)(4)

Subsection (e)(4) specifies that entities that operate an offset project must provide all documents required to be retained pursuant to the regulation within ten days to either ARB or an Offset Project Registry.

Rationale for Section 95976(e)(4)

This provision is necessary so that ARB or an Offset Project Registry can conduct an audit of the offset project to ensure the offset project is complying with all provisions of the appropriate ARB-approved protocol.

Summary of Section 95976(f), General Procedure for Interim Gas or Fuel Analytical and Monitoring Equipment Data Collection.

Section 95975(f) provides a process for those developing an offset project to make a request to ARB for an alternate method to monitor project data if there is a breakdown in the existing monitoring equipment. The proposed method must meet criteria to demonstrate it will provide accurate data to support any project-related calculations.

Rationale for Section 95976(f).

This provision is necessary because in the real world, sometimes monitoring equipment may break down. This provision provides some flexibility to those developing an offset project to propose an alternative monitoring method, so that the project may continue to accurately generate data for offset credits.

Summary of Section 95976(f)(1).

Subsection (f)(1) provides the conditions under which those developing an offset project may request an interim data collection method. Those criteria include a threshold of 20 percent missed data, hardship in fixing the failed monitoring equipment, and that the request must be made within 30 days of monitoring equipment failure.

Rationale for Section 95976(f)(1).

This provision is needed to apply the interim data collection method only in very limited circumstances. Those developing an offset project must be diligent in their own maintenance and implementation of their offset projects. However, even under the best maintenance plans, there can be unforeseen problems, and this provision is to provide recourse to those developing an offset project in those cases.

Summary of Section 95976(f)(2).

Subsection (f)(2) provides the process and information that those developing an offset project must meet to request an interim data collection method.

Rational for Section 95976(f)(2).

This provision is needed to ensure that ARB has all of the relevant information on which to make a decision on whether or not to approve a request for an interim data collection method.

Summary of Section 95976(f)(3).

Subsection (f)(3) provides ARB the right to limit the duration of the interim data collection method or request additional information before making a determination on a interim data collection method request.

Rationale for Section 95976(f)(3).

This provision is needed to require that those developing an offset project expeditiously fix the issue with their monitoring equipment and return to collecting data, as required under the applicable Compliance Offset Protocol. The interim data collection method is meant to only be used for a limited time, until the protocol requirements for monitoring may be restarted. Additional information may be needed to fully understand the extent of the equipment failure and the time needed to repair it.

Summary of Section 95976(f)(4).

Subsection (f)(4) stipulates how ARB will treat the data collected under an interim data collection method.

Rationale for Section 95976(f)(4).

This provision is necessary for verifiers and those developing an offset project to understand how to treat data that is not collected as required in a Compliance Offset Protocol. Data collected under an interim method is considered captured data, and ARB will determine its treatment during the verification assessment for material misstatement.

Section 95977. Verification of GHG Emission Reductions or GHG Removal Enhancements from Offset Projects.

Summary of Section 95977.

Section 95977 includes general verification requirements for those developing offset projects that submit Offset Project Data Reports.

Rationale for Section 95977.

This section is necessary because AB 32 requires any offset credits used for compliance to be subject to regulatory verification.

Summary of Section 95977(a), General Requirements.

Subsection (a) requires all Offset Project Data Reports to be verified by an ARB-accredited verification body.

Rationale for Section 95977(a).

This provision is necessary to ensure that only ARB-accredited verification bodies that meet certain regulatory criteria provide verification services to the those developing offset projects.

Summary of Section 95977(b), Schedule of Verification Services of Non-Sequestration Projects.

Subsection (b) specifies that verification must be done annually for non-sequestration projects (such as digesters).

Rationale for Section 95977(b).

This provision is necessary because annual verification follows annual reporting of Offset Project Data Reports. This facilitates a scheduled stream of potential offsets for non-sequestration projects. Annual verification provides a dependable schedule for stakeholders to understand the supply of offsets in the compliance program.

Summary of Section 95977(c), Schedule of Verification of Sequestration Projects.

Subsection (c) specifies that verification must be done at least once every six years for sequestration projects (such as forestry).

Rationale for Section 95977(c).

This provision is necessary because sequestration projects sequester incremental amounts of carbon per year, it is acceptable to decrease the frequency of verification from annually to at least once every six years. This allows enough carbon to be sequestered and potentially issued credits to make verification cost-effective.

Summary of Section 95977(d), Timing of Submittal of Offset Verification Statements to ARB or an OPR.

Subsection (d) specifies that verification reports must be submitted by October 1.

Rationale for Section 95977(d).

This provision is necessary to provide a consistent date for Offset Project Data Reports to be verified and issued credits each year.

Summary of Section 95977(e)(1), Rotation of Verification Bodies.

Subsection (e)(1) specifies that verification bodies and verifiers may only work for those developing offset projects for six consecutive years before rotating to a different verification body.

Rationale for Section 95977(e)(1).

This provision is necessary because rotation of verification bodies requires an entirely new verification team to evaluate the emissions data report, to minimize any biases and avoid familiarity or complacency between those developing offset projects and the verification body.

Summary of Section 95977(e)(2)(A), Notice of Verification Services.

Subsection (e)(2)(A) specifies the information that must be provided in the Notice of Verification Services submittal requirement for offset projects. The notice is also sent to an OPR, if applicable.

Rationale for Section 95977(e)(2)(A).

This provision is needed to ensure that the verification body provides information to identify a verification team with any applicable project specialists and that ARB or an OPR has an opportunity to plan to observe the site visit as part of an audit during oversight of its regulatory verification program.

Summary of Section 95977(e)(2)(B).

Subsection (e)(2)(B) requires the verification body to update the information provided in the Notice of Verification Services.

Rationale for Section 95977(e)(2)(B).

This provision is necessary for ARB to have accurate documentation of the team members that actually provided verification services for a facility, to ensure rotation of verification bodies and verifiers. The updated information on site visits will allow ARB staff to make any changes necessary in their schedule if the verification was previously chosen for an audit.

Summary of Section 95977(e)(2)(C)(i), Verification Plan for Offsets.

Subsection (e)(2)(C)(i) requires the verification team to obtain information from those developing offset projects to develop a verification plan.

Rationale for Section 95977(e)(2)(C)(i).

This provision is necessary to ensure that all verification teams request consistent and similar information to develop a verification plan. The verification plan is needed to define the scope and timing of verification services for a client.

Summary of Section 95977(e)(2)(C)(ii).

Subsection (e)(2)(C)(ii) contains lists the minimum requirements for what a verification plan should include for all verifications.

Rationale for Section 95977(e)(2)(C)(ii).

This provision is needed to ensure consistency for all verification plans and provides a written record as to what the verification team will do as part of verification, as well as the expected dates of completion.

Summary of Section 95977(e)(2)(C)(iii).

Subsection (e)(2)(C)(iii) requires the verification team to explain the scope of verification services to the client and review original documentation as part of providing verification services.

Rationale for Section 95977(e)(2)(C)(iii).

This provision is needed to ensure that the verification team communicates its planned activities for verification services to those developing offset projects and that original documentation is reviewed, to limit the opportunity of fraud by those developing offset projects. It is important for those developing offset projects to understand the verification process so that they can be prepared to provide information to the verification team.

Summary of Section 95977(e)(2)(C)(iv)(a), Site Visits for Offset Projects.

Subsection (e)(2)(C)(iv)(a) requires the verification team to make a site visit to each offset project site when they are verifying GHG emission reductions or GHG removals. While on site the verification team must conduct an array of activities to confirm the eligibility of the offset project and an accurate project boundary, review project monitoring techniques, and confirm that all of the monitoring and measuring requirements are in conformance. The requirements in this section only have to be checked the first year of the offset project verification, as it is unlikely they will change year to year.

Rationale for Section 95977(e)(2)(C)(iv)(a).

This provision is needed to validate the offset project. The check on the eligibility requirements is often a separate validation step. ARB has combined this step into the first year of verification to streamline the offset project program. This check reassures those developing offset projects that their projects are set up to conform to the applicable Compliance Offset Protocol.

Summary of Section 95977(e)(2)(C)(iv)(b).

Subsection (e)(2)(C)(iv)(b) requires the verification team to review the sources and sinks in the project boundary and review all equipment and data systems that are collecting or processing offset project-related data. It also requires the verification to ensure that the offset project meets all environmental laws. If the offset project does not meet all applicable environmental laws, it is ineligible to receive ARB offset credit.

Rationale for Section 95977(e)(2)(C)(iv)(b).

This provision is necessary to ensure that the offset project continues to operate in accordance with the Compliance Offset Protocol, so that all reported GHG reductions or GHG removals are accurately quantified. It also ensures that the offset project continues to be implemented in a manner that does not adversely affect the environment.

Summary of Section 95977(e)(2)(C)(v).

Subsection (e)(2)(C)(v) requires the verification team to review the offset project to ensure that all sources and sinks are included in the Offset Project Data Report.

Rationale for Section 95977(e)(2)(C)(v).

This provision is necessary to ensure the verification team take stock of all the GHG emission sources and sinks that are required to be included in the Offset Project Data Report for the applicable Compliance Offset Protocol. This ensures completeness of reporting for the project and accounts for any sources impacted by the offset project.

Summary of Section 95977(e)(2)(C)(vi).

Subsection (e)(2)(C)(vi) requires those developing offset projects to provide all offset project-related data to the verification team.

Rationale for Section 95977(e)(2)(C)(vi).

This provision is necessary to ensure that verification teams have access to all of the information related to an offset project during verification. If a verification team could not corroborate the data in the Offset Project Data Report with underlying data or other sources of information, they would have to submit an adverse offset verification statement.

Summary of Section 95977(e)(2)(C)(vii), Sampling Plan for Offset Project Data Reports.

Subsection (e)(2)(C)(vii) requires the verification team to develop a sampling plan that ranks the sources, sinks, and reservoirs by their relative contribution to the emissions of the offset project, and by their risk of uncertainty in quantification. The risk of uncertainty is based on the verification team's assessment of document reviews, data collection and management systems, and the general diligence of those developing offset projects in maintaining the project and all related systems.

