

AB 118: Air Quality Improvement Program (AQIP)

FY 2012-13 Funding Plan Staff Discussion Document

Public Workshop

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Section 1: Air Quality Improvement Program (AQIP) Background

The AQIP is an incentive program created under Assembly Bill (AB) 118 (Núñez, 2007) that provides the Air Resources Board (ARB or Board) with funding through 2015 for mobile source technology-advancing projects. The AQIP focuses primarily on reducing criteria pollutant emissions, with concurrent reductions in greenhouse gas emissions as a co-benefit. This document describes staff's draft plan for the Fiscal Year (FY) 2012-13 AQIP and will form the basis for the proposed FY 2012-13 Funding Plan which will be released for public comment on May 29, 2012, and presented to the Board for consideration at its June 28, 2012 meeting. For more background on the AQIP, please refer to ARB's 2010 Biennial Report to the Legislature on the AB 118 Air Quality Improvement Program available at: http://www.arb.ca.gov/msprog/aqip/leg_reports.htm .

Funding Plan

The Funding Plan is each year's roadmap for expending AQIP funds appropriated to the ARB in the State budget. The plan establishes: (1) ARB priorities for the funding cycle; (2) funding allocations by project category; (3) modifications to program implementation based on public input and evaluation of previous years' projects; and (4) contingencies in the event revenues differ from the State budget appropriation and to address other circumstances.

Prior Board Actions

The Board has previously approved Funding Plans for FYs 2009-10, 2010-11, and 2011-12 which set the guiding principles and implementation priorities for the AQIP. These plans, in which the Board approved several project categories that were envisioned as multi-year projects, form the basis for this year's Funding Plan. Two projects, the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) and the Clean Vehicle Rebate Project (CVRP), have received large financial commitments in the early years of the AQIP. Staff intended for these projects to be funded over multiple years with funding levels adjusted based on need. The Board has also committed funds annually through the AQIP to advanced technology demonstration projects. These demonstration projects are critical to accelerating the next generation of cleaner advanced technologies.

Guiding Principles for AQIP

ARB staff believes the guiding principles established by the Board in 2009 continue to be appropriate for the AQIP and used them to identify funding priorities and projects for this funding year. These principles include:

- Supporting development and deployment of advanced technologies needed to meet California's longer-term, post 2020 State Implementation Plan (SIP) goals
- Focusing program funds on technologies underserved through other incentive programs

Subsets of guiding principles were developed specific to deployment and demonstration projects. Deployment project guiding principles include:

- Accelerating advanced technologies to ensure significant penetration by the 2024 extreme ozone nonattainment area attainment date.
- Funding new, commercialized technologies that are proven and cost-effective.
- Modifying consumer choice to buy cleaner vehicles that may not have occurred without a monetary incentive.

Demonstration project guiding principles include:

- Show the potential to provide cost-effective emission reductions
- Can be economically viable without subsidy
- Will be ready for commercialization within 3 years following demonstration
- Apply to the California marketplace

Section 2: Draft Project Category Funding Targets

The proposed project categories build upon the success of existing projects and provide funding continuity for those categories. Table 1 presents the staff's draft FY 2012-13 project category allocations based on a \$27 million plan and a \$40 million plan. These plans represent two scenarios: 1) a conservative estimate based on revenues over the past several years; and 2) the \$40 million appropriation for AQIP projects in the Governor's proposed budget. For the purposes of this document, funding based on the \$27 million plan will be assumed. The contingencies in Section 5 describe how funding would be scaled if additional funding above the conservative estimate becomes available. A description of each project category is included in Section 4.

Table 1. Draft FY 2012-13 Project Category Funding Targets

Project Category	\$27 M Plan based on recent revenues		\$40 M Plan proposed Budget appropriation	
	Possible Allocation	Vehicles Funded	Possible Allocation	Vehicles Funded
CVRP	\$13–17 M	5,000–8,500	\$17–25 M	8,500–12,700
HVIP	\$5–11 M	150–400	\$5–15 M	350–600
Advanced Technology Demonstration	\$1–5 M	N/A	\$1–8 M	N/A

Section 3: Status of Existing AQIP Projects

In the first three years of the AQIP, approximately \$40 million was appropriated for the program in each year's State budget. However, available project funding is dependent upon actual revenues generated via motor vehicle fees in the Air Quality Improvement Fund, which have been around \$27 to \$30 million. Because of these reduced revenues, staff has revised AQIP project funding levels in accordance to the contingency provisions in each year's Funding Plan.

