Proposed Environmental Analysis Workplan for the Renewable Electricity Standard

I. Introduction

The Air Resources Board (ARB/Board) staff will analyze the environmental and public health impacts of the proposed rulemaking for the Renewable Electricity Standard (RES). The analysis will be done in cooperation with the California Energy Commission (CEC), the California Public Utilities Commission (CPUC), and the California Independent System Operator (CAISO). The analysis will focus on the quantification of air quality-related public health benefits that would result from implementation of the RES. Additionally, it will consider the potential air impacts from augmenting intermittent renewable energy with fossil-fuel powered generation.

The California Environmental Quality Act (CEQA) and Board policy require an analysis to determine the potential environmental impacts of proposed regulations. The ARB will hire a contractor to assist with the development of a CEQA equivalent analysis. The analysis will evaluate air, land, water, biology, cultural and visual impacts, and will include an analysis of any environmental justice impacts that may occur.

ARB's program for adopting regulations has been certified by the Secretary of Resources, pursuant to Public Resources Code section 21080.5. Consequently, the CEQA requirements will be included in the Initial Statement of Reasons (ISOR) for this regulation. In the ISOR, the ARB must include a functionally equivalent document, rather than adhering to the format described in CEQA of an Initial Study, a Negative Declaration, and an Environmental Impact Report. Staff will consider all comments made throughout the rule development process. In addition, 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.

In conducting the environmental impacts analysis, staff will address the criteria listed in section 38562 of the Global Warming Solutions Act of 2006 (AB 32 or Act).[1] Since the RES will allow the use of market-mechanisms, staff will also address the criteria listed in section 38570 of the Act.[2]

[1]Section 38562 states that, to the extent feasible, any adopted regulations shall: be equitable, ensure activities do not disproportionately impact low-income communities, complement and not interfere with federal and state ambient air quality or toxic air contaminant emission standards, and consider overall societal benefits.

[2]These criteria include, to the extent feasible, 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; (2) design any market-based compliance mechanism to prevent any increase in the emissions of toxic air contaminants or

The environmental impacts analysis will be based on the results of the technical analysis of plausible compliance scenarios. The ARB contractor will determine the environmental impacts by comparing the results of the plausible compliance scenarios to the 20% Renewable Portfolio Standard (RPS) scenario described below. In addition, the contractor will determine the environmental impacts that would occur under the plausible compliance scenarios if the renewable generation in California is maintained at the level occurring in 2010. This document describes in general terms our approaches to conducting the work outlined above.

II. 20% RPS Scenario

The 20% RPS scenario will include California's likely renewable energy mix in 2020 based on current state law and existing RPS contracts. The results of the plausible compliance scenarios will be compared to the 20% RPS scenario for the RES regulation. The analysis will focus on a 2010 to 2020 time period.

III. Air Quality Impacts

A. Greenhouse Gas Benefits

Staff will summarize the estimated GHG benefits in terms of million metric tons of CO_2 equivalent reductions by 2020, based on the analysis of plausible compliance scenarios. Staff, in consultation with the energy agencies, will develop several plausible compliance scenarios for the "regulated parties" (electrical corporations, electric service providers, community choice aggregators, electrical cooperatives, and local publicly owned electric utilities) to achieve a 33 percent renewable target by 2020. The technical analysis will assign potential greenhouse gas reduction attributes, relative to the displacement of fossil-based generation, to the amount of electricity generated eligible renewable resources for the RES regulation. The assignment of GHG attributes would be conducted on a Western Electricity Coordinating Council (WECC)-wide or resource average basis and not on a generator or location basis. The spreadsheet-based GHG calculator developed by Energy and Environmental Economics (E3) will be used to evaluate alternative resource scenarios that can meet GHG emission levels.

B. California Air Quality Impacts

Staff will use the results of the ARB contract and data developed in the technical analysis to provide a summary of the various compliance scenarios on air quality—both criteria and toxic air pollutants. The ARB contractor will consider

---

criteria air pollutants; and (3) maximize additional environmental and economic benefits for California, as appropriate.

the CEQA equivalent analyses prepared by the CEC on specific RPS projects and analyses from California Department of Fish and Game (CDF&G) and local government agencies in developing the air quality attributes for renewable resources. These attributes will be used to quantify air quality impacts on a regional and statewide basis.