Rationale for Section 95977(e)(2)(C)(vii).

This provision is necessary to isolate the GHG sources, sinks, or reservoirs that will be targeted for a more in-depth review by the verification team. During the course of verification services, the verification team does not recalculate the entire accounting and inventory of GHGs in the Offset Project Data Report. Greenhouse gas verification is a risk-based review of a GHG assertion in international standards. The development of a sampling plan facilitates a risk-based review of the Offset Project Data Report.

Summary of Section 95977(e)(2)(C)(viii).

Subsection (e)(2)(C)(viii) requires the verification team to identify the specific GHG sources, sinks, or reservoirs that will be subject to data checks and review for conformance. The verification team must document the information reviewed for these sources.

Rationale for Section 95977(e)(2)(C)(viii).

This provision is necessary to document the verification process, to enable ARB audits and to ensure that the verification team has conducted its due diligence in its data checks. The use of data checks is based on international best practices for GHG verification. This also provides a consistent requirement for all verifications and provides program consistency.

Summary of Section 95977(e)(2)(C)(ix).

Subsection (e)(2)(C)(ix) requires the sampling plan to be updated prior to the completion of verification services.

Rationale for Section 95977(e)(2)(C)(ix).

This provision is necessary because during the course of verification, the verification team may uncover information that requires them to look more closely at something not contained in the original sampling plan. An updated sampling plan provides a written record of the verification process, to allow for ARB audits.

Summary of Section 95977(e)(2)(C)(x).

Subsection (e)(2)(C)(x)requires the verification team to continuously revise the sampling plan as evidence becomes available.

Rationale for Section 95977(e)(2)(C)(x).

This provision is necessary to ensure that the verification team is diligent in its recording of information during the course of providing verification services. All findings during the verification services must be recorded to support ARB audits and transparency in the performing of verification services upon which the verification team forms its findings.

Summary of Section 95977(e)(2)(C)(xi).

Subsection (e)(2)(C)(xi)provides the document and data retention requirements for verification bodies.

Rationale for Section 95977(e)(2)(C)(xi).

This provision is necessary to ensure that all verification-related information is retained to enable ARB audits, and that there is a clear, documented evidence upon which a verification body made its findings when it issued an Offset Verification Statement.

Summary of Section 95977(e)(2)(C)(xii).

Subsection (e)(2)(C)(xii) specifies which data checks must be performed by the verifier, including the evaluation of methods and factors, emission sources, and other Compliance Offset Protocol requirements.

Rationale for Section 95977(e)(2)(C)(xii).

This provision is necessary to define data checks so that all verification bodies are held to the same standards when completing Offset Verification Services. A clear listing of requirements provides some certainty to both those developing

offset projects and verifiers as to how data checks must be completed. Data checks are critical in a risk-based assessment for Offset Material Misstatement and conformance.

Summary of Section 95977(e)(2)(C)(xiii).

Subsection (e)(2)(C)(xiii) requires those developing offset projects to fix any errors in the Offset Project Data Report, if possible.

Rationale for Section 95977(e)(2)(C)(xiii).

This provision is necessary because in a cap-and-trade program, it is necessary to have the data as accurate as possible.

Summary of Section 95977(e)(2)(C)(xiv).

Subsection (e)(2)(C)(xiv) requires verifiers to conduct their own calculations of sources that were identified as having high risk for potential error in the sampling plan and to review the calculations of the GHG emissions or GHG reductions for those sources for conformance with the regulation or applicable Compliance Offset Protocol.

Rationale for Section 95977(e)(2)(C)(xiv).

This provision is necessary so that all verifiers are held to a consistent standard that requires them to recalculate emissions sources for select sources and review those same sources for conformance. A verifier's recalculation of the GHG sources, sinks, or reservoirs provides a comparison for what the verifier believes should be the number based on the Compliance Offset Protocol versus what those developing an offset project included in the Offset Project Data Report. This process is based on international best practices for GHG verification.

Summary of Section 95977(e)(2)(C)(xv).

Subsection (e)(2)(C)(xv) specifies how the log of issues is developed by the verifier, and how the verifier must describe the impact of any identified issues on the Offset Verification Statement.

Rationale for Section 95977(e)(2)(C)(xv).

This provision is necessary because the log of issues is required to ensure that those developing offset projects understand how each of the identified issues could impact the Offset Verification Statement, helping to ensure a transparent process between the verification body and those developing offset projects. The issues log can also inform ARB as to any problems discovered during the course of verification.

Summary of Section 95977(e)(2)(C)(xvi) through (e)(2)(C)(xvii).

Subsections (e)(2)(C)(xvi) through (e)(2)(C)(xvii) describe when and how an Offset Material Misstatement is evaluated, including an equation that relates the errors and omissions to the accuracy of the reported data.

Rationale for Section 95977(e)(2)(C)(xvi) through (e)(2)(C)(xvii).

These provisions are necessary because a single equation for Offset Material Misstatement ensures that all verifiers are consistently evaluating emissions for each project using the same calculation. Without a consistent method, verifiers may reach different conclusions when reviewing the same data. This equation is rooted in financial auditing and is consistent with other regulatory or voluntary offset verification programs.

Summary of Section 95977(e)(2)(C)(xviii)(a), Offset Verification Statement.

Subsection (e)(2)(C)(xviii)(a) requires the verification body to prepare an Offset Verification Statement that documents the findings for the verification of the Offset Project Data Report, and that those findings are independently reviewed within the verification body.

Rationale for Section 95977(e)(2)(C)(xviii)(a).

This provision is necessary to bring the verification process to a close, provide findings, and have internal verification body checks on those findings as a quality control/quality assurance (QC/QA) measure on the services provided by the verification body.

Summary of Section 95977(e)(2)(C)(xviii)(b).

Subsection (e)(2)(C)(xviii)(b) requires an independent reviewer to review key decisions made by the verification body during the course of verification services.

Rationale for Section 95977(e)(2)(C)(xviii)(b).

This provision ensures that the independent reviewer focus on key points that could easily affect the outcome of a verification and provide a check on decisions made by the verification team at those critical points.

Summary of Section 95977(e)(2)(C)(xviii)(c).

Subsection (e)(2)(C)(xviii)(c) requires the independent reviewer to remain completely out of the verification process until they objectively review the verification teams findings. The independent reviewer also confirms that the verification team met all of its obligations under the regulation when providing verification services.

Rationale for Section 95977(e)(2)(C)(xviii)(c).

This provision is necessary to ensure that even within the verification body, there truly is an objective review of the verification team's findings before an Offset Verification Statement is issued for the Offset Project Data Report. The verification body takes responsibility for the work of its staff under the regulation and must be sure that it has met all of the requirements of the regulation before submitting the Offset Verification Statement. The concept of an internal review is also consistent with international best practices for GHG verification.

Summary of Section 95977(e)(2)(C)(xviii)(d).

Subsection (e)(2)(C)(xviii)(d) requires the verification team to compile a detailed verification report of key documents developed during the verification process, include in the verification statement whether or not the Offset Project Data Report contains an Offset Material Misstatement, and whether or not the report conforms to the regulation and applicable Compliance Offset Protocol. The lead verifier on the verification team must attest that all information provided in the Offset Verification Statement is accurate and complete, and that all verification requirements have been met.

Rationale for Section 95977(e)(2)(C)(xviii)(d).

This provision is necessary to ensure those developing offset projects understand the verification process and findings that led to the Offset Verification Statement. It also ensures the verification body compiles a final report of all the evidence that supports the Offset Verification Statement. This report can also provide information to ARB during an audit, to ensure consistency and quality of its verification program. The attestation statement holds the lead verifier for the verification accountable to ARB for the findings in the Offset Verification Statement.

Summary of Section 95977(e)(2)(C)(xix).

Subsection (e)(2)(C)(xix) requires the verification body to provide those developing offset projects with 10 working days in which to modify the Offset Project Data Report if the those developing offset projects are about to receive an Adverse Offset Verification Statement. This section also describes the process for ARB or an OPR to review the Offset Verification Statement and provide a final resolution to any dispute issues that cannot be resolved between the verification body and those developing offset projects. If those developing offset projects are not satisfied by a review provided by the OPR, they may appeal to ARB to conduct a second review.

Rationale for Section 95977(e)(2)(C)(xix).

This provision provides those developing offset projects with 10 working days to modify and correct the Offset Project Data Report and provides enough time for

those developing offset projects to make the necessary changes to the report, while balancing the need to complete the verification in a timely fashion. The dispute resolution process provides a mechanism for the verification body and those developing offset projects to have an Offset Project Data Report reviewed under certain circumstances before an Offset Verification Statement is issued.

Summary of Section 95977(e)(2)(C)(xx).

Subsection (e)(2)(C)(xx) states that no changes may be made to Offset Project Data Reports after an Offset Verification Statement has been submitted to ARB.

Rationale for Section 95977(e)(2)(C)(xx).

This provision is necessary in a cap-and-trade program so that ARB can issue offset credit to verified GHG reductions or removals. Verified data is considered accurate and complete as it has been through the verification process and subject to scrutiny by an independent eye. ARB does not anticipate those developing offset projects needing to change their data after the completion of verification.

Summary of Section 95977(e)(2)(C)(xxi).

Subsection (e)(2)(C)(xxi) specifies that if a high conflict is discovered, the Offset Project Data Report must be re-verified by a different verifier.

Rationale for Section 95977(e)(2)(C)(xxi).

This provision is necessary because a verification body that contracts with those developing offset projects within one year of submitting an Offset Verification Statement in order to provide a high-conflict service may not have provided an independent and unbiased Offset Verification Statement. It is necessary to invalidate any verification where there is an identified high conflict of interest, and that verification body may have their accreditation revoked in response to that activity. Because it is important to ensure the Offset Verification Statement is provided by an unbiased verifier, any high conflicts discovered during or after verification triggers re-verification so that the accuracy of the report can be assessed by a truly independent verifier.