Table 2 presents a list of the project categories funded to date, funding levels, and project status. For the most part, projects funded in FY 2009-10 received continued funding in FY 2010-11 as was envisioned in the first Funding Plan. In FY 2011-12, ARB scaled back funding to three project categories continued from previous years. Additional funding was not allocated to the Lawn and Garden Equipment Replacement Project since funding for lawn mower replacement became an eligible project category in the Carl Moyer Program. The Off-Road Hybrid Pilot Project implementation is ongoing with 95 percent of voucher funding reserved to 13 pieces of equipment, of which 10 have been received, and emissions evaluations forthcoming. Additional funding for off-road hybrid equipment will be evaluated once emissions evaluations are completed. On December 31, 2011 the Zero-Emission Agricultural Work Vehicle Rebate Project closed due to lack of demand. As provided in the contingency provisions of the FY 2010-11 funding plan, remaining funds are being redirected to the CVRP, hybrid truck testing, and locomotive advanced technology demonstrations. As shown in Table 2, all FY 2011-12 project solicitations have been issued with projects at differing points of implementation.

Table 2. Status of FY's 2009-11 and FY 2011-12 AQIP Projects

Project Category	FY's 2009-11		FY 2011-12	
	Funding Amount	Project Status	Funding Amount	Project Status
HVIP	\$43.4 M ¹	1,012 vouchers issued; ongoing implementation	\$11 M	Grantee selected
CVRP	\$11.1 M ²	Funding exhausted; 1,980 rebates issued	\$15 M	3,164 rebates issued; ongoing implementation
Advanced Technology Demonstrations	\$3.8 M	Projects ongoing	\$2 M	Implementation ongoing
Lawn & Garden Equipment Replacement	\$2.6 M	13,000 mowers replaced; 88% of funds spent	--	
Agricultural Utility Terrain Vehicle Rebate Project	\$1.1 M	Project closed ³ ; 14% of funds spent; 56 rebates issued	--	
Off-Road Hybrid Equipment Pilot	\$2 M	13 vouchers issued; ongoing implementation	--	
Total Funding	\$62M		\$28M	

¹ Includes \$4 million in funding from the California Energy Commission

² Includes \$2 million in funding from the California Energy Commission

³ Project was closed as of December 31, 2011 due to lack of demand. As provided in the contingency provisions of the [FY 2011-12 Funding Plan](#), remaining funds are being redirected to other project categories, approximately \$175,000 for the CVRP, \$199,800 for hybrid truck testing, and \$500,000 for locomotive demonstrations. For more information on this project, please see the [FY 2011-12 Funding Plan](#).

Section 4: Proposed Project Categories

Clean Vehicle Rebate Project (CVRP) Proposed funding of \$13 - \$17 million

Overview

The CVRP provides rebates to California residents, businesses, nonprofit organizations and government entities that purchase or lease a battery electric, fuel cell electric or plug-in hybrid electric vehicle. The CVRP helps get the cleanest vehicles on the road in California by providing consumer rebates to partially offset the higher initial cost of these advanced technologies. This early investment in clean vehicle technologies will prime the market for the larger number of vehicles needed over the next decade and beyond to meet the State's health based air quality standards and climate change goals. The State's vehicle population needs to be fundamentally transformed to meet California's 2050 greenhouse gas emission reduction goal, with zero-emission and hybrid vehicles making up a significant fraction of the light-duty fleet. The investment through CVRP – coupled with corresponding investments in vehicle charging and fueling infrastructure by regional governments, the California Energy Commission and federal government – is enticing manufacturers to focus early vehicle deployment in California. For a complete list of eligible vehicles, rebate amounts and information about the CVRP, visit www.energycenter.org/CVRP.