1. Emissions from New Renewable Generation Facilities – To achieve the 33 percent renewable goal by 2020, new renewable generation facilities may be built in California or elsewhere. Staff will estimate criteria and toxic emissions from new renewable generation facilities that are located in or bordering California. The emission estimates will be based on permitting requirements, including best available control technology and offsets, for new facilities in California. Staff will build on the Renewable Energy Transmission Initiative (RETI) and Desert Renewable Energy Conservation Plan (DRECP) reports to identify areas in-state with the greatest renewable resource potential.

2. Emissions from Fossil Fuel Generation – Staff will estimate the emissions from fossil fuel generation (including peaker power plants) that may be required to augment intermittent wind and solar power.

3. Distributed Generation – Staff will quantify the air quality benefits from distributed generation such as rooftop photovoltaic.

C. Public Health Risk and Cumulative Emissions Impacts

Staff, with input from the contractor, will summarize the potential public health risks and overall criteria and toxic impacts that may occur within California due to the RES. This analysis will be based on the emissions estimates prepared above. In conducting this analysis, staff will work with the contractor to perform the following tasks to the extent data are available.

1. *Location of Renewable Power Generating Facilities:*
   Identify potential locations of renewable power generating facilities in California (e.g., Mojave Desert). Based on these locations, staff will consider if any low-income communities or minority groups will be most impacted. Note that this analysis does not represent the actual locations or that these facilities would be built; these can only be determined through project-specific land use and permitting decisions. Thus, the analysis is intended only to provide an indication of possible impacts.

2. *Summarize Regional and Statewide Criteria Pollutant and Toxics Impacts on Public Health Risks:*
   Based on the plausible compliance scenarios, staff will estimate the regional and statewide emissions impacts of criteria pollutants and toxics on public health risks.

3. *Conduct Cancer and Non-Cancer Risk Assessment for Individual and Multiple Projects:*
   Staff will estimate the potential cancer and non-cancer health risks for individual projects based on available data on emissions. Staff will also estimate the potential cancer and non-cancer health risks for multiple projects located in close proximity to one another to determine the cumulative health impacts.

D. Environmental Justice

California law requires state agencies to consider environmental justice (EJ) in their rulemaking if such action may have disproportionate impacts on low-income or minority communities. As a result, staff will evaluate the plausible compliance scenarios to ensure that the associated public health risks do not adversely impact these communities.

In considering renewable resource development impacts on EJ, staff will use California Environmental Protection Agency's documents as guidance: *Intra-Agency Environmental Justice Strategy* (2004) and *Environmental Justice Action Plan* (2004). The first document provides an overarching vision to help address the many complex issues to achieve EJ and the latter document helps identify challenges and opportunities, explore practical application strategies, and develop recommendations to address EJ issues.

In addition, staff will consider the impacts of REC-only transactions on these representative communities.

IV. Other Environmental Impacts

Staff will work with the contractor to evaluate the potential for other impacts from new renewable generation facilities in the State, such as land use, water, biology, cultural, and visual.

In addition to new renewable generation facilities, new transmission lines will be required to bring electricity from producing zones in remote areas to end users. Distribution lines may also need to be upgraded. In some locations, existing transmission lines connected to fossil fuel power plants may need to be upgraded to maintain system reliability while supporting power supplies from intermittent renewable resources such as wind and solar. The ARB contractor

will consider the RETI and other reports to identify potential transmission lines, environmental impacts, and mitigation measures for the installation of new transmission lines in the State.

V. Recent and Planned Studies of the Environmental Impact of Renewable Generation Development and Associated Transmission

In developing its environmental review, staff will consider relevant work recently performed or now underway. While none of these efforts were designed to be compliant with or equivalent to CEQA review, they provide value information that may be relevant and useful.

RETI

Phase 1 of RETI included a high-level assessment of the environmental concerns associated with renewable generation. This assessment was prepared by the environmental working sub-group of RETI's Stakeholder Steering Committee (SSC), in consultation with the SSC and dozens of concerned individuals and companies. Specifically, the group:

1. Identified "black" and "yellow" areas in California that were treated as off limits and restricted, respectively, for purposes of identifying candidate renewable generation projects for inclusion in Competitive Renewable Energy Zones (CREZ), and
2. Developed a methodology for rating the relative environmental concern associated with development in each CREZ, according to:
    a. affected area (energy development footprint)
    b. new transmission Right of Way (ROW)
    c. sensitive areas inside each CREZ
    d. sensitive areas near CREZ boundaries
    e. special status species impacted by each CREZ
    f. wildlife corridors impacted by each CREZ
    g. bird habitat impacted by each CREZ
    h. amount of degraded land in each CREZ