Summary of Section 95977(e)(2)(C)(xxii).

Subsection (e)(2)(C)(xxii) requires those developing offset projects to provide ARB with all data available to the verifier for review by ARB staff.

Rationale for Section 95977(e)(2)(C)(xxii).

This provision is necessary because in order for ARB to have effective oversight of the program and to audit reports, ARB staff must have access to all data used to develop the Offset Project Data Report. ARB must be able to request all

project-related data in order to ensure Offset Project Data Reports are accurate and complete.

Summary of Section 95977(e)(2)(C)(xxiii).

Subsection (e)(2)(C)(xxiii) requires the verification body to provide ARB with a detailed verification report.

Rationale for Section 95977(e)(2)(C)(xxiii).

This provision is necessary because for ARB to evaluate the work of verification bodies, it is necessary to review and audit their detailed verification reports.

Summary of Section 95977(e)(2)(C)(xxiv).

Subsection (e)(2)(C)(xxiv) requires a verification body to make itself available for ARB audit.

Rationale for Section 95977(e)(2)(C)(xxiv).

This provision is necessary because for ARB to have effective oversight of the program, ARB may need to audit verification bodies and verifiers to evaluate the quality of verification services provided under this section.

Summary of Section 95977(f)

Subsection (f) requires that offset projects must meet both the verification requirements of the regulation as well as any additional verification requirements of the specific Compliance Offset Protocol, if any.

Rationale for Section 95977(f)

This provision is necessary to ensure that all offset projects comply with both the regulation and any project specific verification requirements. The verification requirements are necessary to ensure that GHG reductions reported are actually occurring.

Section 95978. Offset Verifier and Verification Body Accreditation.

Summary of Section 95978.

Section 95978 requires offset project verifiers and verification bodies to meet the requirements in Subarticle 4, section 95132 of the Mandatory Reporting Regulation.

Rationale for Section 95978.

This section is necessary so all verifiers and verification bodies providing verification services under the mandatory reporting program or offset program

will be held to the same rigorous standards for accreditation. These standards are based on existing accreditation requirements in other voluntary and regulatory GHG reporting and offset programs. The requirements are also consistent with international best practices for verification body accreditation.

Section 95979. Conflict of Interest for Verification Bodies for Verification of Offset Project Data Reports.

Summary of Section 95979(a).

Subsection (a) stipulates that the conflict-of-interest requirements apply to each verification body and the individual verifiers.

Rationale for Section 95979(a).

This provision is necessary because conflict of interest must apply at the company and individual level to ensure a truly unbiased review of any Offset Project Data Report.

Summary of Section 95979(b)(1).

Subsection (b)(1) specifies that a high conflict of interest exists where the operator and verification body share specified staff within the previous three years.

Rationale for Section 95979(b)(1).

This provision is necessary because in order to provide an impartial and independent verification statement, it is necessary to avoid any relationships between parties that may be perceived as a conflict. If specified staff is shared between these parties, it would be perceived as a conflict of interest and would jeopardize the integrity of the program. Only verification bodies that are truly independent and can provide an objective opinion on the report may provide Offset Verification Services.

Summary of Section 95979(b)(2)(A) through (b)(2)(T).

Subsections (b)(2)(A) through (b)(2)(T) specify that a high conflict exists where the verification body staff has provided any of the listed non-verification services, including developing a GHG inventory, providing appraisal services, and providing any legal services.

Rationale for Section 95979(b)(2)(A) through (b)(2)(T).

These provisions are needed because in order for the verification body to remain independent and objective when providing Offset Verification Services, it is necessary to specify some services that are not allowed to have been provided during the past three years to the Offset Project Operator. These services are so

closely related to the type of work done during GHG verification that they must be considered a high risk for a conflict and potential for bias in review. Any staff that has provided any listed service means the verification body is not eligible to provide Offset Verification Services under this regulation until three years have passed from the date of those previous services.

Summary of Section 95979(b)(3).

Subsection (b)(3) specifies that any incentive provided to the Offset Project Operator by the verification body in order to provide verification services is a high conflict.Rationale for Section 95979(b)(3).

This provision is necessary because providing an incentive to the verifier would bias the verifier in the Offset Project Operator's favor.

Summary of Section 95979(b)(4).

Subsection (b)(4) states that any Offset Verification Services provided in the past three years to the Offset Project Operator, except for Offset Verification Services, as allowed for six years, is a high conflict of interest.

Rationale for Section 95979(b)(4).

Subsection (b)(4) is necessary to prevent complacency or bias in review. This section limits verifiers who have done these Offset Verification Services in the last three years from providing Offset Verification Services unless those services were provided as part of the allowed six years.

Summary of Section 95979(c).

Subsection (c) specifies that conflict of interest is low where no business relationship exists, or the services provided in the past three years were valued less than 20 percent of the fee for the proposed verification.

Rationale for Section 95979(c).

This provision is necessary because ARB has determined that some existing business relationships are acceptable if the dollar amount is small relative to the fee expected to be paid for verification. If the fee for verification is low relative to the consulting services, there may be an incentive to provide a positive or qualified positive offset verification statement in order to continue to be paid for other non-verification services. Having a dollar threshold allows the Offset Project Operator and verification body to determine if an existing business relationship is acceptable for future verification work.

Summary of Section 95979(d).

Subsection (d) specifies that a conflict is medium if the conflict is not high or low. The verification body would need to submit a mitigation plan to remove any conflicts, if possible, or if there are any personal or familiar relationships between the verification body and Offset Project Operator.

Rationale for Section 95979(d).

This provision is needed because ARB understands that some relationships may have existed between a verification body and an Offset Project Operator. If that relationship does not include any of the situations that constitute a high conflict of interest, then the verification body is afforded an opportunity to mitigate any other conflicts.

Summary of Section 95979(e).

Subsection (e) specifies requirements for submittal of information about potential conflicts of interest between the verification body and the Offset Project Operator. This information includes whether the conflict is high, medium, or low; whether any member of the verification team has provided any services to the Offset Project Operator in the past three years; and an attestation that the submitted information is accurate and complete.

Rationale for Section 95979(e).

This provision is necessary because the conflict-of-interest submittal allows the verification body to demonstrate that it has evaluated that potential for conflict of interest according to the regulation and certifies to the nature of any existing relationship under penalty of perjury.

Summary of Section 95979(f)(1).

Subsection (f)(1) requires the verification body to monitor and disclose conflicts of interest after commencement of verification services for an Offset Project Operator. The disclosure must also present details about the conflict of interest and how the verification body will mitigate or neutralize the potential for conflict of interest.

Rationale for Section 95979(f)(1).

This provision is necessary so that a verification body is diligent and careful not to engage in any activities beyond GHG verification that could be perceived as a potential conflict of interest. This is important to the integrity of the program.

Summary of Section 95979(f)(2).

Subsection (f)(2) requires the verification body to monitor for conflicts of interest for up to one year after the completion of verification services. The verification body must disclose to ARB within 30 days once it enters into another contract for

non-verification services with the Offset Project Operator. ARB or an OPR will make a decision as to whether the conflict of interest is high and jeopardizes the Offset Verification Statement and the accreditation of the verification body.

Rationale for Section 95979(f)(2).

This provision is necessary to maintain the integrity of the program and ensure there is no bias by the verification body by the promise of future work for the Offset Project Operator.

Summary of Section 95979(f)(3).

Subsection (f)(3) requires the verification body to disclose any emerging conflicts of interest that may become apparent during the course of verification services. If the conflict is determined to be high, the verification body will not be allowed to continue providing the verification services.

Rationale for Section 95979(f)(3).

This section is necessary to maintain the integrity of the program and ensure that even during the course of verification services, the verification body does not do anything that would be perceived as a conflict of interest under the regulation.

Summary of Section 95979(f)(4).

Subsection (f)(4) requires the verification body to notify ARB of any changes to their business structure within one year of providing Offset Verification Services.

Rationale for Section 95979(f)(4).

This provision is necessary because ARB must ensure that a financial arrangement or promise of financial arrangement is not made between the verification body and the Offset Project Operator in order to win a positive offset verification statement. ARB must be notified if any changes to the verification body, such as mergers or acquisitions, are made; especially any that involve the Offset Project Operator.

Summary of Section 95979(f)(5).

Subsection (f)(5) allows ARB to rescind an Offset Verification Statement and provides 90 days for an Offset Project Operator to hire another verification body if the first verification body violates the conflict-of-interest requirements.

Rationale for Section 95979(f)(5).

This provision is necessary because if a verification body violates the conflict-of-interest requirements, it is necessary to provide the Offset Project Operator with additional time in which to hire another verification body. A violation of the

conflict of interest means the Offset Verification Statement may not have been objective and a new Offset Verification Statement must be submitted by a different verification body.

Summary of Section 95979(f)(6).

Subsection (f)(6) allows ARB to rescind the accreditation of the verification body or verifiers if they violate the conflict-of-interest requirements.

Rationale for Section 95979(f)(6).

This provision is necessary because the penalty for violating the conflict-of-interest requirements must be specified so that all parties understand what the consequences of providing services to an Offset Project Operator are when a previous relationship with an Offset Project Operator is not disclosed to ARB. Rescinding the accreditation of a verification body means that company would no longer be allowed to verify data in ARB's cap-and-trade program.

Section 95980. Issuance of Offset Credits.

Summary of Section 95980(a).

Subsection (a) proposes the requirements that GHG emissions reductions or GHG removal enhancements must meet to be issued offsets. This section also proposes that an offset credit is equal to one metric ton of CO_2e and that the GHG emissions reductions or GHG removal enhancements must occur at the location where the reduction activity is implemented (direct).

Rationale for Section 95980(a).

This provision is necessary to ensure that all offset credits issued under ARB protocols meet the same requirements. An offset credit should be equal to one metric ton of CO_2e, so that it is equivalent to an allowance. Direct GHG emissions reductions or direct GHG removal enhancements are the simplest and most straightforward to incorporate into an offset project because they occur on-site and can therefore, be easily verified. Crediting direct reductions that occur on-site also makes ownership of offset credits that result from an offset project clearer, and the risk of double-counting is reduced.