Project Status

In July 2011, the Board approved \$15 million in funding for the CVRP for Fiscal Year (FY) 2011-12, bringing the cumulative project funding total from FY 2009 through 2012 to \$26.1 million.¹ The California Center for Sustainable Energy was again competitively selected to administer the CVRP. Table 3 contains a cumulative summary of rebates issued by eligible vehicle type as of March 9, 2012, at which time, \$6.9 million in rebate funding remains. The majority of rebates (93 percent) have gone to zero-emission vehicles, and within that category, approximately 85 percent of the rebates have gone toward the Nissan LEAF. Current rebates range from \$900 for zero-emission motorcycles and neighborhood electric vehicles to \$2,500 for full functioning zero emission vehicles. Currently, nineteen manufacturers have rebate-eligible vehicles, some with multiple models, and more introductions are planned in the next six months. Plug-in hybrid electric vehicles are new to the California vehicle market, with their introduction early in 2012.

¹ Includes \$2 million from the California Energy Commission in FY 2011-2012

Table 3. Rebates Issued By Vehicle Type (Completed and in-Progress)

Vehicle Type	Rebates Issued ¹	Total Rebate Funds	% of Total Rebates	% of Total Rebate Funds
Zero Emission Vehicle (ZEV)	4,999	\$ 16,751,750	91	91
Plug-in Hybrid Electric Vehicles (PHEV)	338	\$ 507,000	6	3
Commercial ZEVs (CZEVs) ²	49	\$ 980,000	1	5
Zero-Emission Motorcycles (ZEM)	82	\$ 100,000	1	1
Neighborhood Electric Vehicle (NEV)	56	\$ 69,250	1	<1
Total	5,468	\$ 18,408,000		

¹Data includes rebates completed and in-progress as of March 9, 2012

²Commercial zero emission vehicles are now incentivized through the HVIP

While rebates are distributed throughout the State, the majority are clustered in the San Francisco Bay, Los Angeles/South Coast and San Diego regions. This is likely due to targeted marketing by automakers, the demographics of early adopters, additional incentives and access to public charging infrastructure. In response to poor rebate representation by the San Joaquin Valley, the CVRP has enhanced its outreach efforts in this region and is working collaboratively with the San Joaquin Valley Air Pollution Control District (District) to increase consumer participation by:

- Coordinating with the District’s electric vehicle rebate program which offers an additional rebate on top of the CVRP
- Co-sponsoring weekend public events and media outreach to promote both programs
- Better informing people on the variety of incentives available (e.g., HOV access, free public charging, local/state/federal vehicle and infrastructure incentives, utility rate discounts).

Staff Proposal for FY 2012-13

Staff is proposing a funding allocation between \$13 and \$17 million for the CVRP in FY 2012-13. The prevailing challenge this fiscal year is the anticipated gap between projected rebate demand and available AQIP funding. Manufacturers’ planned production volumes of clean vehicles for California range between 15,000 and 20,000 vehicles, collectively. Assuming production translates to sales, and sales to rebate applications, CVRP will only meet about one-third of the projected rebate demand. Staff’s proposal is designed to continue ARB’s commitment to advancing clean vehicle technologies, while maintaining the program’s consumer-driven focus.

A. Manufacturer Rebate Backstop

ARB’s goal is to support the maturation of a diverse and competitive clean vehicle market. Staff proposes to place an upper limit or “backstop” on the number of rebates any one manufacturer can receive in FY 2012-13. This allows the marketplace to naturally mature while ensuring that no one manufacturer takes a

majority of funding. This approach is consistent with direction provided to staff by the Board at its June 2011 meeting. Staff proposes setting a rebate backstop at 50 percent of available rebates. Based on a CVRP allocation of \$13 to \$17 million and an equal split of ZEVs and PHEVs, a manufacturer would be eligible for a maximum of between 3,000 and 4,000 rebates. The backstop would be the same regardless of vehicle type (e.g., a manufacturer of a PHEV would have the same backstop as a manufacturer of a ZEV). A potential consequence of the backstop is that large volume manufacturers could be excluded from the CVRP at some point during the fiscal year. Staff considers that unlikely, however, based on: (1) the first-come, first-served nature of the program; (2) the expanding diversity of rebate-eligible vehicles; and (3) analysis of rebate data since PHEVs were introduced in February 2012. Alternative options considered included set asides by manufacturer and a new model set-aside. Upon analysis, staff determined each would be too cumbersome to administer, and lacked the transparency and simplicity that are key to the CVRP's success. A new model set aside also would not preclude one or two manufacturers' vehicles from garnering all of the set aside rebates.