In Phase 2, RETI developed a statewide conceptual transmission plan that provided some level of transmission access to all of the CREZ identified in Phase 1. Again, the RETI SSC prepared a high-level assessment of environmental impacts – this time including those associated with transmission development – for purposes of comparing development options. The RETI SSC convened panels of environmental experts, one for Northern California and one for Southern California, to rate each transmission segment in the RETI conceptual plan according to its relative environmental concern. As described in the Phase 2A Report[3], *"Using a lengthy checklist of potential issues, the experts assigned*

[3] http://www.energy.ca.gov/2009publications/RETI-1000-2009-001/RETI-1000-2009-001-F-REV2.PDF, page 3-86.

overall value of 1, 2, or 3 to indicate low, medium or high levels of concern respectively:

1. *Low levels of concern and/or potential impacts relatively easy to mitigate;*
2. *Medium levels of concern and/or some difficulty expected with mitigation;*
3. *High levels of concern and/or difficulty identifying adequate mitigation."*

To obtain an overall environmental score for each segment, the subjective rating score produced by the expert panel was multiplied by the objective measures of ROW characteristics, line length and construction category", as described in more detail in the Phase 2 report (see pp. 3-85 - 3-89, and Appendix D).

DRECP

Executive Order S-14-08 and associated Memoranda of Understanding by and among several state and federal agencies (CEC, CDF&G, U.S. Fish and Wildlife Service, Bureau of Land Management (BLM)) establishes a 33% RPS by 2020 target for California and directs the agencies to take all appropriate actions to streamline and expedite the permitting processes for renewable energy projects while conserving endangered species and natural communities at the ecosystem scale. The Executive Order directs the Renewable Energy Action Team (REAT) to achieve these twin goals in the Mojave and Colorado Desert regions through the DRECP.

Work is underway in several areas to define the elements of the DRECP to ensure public and local agency participation, coordination with RETI and the BLM/U.S. Department of Energy (DOE) Solar Programmatic Environmental Impact Statement (PEIS) work in progress. Work includes: (1) finalizing the DRECP Planning Agreement; (2) developing the Draft DRECP Conservation Strategy by December 2009; (3) developing and gathering public stakeholder and independent scientific input; (4) publishing a Best Management Practices manual for the development of renewable energy projects by December 2009; (5) developing the Draft DRECP by December 2010; and (6) completing the final Draft DRECP environmental review and approval by June 2012.

The Draft Conservation Strategy will include preliminary identification of the most appropriate locations within the DRECP area to be evaluated for development of utility-scale renewable energy projects and related transmission facilities, taking into account potential impacts to threatened and endangered species and sensitive natural communities. This initial assessment of DRECP development and conservation areas may be reevaluated based on updated RETI results and RPS implementation study results by the CPUC and CAISO.

The Best Management Practices and Guidance Manual for Desert Renewable Energy Projects will provide recommendations to renewable energy developers and to federal, state, local and tribal governments for protecting environmental and cultural resources and human health and safety and for improving the efficiency of the regulatory process in California.

Solar PEIS

Pursuant to the Energy Policy Act of 2005, the BLM/DOE are preparing a PEIS for the development of large-scale, grid-connected solar electric facilities in Arizona, California, Colorado, Nevada, New Mexico, and Utah. The federal agencies are evaluating whether to establish environmental policies and mitigation strategies for all future solar energy facility development of BLM-Managed lands and for all U.S. funded solar facilities. The BLM has identified four solar energy areas for study in California.

The Solar PEIS will not eliminate the need for site-specific environmental review but will provide the basis for expedited environmental review in designated solar energy zones. Site specific reviews will determine whether a proposed project's plans follow the best management practices and mitigation strategies prescribed in the Solar PEIS. The Solar PEIS will also consider whether the new transmission corridors need to be designated on BLM-managed land to interconnect solar electric facilities to the grid.

Similar work to aid geothermal and wind energy development and western energy corridor designation has already been completed. Additional studies are listed below.

Wind Programmatic Environmental Impact Statement (BLM, U.S. Forest Service)

Geothermal Programmatic Environmental Impact Statement (BLM)

West-wide Energy Corridor Programmatic Environmental Impact Statement (BLM, U.S. Forest Service)