Summary of Section 95980(a)(1).

Subsection (a)(1) proposes that an offset credit may only be issued to an offset project that has been listed with ARB or an OPR.

Rationale for Section 95980(a)(1).

This provision is necessary to ensure that ARB or an OPR has all the relevant information regarding an offset project, that information regarding the offset

project has been made publicly available, and that ARB has a legal and enforcement connection to those involved with offset projects.

Summary of Section 95980(a)(2).

Subsection (a)(2) proposes that offset credits may only be issued if the offset project was issued a positive offset or qualified positive offset verification statement by an ARB-accredited offset verifier.

Rationale for Section 95980(a)(2).

This provision is necessary to ensure that GHG emissions reductions or GHG removal enhancements are qualified by an ARB-accredited third-party verifier. Having an accredited verifier issue a positive offset or qualified positive offset verification statement ensures confidence in the verification by the public, ARB, and an OPR.

Summary of Section 95980(a)(3).

Subsection (a)(3) proposes that offset credits may only be issued if an ARB-accredited offset verifier has submitted a positive offset or qualified positive offset verification statement to ARB, or an OPR and has been attested to by an ARB-accredited offset verifier.

Rationale for Section 95980(a)(3).

ARB or an OPR must receive the positive offset or qualified positive offset verification statement and review it to determine if offset credits should be issued.

Summary of Section 95980(b), Determination for Timing and Duration of Initial Crediting Periods.

Subsection (b) proposes that an offset project's initial crediting period will begin on the date that its first offset verification statement says that GHG emission reductions or GHG removal enhancements actually occurred.

Rationale for Section 95980(b).

This provision is necessary to establish when the offset project's initial crediting period begins. This timing is appropriate because it sometimes takes a while for the offset project to be fully implemented and the crediting period should reflect the timeframe that the project reduces GHG emissions or stores GHGs.

Summary of Section 95980(c), Determination for Timing and Duration of Renewed Crediting Periods.

Subsection (c) proposes that an offset project's renewed crediting period will begin on the date following the conclusion of the offset project's initial crediting period or previously renewed crediting period.

Rationale for Section 95980(c).

This provision is necessary to establish when the offset project's renewed crediting period begins. This timing is appropriate because, unlike the initial crediting period, the project should already be implemented at the time it renews its crediting period.

Section 95981. Process for Issuance of Offset Credits.

Summary of Section 95981(a).

Subsection (a) proposes the timing for offset credits being issued by ARB or an OPR. Offset credits will be issued by ARB or an OPR within 45 days of receiving a positive offset or qualified positive offset verification statement.

Rationale for Section 95981(a).

This provision is necessary so the party identified to receive offset credits knows when they will receive them. 45 days will give staff enough time to review the offset verification statements and contact the offset verifier if there are any questions regarding the statement.

Summary of Section 9598(b), Change of Listing Status.

Subsection (b) proposes that once offset credits have been issued by ARB or an OPR to an offset project, the listing status of the offset project will be changed to either an "Active Project" or "Active Renewal."

Rationale for Section 95981(b).

This provision is necessary for transparency purposes, so the public knows whether or not an offset project has been issued offset credits. This information will be available on a public website, and the number of offset credits issued to the offset project for each offset verification statement will also be made available.

Summary of Section 95981(c), Notice of Determination of Issuance of Offset Credits.

Subsection (c) proposes that ARB or an OPR will notify the party identified to receive offset credits, within15 days of issuance, that the credits have been issued.

Rationale for Section 95981(c).

This provision is necessary so that the party identified to receive offset credits knows that ARB or an OPR has issued them. The 15-day timeframe is designed to allow staff to prepare the necessary notification and, if applicable, any documentation to send to the recipient of the offset credits.

Summary of Section 95981(d), Requirements for Offset Projects Submitted Through an Offset Project Registry Seeking Issuance of ARB Offset Credits.

Subsection (d) proposes requirements for offset projects whose documentation was submitted through an OPR, if the party responsible for the offset project is seeking offset credits issued by ARB.

Rationale for Section 95981(d).

This provision is necessary because an offset credit must ultimately be issued by ARB to be used for compliance under this article.

Summary of Section 95981(d)(1).

Subsection (d)(1) proposes the information that the party responsible for the offset project must submit to be issued offset credits by ARB.

Rationale for Section 95981(d)(1).

This provision is necessary because ARB must obtain all information submitted to an OPR for the offset project including: listing, monitoring, reporting, and verification information, to issue an offset credit. The attestations must also be made available to ARB so that it can enforce against those responsible for offset projects, if necessary.

Summary of Section 95981(d)(2).

Subsection (d)(2) proposes that the verification body that submitted offset verification statements to an OPR must attest to ARB the truthfulness and accuracy of its findings.

Rationale for Section 95981(d)(2).

This provision is necessary so that ARB can enforce against the verification bodies and verifiers that provided verification services to an offset project through an OPR.

Summary of Section 95981(d)(3).

Subsection (d)(3) proposes that ARB will notify the party responsible for the offset project within 30 days, whether the information they submitted is complete, and if not, what is deficient.

Rationale for Section 95981(d)(3).

This provision is necessary so that the party responsible for the offset project knows if the information they submitted is complete, and if not, what additional information they must submit. The 30-day timeframe is designed to allow staff adequate time to review the material submitted for issuance of ARB offsets.

Summary of Section 95981(d)(4).

Subsection (d)(4) proposes that ARB will issue offset credits within 30 days of determining that the information submitted for issuance of ARB offsets is complete.

Rationale for Section 95981(d)(4).

This provision is necessary so that the parties involved in the offset project know that ARB has issued offsets. The 30-day timeframe is designed to allow staff to prepare the necessary notification and, if applicable, any documentation to send to those involved in the offset project.

Summary of Section 95981(d)(5).

Subsection (d)(5) proposes that ARB may request additional information for issuance of ARB offsets, as needed, before issuing offset credits.

Rationale for Section 95981(d)(5).

This provision allows those responsible for the offset project, or those that verified the project, to provide any additional information that ARB deems necessary to the issuance of ARB offsets.

Summary of Section 95981(d)(6).

Subsection (d)(6) proposes that ARB may deny issuance of ARB offset credits. The party responsible for the offset project may petition to be allowed to resubmit its information and respond to any issues that prevented ARB from issuing offset credits.

Rationale for Section 95981(d)(6).

This provision is necessary to allow ARB to deny issuance of ARB offsets if the information submitted is insufficient to warrant issuance. It is also necessary to give the party responsible for an offset project one last opportunity to show it qualifies to be issued ARB offset credits.

Summary of Section 95981(e).

Subsection (e) proposes that any offset credits issued by an OPR must be retired in its registry system before ARB can register the offset credits in its tracking system.

Rationale for Section 95981(e).

This provision is necessary to avoid double-counting of offset credits in multiple systems, and to ensure that the same offset credits cannot be bought, sold, or retired if they have already been used.

Summary of Section 95981(f), Receipt of Offset Credits Issued by ARB.

Subsection (f) proposes that ARB offset credits will be registered to the party identified to receive offset credits within 15 days of notification.

Rationale for Section 95981(f).

This provision is necessary to ensure that the party identified to receive offset credits knows they have been deposited into their account. The 15-day timeframe is designed to allow ARB time to transfer the offset credits to the correct party and process the transactions in the tracking system correctly.

Section 95982. Registration of Offset Credits Issued by ARB.

Summary of Section 95982.

This section proposes that offset credits issued by ARB must be registered in ARB's tracking system.

Rationale for Section 95982.

This section is necessary for ARB to track offset credits it issues, as well as owners of offset credits at all times.

Summary of Section 95982(a).

Subsection (a) proposes that each offset credit be given a unique serial number.

Rationale for Section 95982(a).

This section is necessary so that each offset credit cannot be used more than once and ARB is able to track who owns each offset at all times.

Summary of Section 95982(b).

Subsection (b) proposes that ARB offset credits will be transferred to the account of the party identified to receive offset credits.

Rationale for Section 95982(b).

This provision is necessary to ensure that the party identified to receive offset credits knows they have been deposited into their account.

Section 95983. Offset Reversals.

Summary of Section 95983(a).

Subsection (a) proposes that a portion of offset credits issued to forestry projects developed under the U.S. Forest Projects Protocol must be placed into the Forest Buffer Account. If the offset project originated with an OPR, these offset credits must be transferred to ARB.

Rationale for Section 95983(a).

This provision is necessary to develop an ARB insurance mechanism that can be used to protect against unintentional reversals that may occur in forest projects.

Summary of Section 95983(a)(1).

Subsection (a)(1) proposes that the amount of offset credits that must be placed into the Forest Buffer Account is specified in the U.S. Forest Projects Protocol, incorporated by reference.

Rationale for Section 95983(a)(1).

This provision is necessary to determine how many offset credits must be placed into the Forest Buffer Account. This amount is based on a number of default and calculated factors that differ depending on the individual project. The factors and equations that must be used to determine each project's reversal risk rating are provided in the U.S. Forest Projects Protocol.

Summary of Section 95983(a)(2).

Subsection (a)(2) proposes that offset credits be placed into the Forest Buffer Account at the time offset credits are registered.

Rationale for Section 95983(a)(2).

This provision is necessary to ensure offset credits are immediately placed into the Forest Buffer Account, as opposed to the account of the party identified to receive offset credits.

Summary of Section 95983(a)(3).

Subsection (a)(3) proposes that all offset credits initially held by an OPR for unintentional reversals be transferred to ARB's Forest Buffer Account, and then retired in its own registry system.

Rationale for Section 95983(a)(3).

This provision is necessary to ensure that the size of the Forest Buffer Account is adequate enough to cover a large loss of stored carbon in the forest sector. If each OPR maintains its own buffer account and does not transfer the offset credits to ARB there may not be enough offset credits in the Forest Buffer Account if a large loss occurs.

Summary of Section 95983(b), Unintentional Reversals.