B. Waiting List Discretion

The CVRP waiting list provision has been a popular feature for consumers and manufacturers alike because it provides a degree of funding certainty during gaps between funding cycles. A waiting list is appropriate when acting as a modest investment to bridge a short-term funding gap; it is not sustainable, however, when demand quickly outstrips available funds. Should the CVRP fall under the latter scenario, it would likely require major restructuring in the future. Staff proposes that the Board provide the Executive Officer (EO) discretion on whether to allow a waiting list. A decision-making trigger would be invoked when the vehicle funding is 80 percent spent. Parameters that would be evaluated in making the decision include: expenditure rate of the CVRP funding, potential for additional funds, and projected future vehicle volumes. If a waiting list is allowed, the future funding commitment would be limited to no more than \$5 million.

C. New Vehicle Type

Staff proposes adding the battery electric vehicle with a small auxiliary power unit (BEVx) as a zero emission vehicle type. The BEVx is a new regulatory vehicle category approved by the Board in January 2012. No other changes are proposed to the eligible vehicle types or rebate amounts.

D. Car Share Allocation

Staff proposes to carry over \$200,000 into FY 2012-13 from the car share set aside established in FY 2011-12. Approximately \$600,000 of the \$1.5 million set-aside has been spent. Unused car share funds in excess of this carry over amount roll back to the CVRP fund when the CVRP is 95 percent spent.

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Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) Proposed funding of \$5 - \$11 million

Project Overview

The HVIP is the nation's first program to directly reduce the up-front cost of a hybrid truck or bus, with fleets able to secure a voucher through their dealer as part of their purchase order. The HVIP is designed to reduce the up-front cost of a hybrid or zero-emission truck or bus, allowing fleets to secure a voucher for about half the vehicle's incremental cost at the time of vehicle order. Accelerating early deployment of hybrid and zero-emission commercial vehicles is critical to helping California meet its air quality and climate change goals. Staff is proposing an investment of \$5 to \$11 million in the HVIP for FY 2012-13.

Project Status

While Year 1 (FY 2009-10) HVIP voucher demand was high, fleet participation in Year 2 (FY 2010-11) has been slower than expected (See Figure 1, below), with approximately \$10 million remaining for hybrid and zero-emission vehicle vouchers as of March 30, 2012. Discussions with stakeholders suggest participating fleets may have already turned over much of their existing older, urban delivery vehicle fleet for new hybrids in Year 1 when HVIP funds initially became available. Some fleet representatives have also suggested voucher amounts be increased to further stimulate program demand.