Subsection (b) proposes that the party responsible for an offset project must notify ARB within six months when an unintentional reversal is discovered.

Rationale for Section 95983(b).

This provision is necessary so that ARB is informed that an unintentional reversal occurred.

Summary of Section 95983(b)(1).

Subsection (b)(1) proposes the information that a party responsible for a forest offset project must submit to ARB in the event of an unintentional reversal.

Rationale for Section 95983(b)(1).

This provision is necessary so that ARB can assess why a reversal occurred, whether it was unintentional, and how many metric tons of GHGs were reversed.

Summary of Section 95983(b)(1)(A).

Subsection (b)(1)(A) proposes that a party responsible for a forest offset project must explain to ARB the nature of the unintentional reversal.

Rationale for Section 95983(b)(1)(A).

This provision is necessary so that ARB can assess why a reversal occurred to determine if it was unintentional.

Summary of Section 95983(b)(1)(B).

Subsection (b)(1)(B) proposes that a party responsible for a forest offset project must verify the level of carbon stored in its forest within a year of when the unintentional reversal was discovered.

Rationale for Section 95983(b)(1)(B).

This provision is necessary so that ARB can determine how many metric tons of GHGs were reversed.

Summary of Section 95983(b)(2).

Subsection (b)(2) proposes that ARB will retire offset credits from the Forest Buffer Account in the amount of the reversal.

Rationale for Section 95983(b)(2).

This provision is necessary to ensure the permanence of offset credits issued for stored carbon. If credited GHGs have been released back into the atmosphere, an equivalent amount of offset credits must be retired to replace it. If it is not replaced by another offset or an allowance, there is a net increase of GHGs in the atmosphere.

Summary of Section 95983(c), Intentional Reversals.

Subsection (c) proposes the requirements for the parties responsible for the forest offset projects in the event of an intentional reversal.

Rationale for Section 95983(c).

This provision is necessary to establish the requirements for intentional reversals.

Summary of Section 95983(c)(1).

Subsection (c)(1) proposes that within 30 days of an intentional reversal, the party responsible for the project must give written notice to ARB of the occurrence. They must also explain and describe the nature of the intentional reversal.

Rationale for Section 95983(c)(1).

This provision is necessary for ARB to be notified that an intentional reversal occurred and evaluate the nature of the intentional reversal.

Summary of Section 95983(c)(2).

Subsection (c)(2) proposes that ARB will evaluate the information submitted to determine if an intentional reversal has occurred. If ARB determines that an intentional reversal has occurred, it will notify the party responsible for the offset project of its findings.

Rationale for Section 95983(c)(2).

This provision is necessary so that the party responsible for the offset project is informed of ARB's determination that it believes an intentional reversal has occurred.

Summary of Section 95983(c)(3).

Subsection (c)(3) proposes that three months within receiving ARB's notification pursuant to section 95983(c)(2), the party responsible for a forest offset project must verify the level of carbon stored in its forest.

Rationale for Section 95983(c)(3).

This provision is necessary so that ARB can determine how many metric tons of GHGs were reversed, and if necessary, take enforcement action.

Summary of Section 95983(d), Disposition of Forest Sequestration Projects After an Unintentional Reversal.

Subsection (d) proposes that if an unintentional reversal occurs, and its stored carbon levels are below its project baseline, the project will be automatically terminated.

Rationale for Section 95983(d).

This provision is necessary because the project baseline is no longer applicable and can no longer be used to determine project performance.

Summary of Section 95983(d)(1).

Subsection (d)(1) proposes that if an offset project has been terminated due to an unintentional reversal, the party responsible for the offset project may resubmit the offset project for listing.

Rationale for Section 95983(d)(1).

This provision is necessary to allow projects that suffer unintentional reversals the ability to submit a new project with a new revised baseline calculation.

Summary of Section 95983(d)(2).

Subsection (d)(2) proposes that if an unintentional reversal occurs, and its stored carbon levels are above its project baseline, it may continue to operate as long as the number of released GHGs have been replaced with an equivalent amount of offset credits from the Forest Buffer Account. This subsection also proposes that the party responsible for the forest project must continue to contribute to the Forest Buffer Account in the future.

Rationale for Section 95983(d)(2).

This provision is necessary to allow a forest project that undergoes an unintentional reversal to continue generating offset credits utilizing the same baseline.

Summary of Section 95983(e), Disposition of Forest Sequestration Projects After an Intentional Reversal.

Subsection (e) proposes what should happen to a forest offset project in the event on an intentional reversal.

Rationale for Section 95983(e).

This provision is necessary so that the party responsible for a forest offset project knows what will happen if there is an intentional reversal of a forest project.

Summary of Section 95983(e)(1).

Subsection (e)(1) proposes that if ARB determines an intentional reversal has occurred, the forest offset project will be automatically terminated.

Rationale for Section 95983(e)(1).

This provision is necessary to ensure the additionality of credited reductions. This provision prevents projects from intentionally reversing credited carbon stocks below allowable levels, and registering a new project that would yield credits from the intentionally reduced stocks.

Summary of Section 95983(e)(2).

Subsection (e)(2) proposes that if an intentional reversal has occurred, a new forest offset project may not be initiated within the same project boundary.

Rationale for Section 95983(e)(2).

This provision is necessary to ensure that, in the case of an intentional reversal, an amount of offset credits equivalent to the reversed carbon previously issued to the project is invalidated and replaced.

Summary of Section 95983(e)(3).

Subsection (e)(3) proposes that offset credits issued to a terminated forest offset project due to an intentional reversal may be invalidated pursuant to section 95985.

Rationale for Section 95983(e)(3).

This provision is necessary because the stored carbon is no longer considered permanent in the event of a reversal. Offset projects may not draw from the Forest Buffer Account to replace offset credits for intentionally reversed forest projects. Pursuant to section 95985(e), in the event of an intentional reversal, the party responsible for the forest offset project must replace any lost metric tons with other approved offset credits or allowances.

Section 95984. Ownership and Transferability of Offset Credits Issued by ARB.

Summary of Section 95984.

Section 95984 proposes that initial ownership of offset credits will be with the party identified to receive offset credits. It also purposes that offset credits may be sold, traded, or transferred except in limited circumstances, as identified in this section.

Rationale for Section 95984.

This provision is necessary for those responsible for offset projects to know who receives ownership of offset credits and which transactions are allowed.

Summary of Section 95984(a).

Subsection (a) proposes that an offset credit that has been retired or surrendered in any program may not be sold, traded, or transferred.

Rationale for Section 95984(a).

This provision is necessary to avoid double-counting of offset credits.

Summary of Section 95984(b).

Subsection (b) proposes that offset credits in the forest buffer may not be sold, traded, or transferred.

Rationale for Section 95984(b).

This provision is necessary because offset credits in the Forest Buffer Account may only be retired by ARB in the event of an unintentional reversal.

Summary of Section 95984(c).

Subsection (c) proposes that an offset credit that has been invalidated pursuant to section 95985 may not be sold, traded, or transferred.

Rationale for Section 95984(c).

This provision is necessary because once an offset credit is invalidated, ARB will cancel the offset credit in the tracking system, and it may no longer be sold, traded, or transferred.

Section 95985. Invalidation of Offset Credits.

Summary of Section 95985(a).

Subsection (a) proposes the circumstances for offset credits to be considered valid.

Rationale for Section 95985(a).

This provision is necessary so that those developing offset projects or those purchasing offset credits know which offset credits are valid.

Summary of Section 95985(a)(1).

Subsection (a)(1) proposes that offset credits are considered valid and can be used for compliance unless they have been retired or used in any voluntary or regulatory program.

Rationale for Section 95985(a)(1).

This provision is necessary to avoid double-counting of offset credits in multiple systems, and to ensure that the same offset credits cannot be bought, sold, or retired if they have already been used.

Summary of Section 95985(a)(2).

Subsection (a)(2) proposes that offset credits are considered valid and can be used for compliance unless they have been invalidated under this section.

Rationale for Section 95985(a)(2).

This provision is necessary because once an offset credit is invalidated, ARB will cancel the offset credit in the tracking system, and it may no longer be sold, traded, or transferred.

Summary of Section 95985(b).

Subsection (b) proposes the circumstances for an offset credit to be invalidated.

Rationale for Section 95985(b).

This provision is necessary so those developing offset projects or those purchasing offset credits know which offset credits are valid. In the event of fraud or malfeasance on the part of project developers or verifiers, there may be cause to invalidate offset credits after they have been issued, to protect the environmental integrity of the program.

Summary of Section 95985(b)(1).

Subsection (b)(1) proposes that an offset credit may be invalidated if a reversal occurred in a forest sequestration project.

Rationale for Section 95985(b)(1).

This provision is necessary because if a reversal occurs in a forest project, the offset credits are no longer permanent and, therefore, no longer meet the requirements of AB 32.

Summary of Section 95985(b)(2).

Subsection (b)(2) proposes that an offset credit may be invalidated if a deficiency or errors were found on behalf of the project developers or verifiers for an offset project.

Rationale for Section 95985(b)(2).

This provision is necessary so those developing offset projects or those purchasing offset credits know which offset credits are valid. In the event of fraud or malfeasance of project developers or verifiers, there may be cause to invalidate offset credits after they have been issued, to protect the environmental integrity of the program.

Summary of Section 95985(c).

Subsection (c) proposes what will happen if an offset is determined to be invalid.

Rationale for Section 95985(c).

This provision is necessary so those that have used or are currently holding an invalid offset credit know the procedures for completing the invalidation process.

Summary of Section 95985(c)(1).

Subsection (c)(1) proposes that an invalid offset will be cancelled or removed from any Compliance or Holding Accounts, as well as the Forest Buffer Account.

Rationale for Section 95985(c)(1).

This provision is necessary so those that are currently holding or attempting to comply with an invalid offset credit know the procedures for completing the invalidation process.

Summary of Section 95985(c)(2).

Subsection (c)(2) proposes that the current holder or the entity that retired the offset credit will be notified.

Rationale for Section 95985(c)(2).

This provision is necessary so that participants know if an offset they currently hold or have used is invalidated.

Summary of Section 95985(c)(3).

Subsection (c)(3) proposes that ARB will notify any linked program if any offset credits are invalidated.

Rationale for Section 95985(c)(3).

This provision is necessary so that the linked program can remove the offset credits from within their own tracking system, and they do not allow it to be used for compliance in their programs.

Summary of Section 95985(d).

Subsection (d) proposes that if an offset credit is invalidated after it has been used or retired, for any reason except a reversal in the forest sector; the party that retired or used the offset credit must replace it to ARB within 30 days. If the user or retiree is no longer in business, ARB will notify the developer of the offset project that they must replace the offset credits within 30 days. If they do not replace it within that time frame, each offset credit constitutes a violation.

Rationale for Section 95985(d).

This provision is necessary to ensure that purchasers and users of offset credits do their due diligence in seeking out high-quality offset credits. Also, ARB has clear enforcement authority over covered entities that will be using ARB offsets for compliance.

Summary of Section 95985(e).

Subsection (e) proposes that if an offset credit is invalidated due to an intentional reversal in the forest sector, the party responsible for the offset project must replace the offset credits that are reversed.

Rationale for Section 95985(e).

This provision is necessary because those with an interest in the land must ensure permanence. If the forest owner is not the one to replace the offset credits in this case, they have no incentive to uphold their obligations to ensure permanence.

Summary of Section 95985(f).

Subsection (f) proposes that if an offset credit is invalidated due to an unintentional reversal the offset credits will be retired from the Forest Buffer Account.

Rationale for Section 95985(f).

This provision is necessary because ARB's Forest Buffer Account is intended to act as an insurance mechanism that can be used to protect against unintentional reversals that may occur in forest projects.

Section 95986. Executive Officer Approval Requirements for Offset Project Registries.

Summary of Section 95986.

This section provides requirements that must be met and demonstrated by an Offset Project Registry that wishes to be approved by the Executive Officer to provide registry services for projects developed using ARB compliance offset protocols.

Rationale for Section 95986.

This section is necessary to have some basic requirements for all registries that wish to be approved as an Offset Project Registry, to ensure quality and stability in this role.

Summary of Sections 95986(a) through (c).

Subsections (a) through (c) require an Offset Project Registry to provide information about its organization, demonstration of $50 million of liability insurance, and demonstration of a rigorous internal conflict-of-interest policy and mechanisms to disclose and prevent conflicts of interest.

Rationale for Sections 95986(a) through (c).

These provisions are necessary because beyond the basic information about the management of the Offset Project Registry, it is important for the registry to carry insurance to provide a way to compensate operators if, for some reason, the registry fails to provide quality or accurate registry services and the result is a loss of potential compliance credits for the operator. This level of insurance is based on expected volumes of potential compliance offsets and potential monetary value of those offsets the registry may reasonably oversee. It is important that all members of an approved Offset Project Registry remain impartial as they provide services to operators when those services potentially will generate offsets that count in a compliance program.

Summary of Section 95986(d).

Subsection (d) limits any other roles an Offset Project Registry can fill while it is providing registry services.

Rationale for Section 95986(d).

This provision is necessary because as an Offset Project Registry, the organization must take a step back from any other roles that could lead to a perceived or actual conflict of interest in the process of generating potential compliance offsets. This provision will add integrity to the program and remove the threat of self-interest in the process by the registry.

Summary of Sections 95986(e) through (f).

Subsections (e) through (f) ensure that the requirements that must be demonstrated at the time of approval are always met during any time the approved Offset Project Registry is providing registry services under the regulation.

Rationale for Sections 95986(e) through (f).

These provisions are necessary for the stability of the program. It is imperative that once an Offset Project Registry demonstrates that it meets the regulation's standards, it maintains those standards from that point forward while providing registry services.

Summary for Section 95986(g).

Subsection (g) requires attestations statements to hold the Offset Project Registry accountable to ARB for information that it submits to ARB and acknowledgement that the registry is voluntarily choosing to become part of a regulatory program, and as such is subject to all enforcement mechanisms of the program and that any information provided to ARB will be accurate and complete.

Rationale for Section 95986(g).

This provision is necessary because all parties that are part of the compliance program must be held accountable for their actions, registry services, and information submittals for the integrity of the program.

Summary for Section 95986(h).

Subsection (h) requires management staff for an OPR to take ARB training on the ARB program.

Rationale for Section 95986(h).

This provision is necessary because it is important to the integrity of the compliance program that any approved registry understand the requirements of the regulatory program and be able to communicate those requirements to operators that use their registry services.

Summary of Section 95986(i).

Subsection (i) lays out the process for actual approval for an Offset Project Registry once all of the requirements have been met. The approval is valid for five years and may be renewed if the registry has not been subject to enforcement and still meets all of the requirements.

Rationale for Section 95986(i).

This provision is necessary to limit the approval to five years, which allows ARB to periodically ensure that all requirements for registry approval are met and ensure the quality of registries by not allowing any registries that have been subject to enforcement to be eligible to be renewed for approval by ARB.

Summary of Section 95986(j).

Subsection (j) provides a process for modifying, suspending, or revoking the approval of an Offset Project Registry for good cause. It also stipulates that the OPR must not provide registry services during an approval revocation and must notify all operators of its status.

Rationale for Section 95986(j).

This provision is necessary so that the registry is afforded due process under California statute before ARB revokes its approval. Operators must be given notice by the registry if it can no longer provide registry services, so they may transfer to another registry or to ARB.

Section 95987. Offset Project Registry Requirements.

Summary of Section 95987.

This section provides the registry services an approved Offset Project Registry must provide for operators and information it must provide to ARB under the regulation.

Rationale for Section 95987.

The regulation provides standardized services so that every registry will provide the same level of service and information related to the generation of potential

offset credits. The information requirements will be used by ARB as oversight of its compliance offset program and approved OPRs.

Summary of Section 95987(a).

Subsection (a) stipulates that only ARB Board-approved protocols can be used to generate offsets for potential ARB issuance.

Rationale for Section 95987(a).

This provision is necessary because AB 32 is clear that the Board must approve all offset protocols.

Summary for Section 95987(b).

Subsection (b) stipulates what information related to project listing and reporting the registry has to make available to the public in a timely manner.

Rationale of Section 95987(b).

This provision ensures that all registries provide information in a transparent manner for each offset project with the potential for ARB to issue credits.

Summary of Section 95987(c).

Subsection (c) requires the OPR to use the conflict-of-interest requirements in the regulation to make a determination about the level of conflict between a verification body and the Offset Project Operator. This section also requires the OPR to ensure the information on the conflict-of-interest form is complete.

Rationale for Section 95987(c).

This provision is necessary to ensure that all OPRs apply the regulatory conflict-of-interest requirements and review each form for completeness. This ensures program integrity and consistency.

Summary of Section 95987(d).

Subsection (d) allows an OPR to provide guidance on questions or issues related to compliance offset protocols if there is no clear direction on that issue. The registry must inform ARB of any guidance it provides on a Compliance Offset Protocol.

Rationale for Section 95987(d).

This provision is necessary because there may be a circumstance where an operator or verifier may not know how to apply the requirements of a Compliance Offset Protocol, and this allows the OPR to provide such guidance and inform ARB in a timely manner. ARB can track such inquiries and decide if such issues

need to be addressed in an update to the protocol, of it the registry has provided guidance that is in conflict of the regulatory offset program and the operator should be notified quickly to avoid losing any potential offset credits.

Summary of Section 95987(e).

Subsection (e) requires approved registries to have in place an audit program of their projects and verifications that includes specific tasks that must be conducted in the audits, and they must provide that information to ARB.

Rationale for Section 95987(e).

This provision is necessary because it is important for all registries to have some oversight of their own program as they provide registry services, to ensure integrity and quality at each step. This information will also be provided to ARB to inform ARB staff, to support their efforts to oversee the regulatory verification program.

Summary of Section 95987(f).

Subsection (f) requires that an OPR provide all information related to an offset project, if requested by ARB.

Rationale for Section 95987(f).

This provision is necessary because ARB may need such information to audit a project or as part of its registry audit, conducted as part of its compliance offset program oversight.

Summary of Section 95987(g).

Subsection (g) requires an OPR to make all of its information and staff available to ARB for audit.

Rationale for Section 95987(g).

This provision is necessary because the OPRs are participating in a compliance program. ARB must have complete authority to oversee all facets of the program, including the OPRs. This access enables ARB to gather information or talk to staff as part of the OPR oversight.

Summary of Section 95987(h).

Subsection (h) requires the OPR to retire any credits in its system that will be issued offset credit in ARB’s compliance offset program.

Rationale for Section 95987(h).

This provision is necessary because an offset credit may only be used once. This requirement ensures that someone is not able to have an offset credit double-counted in any program once ARB decides to issue an offset credit for use in its regulatory program.

Summary of Section 95987(i).

Subsection (i) requires an OPR to provide annual information to ARB related to any offset projects that are at least listed for the previous year using a Compliance Offset Protocol.

Rationale for Section 95987(i).

This provision is necessary so that ARB can monitor the performance of its offset program. It also allows ARB to understand and respond to any unintended or unexpected issues that may occur during the implementation of the compliance offset program.

Section 95988. Record Retention Requirements for Offset Project Registries.

Summary of Section 95988.

This section requires registries to retain specific documentation for at least the project lifetime plus ten years for projects that are listed at an OPR and eventually receive ARB-issued credit.

Rationale for Section 95988.

This provision is necessary because as with all participants in the cap-and-trade program, the registry must maintain a rigorous record retention program to support any regulatory inquiries about a project or verification that was conducted through the registry.

Subarticle 14. Recognition of Compliance Instruments from Other Programs.

Section 95990. Recognition of Offset Credits for Early Action.

Summary of Section 95990(a).

Subsection (a) proposes that ARB recognizes early action offset credits issued by third-party programs approved pursuant to this section, if the offset credits meet the requirements of this section.