Figure 1: Hybrid and Zero-Emission Vehicle Funding Demand

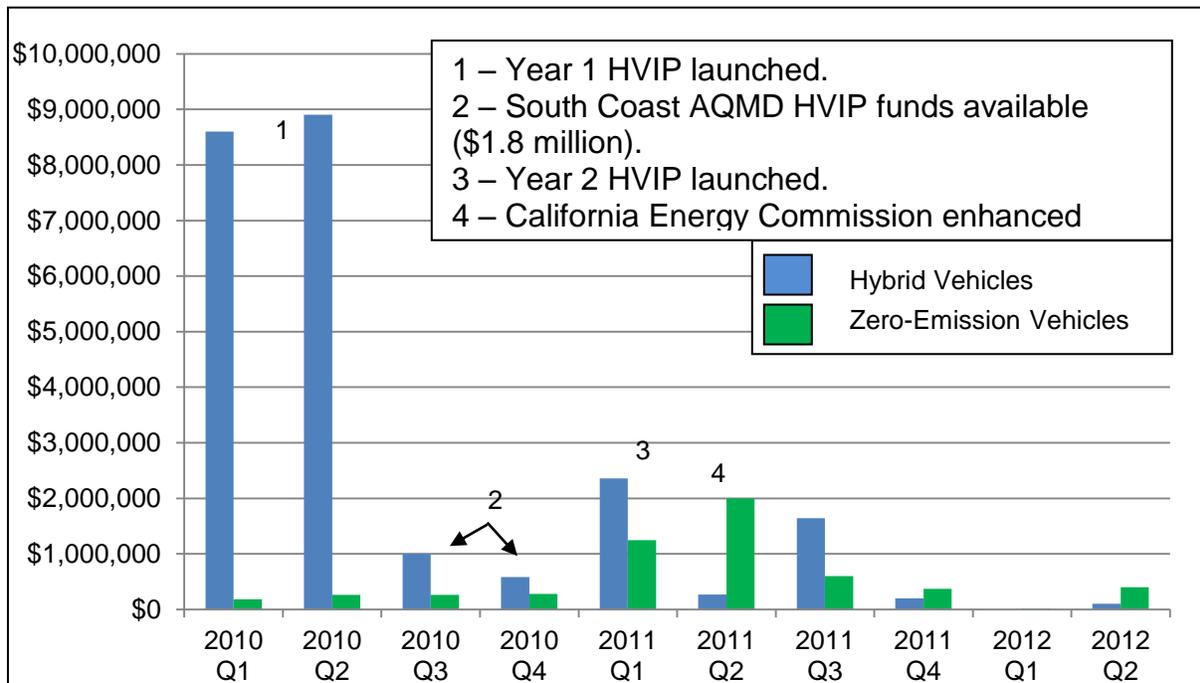


Chart includes zero-emission commercial vehicles funded via the CVRP in 2010.
Second quarter 2012 data as of March 21, 2012.

Relative demand for zero-emission commercial vehicles has grown faster than that for hybrids, due in part to the availability of complementary incentive funding. While only 49 zero-emission commercial vehicles were funded in Year 1, this increased to 238 in Year 2.² The California Energy Commission’s AB 118: Alternative and Renewable Fuel and Advanced Vehicle Technology Program provided \$4 million to enhance the voucher amounts for 150 zero-emission vehicles in Year 2, and dozens of additional zero-emission commercial vehicles receiving HVIP vouchers also received federal American Recovery and Reinvestment Act co-funding.

Most vouchers issued thus far have helped California fleets purchase hybrid and zero-emission beverage and parcel delivery vehicles (Table 4). Private fleets have received over 90 percent of voucher funding, and six ‘early adopter’ companies have received 80 percent of HVIP funding thus far. Staff’s proposed HVIP updates are geared towards increasing demand while further encouraging participation by a wider range of California fleets.

Table 4: HVIP Vouchers by Vehicle Vocation

Vehicle Vocation	Number	Percent
Beverage Delivery	382	37%
Parcel Delivery	311	30%
Uniform & Linen Delivery	108	10%
Food Distribution	108	10%
Other Truck	81	8%
LP Pick-up & Delivery	22	2%
All Bus	22	2%
Total	1,034	

Data as of March 21, 2012.

ARB has partnered with Calstart, selected via competitive solicitation, to implement the FY 2009-10, FY 2010-11, and FY 2011-12 HVIP. Additional information regarding the existing HVIP, including eligible vehicles, voucher amounts, and program requirements, can be found at: www.californiahvip.org.

Staff Proposal for FY 2012-13

ARB has delayed launching the Year 3 HVIP since approximately \$10 million in Year 2 HVIP funds remain available. Staff proposes combining the remaining Year 2 HVIP funds with the \$11 million Year 3 HVIP (approved by the Board last July) and re-launching the HVIP in July 2012 utilizing the proposed higher voucher amounts and other program enhancements described in this section. Staff proposes that any unredeemed vouchers have the option to delay redemption until July 2012 and redeem at staff’s proposed Year 4 HVIP voucher amounts shown in Tables 5-8 if approved by the Board.

² Zero-emission commercial vehicles were funded as part of the CVRP in Year 1 (FY 2009-10). These vehicles were shifted to the HVIP the next year.