Rationale for Section 95990(a).

This section is necessary to establish that early action offset credits must meet specific criteria. This ensures that early action offset credits are subjected to uniform standards.

Summary of Section 95990(b), Criteria for Approval of Offset Credits Issued by Third Parties.

Subsection (b) proposes the criteria that offsets issued by third-party programs must meet to be recognized for compliance.

Rationale for Section 95990(b).

This section is necessary to ensure that all early action offset credits issued by third-party programs meet the same standards.

Summary of Section 95990(b)(1).

Subsection (b)(1) proposes that the GHG reductions or GHG removal enhancements credited as offsets by third-party programs must occur between January 1, 2005, and December 31, 2014.

Rationale for Section 95990(b)(1).

This provision is necessary so those using offsets for compliance know which early action offset credits are eligible to be used for compliance. The date January 1, 2005, reflects the date that offset projects began verifying their GHG reductions and GHG removal enhancements, based on the protocols approved in this section for recognizing early action. The date December 31, 2014, reflects the date that the first compliance period ends. Staff proposes this cut-off date to ensure that offset projects switch to a Board-approved protocol, while still allowing a supply of offset credits to come in during the first compliance period.

Summary of Section 95990(b)(2).

Subsection (b)(2) proposes that offsets issued by third-party programs must be verified according to the requirements in section 95990(f).

Rationale for Section 95990(b)(2).

This provision is necessary to ensure that early action offset credits issued by third-party programs meet the same requirements for verification as offset credits issued by ARB.

Summary of Section 95990(b)(3).

Subsection (b)(3) proposes that qualified early action offset credits must originate from offset projects that commence prior to January 1, 2012.

Rationale for Section 95990(b)(3).

This provision is necessary so those using offsets for compliance know which early action offset credits are eligible to be used for compliance. This also ensures that once ARB's compliance offset program is implemented in 2012, that offset projects are using ARB Board-approved protocols, as opposed to those approved in this section for early action purposes.

Summary of Section 95990(b)(4).

Subsection (b)(4) proposes that qualified early action offset credits must originate from offset projects that are located in the United States.

Rationale for Section 95990(b)(4).

This provision is necessary so those using offsets for compliance know which early action offset credits are eligible to be used for compliance. Up to this point, staff has only evaluated protocols based on applicability in the United States.

Summary of Section 95990(b)(5)(A) through (b)(5)(D).

Subsections (b)(5)(A) through (b)(5)(D) propose which offset protocols are eligible to be used for the recognition of early action offset credits.

Rationale for Section 95990(b)(5)(A) through (b)(5)(D).

These provisions are necessary so that those using offsets for compliance know which early action offset credits are eligible to be used for compliance. Staff chooses these particular protocols because they are the same types of offset projects that staff is proposing that the Board adopt as ARB compliance offset protocols. Staff has knowledge of these project types and has also based the development of its proposed compliance protocols on these early versions.

Summary of Section 95990(b)(5)(E).

Subsection (b)(5)(E) proposes that offset projects using Climate Action Reserve Forestry Protocol versions 3.0 through 3.2 meet specific requirements for permanence, including: a conservation easement or contribution to a forest buffer pool.

Rationale for Section 95990(b)(5)(E).

This provision is necessary to ensure that early action offset credits meet the same requirements for permanence as offset credits issued by ARB.

Summary of Section 95990(c), Approval of Third-Party Offset Programs for Purposes of Accepting Offset Credits for Early Action.

Subsection (c) proposes the requirements that a third-party offset program must meet for offset credits it issues to be used for early action.

Rationale for Section 95990(c).

This provision is necessary to ensure that all third-party offset programs meet the same requirements for offset credits as those that they issue to be used for early action. The third-party offset program must meet the requirements of this section or have an Executive Order issued pursuant to section 95986(d).

Summary of Section 95990(c)(1).

Subsection (c)(1) proposes that a third-party offset program must carry at least two million dollars of liability insurance.

Rationale for Section 95990(c)(1).

This provision is necessary to ensure that the third-party offset program has insurance to provide a way for compensation to project developers if, for some reason, the third-party program fails to provide quality or accurate services and the result is a loss of potential compliance credits for the project developer. The amount of insurance differs for these program in comparison to those for OPRs because the volume of early action offset credits is significantly lower than that which can be issued by an OPR under a Compliance Offset Protocol.

Summary of Section 95990(c)(2).

Subsection (c)(2) proposes that the third-party offset program has specific registration and tracking abilities for offset credits, as well as entities who are registered in its system.

Rationale for Section 95990(c)(2).

This provision is necessary to ensure that the third-party offset program can locate an offset credit or its owner at any given time within its registry system.

Summary of Section 95990(c)(3).

Subsection (c)(3) proposes that the third-party offset program's primary business be operating a voluntary or regulatory offset program.

Rationale for Section 95990(c)(3).

This provision is necessary to prevent conflict of interest.

Summary of Section 95990(c)(4).

Subsection (c)(4) proposes that the third-party offset program must submit to ARB any documentation that an offset project using a protocol approved for early action submits to the third-party program.

Rationale for Section 95990(c)(4).

This provision is necessary so that ARB has all information regarding offset projects from which offset credits are used for compliance under the program.

Summary of Section 95990(c)(5).

Subsection (c)(5) proposes that the third-party offset program must retire offset credits in its registry system before ARB can register the offset credits in its tracking system and allow them to be used for compliance.

Rationale for Section 95990(c)(5).

This provision is necessary to avoid double-counting of offset credits in multiple systems, and to ensure that the same offset credits cannot be bought, sold, or retired if they have already been used.

Summary of Section 95990(c)(6).

Subsection (c)(6) proposes that a representative of the third-party offset program must attest to ARB that they meet the requirements of this section, and that everything they submit is truthful and accurate.

Rationale for Section 95990(c)(6).

This provision is necessary to ensure that the third-party offset program follows the requirements of this regulation and that ARB can take enforcement against them if necessary.

Summary of Section 95990(d), Registration of Offset Credits Issued by Third Parties.

Subsection (d) proposes that any offset credits issued by a third-party offset program must be retired in its registry system before ARB can register the offset credits in its tracking system.

Rationale for Section 95990(d).

This provision is necessary to avoid double-counting of offset credits in multiple systems, and to ensure that the same offset credits cannot be bought, sold, or retired if they have already been used.

Summary of Section 95990(e), Ineligible Offset Credits Issued by Third Parties

Subsection (e) proposes that if an offset credit issued by a third-party offset program has been cancelled, used or, retired, it is no longer eligible to be recognized by ARB.

Rationale for Section 95990(e).

An offset credit may only be used once. This requirement ensures that someone is not able to have an offset credit double-counted in any program once ARB decides to recognize an offset credit for use in its regulatory program.

Summary of Section 95990(f), Regulatory Verification of Offset Credits for Early Action.

Subsection (f) proposes that all offset credits recognized from a third-party offset program must be verified according to requirements in this subsection.

Rationale for Section 95990(f).

AB 32 requires all offset credits used for compliance purposes to be subject to regulatory verification.

Summary of Section 95990(f)(1).

Subsection (f)(1) proposes that an offset credit must be verified by an ARB-accredited third-party verifier.

Rationale for Section 95990(f)(1).

All verifiers and verification bodies providing Offset Verification Services under the compliance offset program will be held to the same rigorous standards for accreditation. These standards are based on existing accreditation requirements in other voluntary and regulatory GHG reporting and offset programs. The requirements are also consistent with international best practices for verification body accreditation.

Summary of Section 95990(f)(2).

Subsection (f)(2) proposes that verification bodies be subject to conflict-of-interest standards, and that the conflict of interest be assessed against those

responsible for offset projects, if the offset credits from those programs are recognized by ARB.

Rationale for Section 95990(f)(2).

All verification bodies and verifiers are subject to regulatory conflict-of-interest requirements to ensure that there is an unbiased review of each Offset Project Data Report. This provision ensures that any verification bodies with previous relationships with any party with a financial interest in the offset credits are not allowed to verify those offset credits.

Summary of Section 95990(f)(3).

Subsection (f)(3) proposes that verification bodies must conduct all the verification services as specified in section 95977 for offset projects, if the offset credits from those program are recognized by ARB. The verification services are provided for the project as a whole, and not separately for each vintage year of credits.

Rationale for Section 95990(f)(3).

This provision is necessary so that all offset credits that can be used for compliance purposes meet the same requirements for verification. This provision helps to provide consistency among offset credits. The existing offset credits from a program recognized by ARB may be held by several parties who do not have access to the underlying data or other project information to support regulatory verification of the offset credits. This section applies the regulatory verification requirements across all vintage years for a project, so that any parties that hold existing credits may contract with a single verification body together, and the project information to support verification only has to be gathered once.

Section 95991. Sector-Based Offset Credits.

Summary of Section 95991.

This section establishes the requirements that offsets originating from developing countries or from subnational jurisdictions within those developing countries, with the exception of those identified in Article 13, must come through a sector-based crediting program that has been approved by the Board.

Rationale for Section 95991.

This provision is necessary because it defines the most basic terms for allowing international offset credits into California's cap-and-trade program and the specific developing countries generating offset credits.

Section 95992. Procedures for Approval of Sector-Based Crediting Programs.

Summary of Section 95992.

This section establishes that each sector-based crediting program must be approved by the Board after public notice and the opportunity for the public to submit comments in accordance with the Administrative Procedures Act, Government Code section 11340 et seq. The offset credits generated from these programs can be used to generate compliance offset credits accepted by ARB.

Rationale for Section 95992.

This provision ensures the integrity of the program by requiring that each program undergo a staff analysis and full public review prior to Board approval.

Section 95993. Sources for Sector-Based Offset Credits.

Summary of Section 95993(a).

Subsection (a) lists a specific type of sector-based offset credit for consideration in the California cap-and-trade program, known as Reducing Emissions from Deforestation and Forest Degradation (REDD).

Rationale for Section 95993(a).

This provision is necessary to propose that forest-sector offset credit programs be eligible for Board review and approval for recognition in the California cap-and-trade program.

Summary of Section 95993(b).

Subsection (b) is reserved for additional sources of sector-based credits for consideration in the California cap-and-trade program.

Rationale for Section 95993(b).

This subsection is reserved for additional sources of sector-based credits for consideration in the California cap-and-trade program, as other programs become available.

Section 95994. Requirements for Sector-Based Offset Crediting Programs.

Summary of Section 95994(a).

Subsection (a) establishes the general requirements that all sector-based offset crediting programs approved by the Board may be required to meet.

Rationale for Section 95994(a).

This provision is necessary to inform program developers of the minimum criteria that programs may be required to meet for Board consideration and approval; it is also necessary to ensure consistency by setting minimum standards by which each program will be assessed.

Summary of Section 95994(a)(1).

Subsection (a)(1) proposes that the sector-based offset crediting program include a plan for how the jurisdiction will reduce emissions from the sector in order to be considered for Board approval.

Rationale for Section 95994(a)(1).

This provision is necessary because it sets forth what could be incorporated in a jurisdiction's sector-level plan to inform ARB and the Board as to the jurisdiction's approach toward reducing emissions. This document will be used by staff to assess a proposed sector-based offset crediting program as part of Board approval.

Summary of Section 95994(a)(2).

Subsection (a)(2) establishes that a sector-based crediting program has a system in place for monitoring, inventory, reporting, and verification of GHG emissions for that sector, as well as enforcement capability over activities related to the program.

Rationale for Section 95994(a)(2).

This provision ensures integrity to the program because it requires activities to determine whether the credits meet the quality criteria under AB 32.

Summary of Section 95994(a)(3).

Subsection (a)(3) establishes the offset criteria that all sector-based offset credits issued by a sector-based program and approved by the Board be real, additional, quantifiable, permanent, verifiable, and enforceable, as required by AB 32.

Rationale for Section 95994(a)(3).

This provision is necessary because AB 32 requires that all offset credits be real, additional, quantifiable, permanent, verifiable, and enforceable, and covered entities and program developers of sector-based crediting programs need to know the basic requirements.

Summary of Section 95994(a)(4).

Subsection (a)(4) establishes that a Board-approved sector-based offset crediting program has a transparent system in place to evaluate the overall performance of the program.

Rationale for Section 95994(a)(4).

This provision is necessary so that ARB and those participating in the program know how the program is operating relative to the sector's reference level emissions, and whether the program is appropriately issuing offset credits based on reductions that occur after the program meets its crediting baseline.

Summary of Section 95994(a)(5).

Subsection (a)(5) proposes that a Board-approved sector-based offset crediting program has established public participation and participatory management mechanisms that provide for the participation and consultation of the public in the relevant jurisdiction during the program design process.

Rationale for Section 95994(a)(5).

As with programs designed and implemented by ARB directly, other programs, such as sector-based crediting programs, should allow for public involvement and consultation in the planning process in order to be eligible for ARB Board approval.

Summary of Section 95994(a)(6)(A).

Subsection (a)(6)(A) requires that for a sector-based crediting program to use a nested approach, emissions-reduction projects must follow a methodology to ensure the inventory, quantification, monitoring, verification, enforcement, and accounting for all project-level activities.

Rationale for Section 95994(a)(6)(A).

This provision is necessary because it provides guidance to jurisdictions and project developers pursuing a nested approach to sector-based crediting that individual projects follow an offset project methodology that is consistent with the requirements of AB 32.

Summary of Section 95994(a)(6)(B).

Subsection (a)(6)(B) establishes that when a sector-based crediting program uses a nested crediting pathway, emission reductions at the project level can be credited if the program has established a clear accounting system, whereby project-level emissions reductions can be properly accounted for and reconciled with emission reductions that occur at the jurisdictional level.

Rationale for Section 95994(a)(6)(B).

This provision is necessary because it ensures that all GHG sources and sinks are accounted for at both the project level and at the sectoral level, which substantially reduces the risk that credits are unintentionally counted twice and therefore violate AB 32's requirement that emission reductions from offsets must be real and additional.

Summary of Section 95994(b).

Subsection (b) establishes that pursuant to Section 95996, sector-based crediting programs may have requirements that are specific to that sector and in addition to the general requirements set out in Section 95994(a).

Rationale for Section 95994(b).

This provision is necessary because it reserves the ability of the Board to establish other requirements for sector-based crediting programs that are unique to the specific sector generating offset credits in a jurisdiction.

Section 95995. Quantitative Usage Limit.

Summary of Section 95995.

Section 95995 references section 95821(d), which identifies that sector-based credits recognized by the Board pursuant to 95991–95997 may be used by a covered entity to meet its compliance obligation. It also references section 95854, which further specifies that covered entities may submit sector-based credits of up to 25 percent, 25 percent, and 50 percent of their total offset quantitative limit during the first, second, and third compliance periods, respectively.

Rationale for Section 95995.

This section is necessary because it establishes which offset credits a covered entity may use from sector-based crediting programs and specifies to covered entities that a limited supply of international offset credits from Board-approved sector-based crediting programs may be used toward a compliance obligation.

Section 95996. Reserved for Sector-Specific Requirements.

Summary of Section 95996.

Section 95996 is reserved for sector-specific requirements for specific sector-based crediting programs.

Rationale for Section 95996.

This section is reserved for sector-specific requirements for specific sector-based crediting programs.

Section 95997. Reserved for Approved Sector-Based Crediting Programs.

Summary of Section 95997.

Section 95997 is reserved for approved sector-based crediting programs.

Rationale for of Section 95997.

This section is reserved for approved sector-based crediting programs.

Subarticle 15. Enforcement and Penalties.

Section 96010. Jurisdiction.

Summary of Section 96010(a) through (d).

Subsections (a) through (d) contain a list of actions that will establish a person's consent to be subject to the jurisdiction of the State of California. These include registration with ARB; the purchase or holding of a compliance instrument issued by ARB; receipt of compensation of any kind from any transfer of compliance instruments issued by ARB; and verification of an offset credit to be issued by ARB.

Rationale for Section 96010(a) through (d).

These provisions are necessary because not all participants in the California cap-and-trade program will be located in California. ARB needs clear jurisdiction over all participants in order to enforce these regulations.

Section 96011. Authority to Suspend, Revoke, or Modify.

Summary of Section 96011(a).

Subsection (a) authorizes the Executive Officer to suspend, revoke, or place restrictions on the Holding Account of a voluntarily associated entity.

Rationale for Section 96011(a).

This provision is needed because in addition to conventional penalties, ARB may need to limit the ability of a registered entity to fully participate in the market as a response to violations by the entity. For voluntarily associated entities, ARB staff proposes that the Executive Officer be able to suspend, revoke, or place transaction restrictions on the Holding Accounts of violators.

Summary of Section 96011(b)

Subsection (b) authorizes the Executive Officer to place restrictions on the Holding Account of a covered entity or opt-in covered entity.

Rationale for Section 96011(b).

This provision is needed because the Executive Officer may need to supplement conventional penalties with restrictions on the accounts of entities that violate rules in order to prevent further violations.

Summary of Section 96011(c).

Subsection (c) authorizes the Executive Officer to suspend or revoke the registration of an entity registered pursuant to 95814(b) as an Other Registered participant.

Rationale for Section 96011(c).

This provision is needed to allow the Executive Officer to terminate the participation of some registered entities to prevent further violations.

Summary of Section 96011(d).

Subsection (d) authorizes the Executive Officer to suspend, revoke, or modify an existing Executive Order in response to violations by an entity.

Rationale for Section 96011(d).

This provision is necessary if the Executive Officer believes that conventional penalties may not deter further violations.

Section 96012. Injunctions.

Summary of Section 96012.

Section 96012 cites existing authority for ARB to enjoin violations of this article.

Rationale for Section 96012.

This section is needed to clarify that ARB has authority in existing Health and Safety Code provisions to enjoin violations of its regulations.

Section 96013. Penalties.

Summary of Section 96013.

Section 96013 cites existing authority for ARB to set penalties for violations of its regulations.

Rationale for Section 96013.

This section is needed to clarify that ARB has authority in existing Health and Safety Code provisions to set penalties for violations of its regulations.

Section 96014. Violations.

Summary of Section 96014 (a) through (c).

Subsections (a) through (c) establish a separate violation for each required compliance instrument that has not been surrendered; for each day or portion of a day that each required compliance instrument has not been surrendered; and for each day or portion of a day in which any other violation of the regulations occurs.

Rationale for Section 96014 (a) through (c).

These provisions are necessary so that ARB can set penalties based on the magnitude or duration of the violations of compliance instrument surrender provisions. These surrender provisions are unique to cap-and-trade programs.

Subarticle 16. Other Provisions.

Section 96020. Severability, Effect of Judicial Order.

Summary of Section 96020.

Section 96020 states that that if one provision of the regulations is declared invalid by a court or other authority, the remaining provisions will remain in full force and effect.

Rationale for Section 96020.

This section is necessary because it ensures that if ARB has enacted a provision in the proposed regulatory article that is illegal or unconstitutional, the remaining regulatory provisions remain intact.

Section 96021. Confidentiality.

Summary of Section 96021(a).

Subsection (a) describes that all emissions data submitted to ARB is public information and may not be designated as confidential per reporter's discretion.

Rationale for Section 96021(a).

This provision is necessary to implement the requirements set forth in Health and Safety Code sections 39600 and 39601.

Summary of Section 96021(b).

Subsection (b) describes the confidentiality requirements for all reports and information provided by a covered entity, opt-in cover entity, voluntarily associated entity, and other registered participants to the ARB.

Rationale for Section 96021(b).

This provision is necessary to ensure that the regulated entities understand how reports and information are managed, to ensure compliance with title 17 of the California Code of Regulations, sections 91000 to 91022.

Section 96022. Reserved Provisions.

Summary of Section 96022.

Section 96022 is reserved for future provisions.

Rationale for Section 96022.

Section 96022 is reserved for future provisions.

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APPENDICIES

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