A. Project Funding Contingency

The HVIP has about \$20 million in existing funding from Year 2 and Year 3 combined. Because of this remaining balance, staff proposes that additional HVIP funding be contingent upon voucher demand and the need for funding beyond the current \$20 million. Should this demand not materialize, the proposed FY 2012-13 HVIP funding would be reduced as follows:

- 1) Up to half of the allocated funding may be redirected to the CVRP if remaining HVIP funds exceed remaining CVRP funds as of November 1, 2012.
- 2) Additional funds may be redirected to the CVRP or other FY 2012-13 AQIP projects if demand for HVIP does not increase by January 1, 2013. Staff will provide specified dollar amounts for this scenario once final project allocations are made in the proposed FY 2012-13 Funding Plan.

B. Increase Voucher Amounts for Zero-Emission Vehicles

Staff proposes increasing the voucher amount for zero-emission commercial vehicles (Table 5) due to their increased near-term viability as a driver of the advanced technology truck market, and the need to leverage this technology longer-term for more efficient and diverse zero-emission technology applications. Staff's proposed FY 2012-13 HVIP voucher amounts for zero-emission vehicles are similar to those when the additional Energy Commission voucher funding was available. Staff expects these proposed voucher amounts will significantly increase demand, help boost production over the next two years, and ensure a robust California market for zero-emission commercial vehicles.

Table 5: Proposed Zero-Emission Truck and Bus Voucher Amounts

Gross Vehicle Weight	Base Vehicle Incentive	
	1 to 100 vehicles	101 to 200 vehicles
5,001 – 8,500 lbs	\$12,000	\$ 8,000
8,501 – 10,000 lbs	\$18,000	\$12,000
10,001 – 14,000 lbs	\$30,000	\$20,000
14,001 – 19,500 lbs	\$35,000	\$25,000
19,501 – 26,000 lbs	\$40,000	\$30,000
> 26,000 lbs	\$45,000	\$35,000

The first three HVIP-eligible vehicles purchased by a fleet are eligible for the following additional voucher amount: \$3,000/vehicle if below 8,500 lbs; \$5,000/vehicle if 8,501 to 10,000 lbs; and \$10,000/vehicle if over 10,000 lbs.

A zero-emission school bus is eligible for the same additional funding as a hybrid school bus as identified in Table 7.

C. Update Voucher Funding Structure

Staff proposes increasing the maximum number of allowable vouchers per fleet from 100 to 200 (Tables 5 and 6). The proposed Base Vehicle Incentive for hybrid vehicles one through 100 remains unchanged, while vouchers 101 through 200 would be discounted by about one-third. Raising the maximum number of vouchers per fleet to 200 with this progressive structure will provide flexibility for larger fleets

that have driven HVIP demand to receive additional vouchers while providing HVIP the capacity to fund more vehicles.

Table 6: Eligible Hybrid Truck and Bus Proposed Voucher Amounts

Gross Vehicle Weight in Pounds (lbs)	Base Vehicle Incentive	
	1 to 100 vehicles	101 to 200 vehicles
8,501 – 10,000 lbs (plug-in hybrids only)	\$10,000	\$7,000
10,001 – 19,500 lbs	\$15,000	\$10,000
19,501 – 33,000 lbs	\$20,000	\$12,000
33,001 – 38,000 lbs	\$25,000	\$15,000
> 38,000 lbs	\$30,000	\$20,000

The first three vouchers redeemed by a fleet are eligible for the following additional voucher amount: \$5,000/vehicle if 8,501 to 10,000 lbs and \$10,000/vehicle if over 10,000 lbs. Additional voucher funding opportunities are identified in Table 7.

To encourage fleets – particularly small fleets – to invest in hybrid technology, up to an additional \$10,000 (depending on vehicle size) would be provided for the first three vouchers received by a fleet. Staff hopes to draw more small fleets and first-time purchasers into the HVIP by further reducing the incremental cost for small volume purchases.

D. Additional Hybrid Vehicle Funding Opportunities

Staff proposes offering several opportunities for additional voucher funding should a hybrid vehicle exceed minimum HVIP eligibility requirements (Table 7).

- 1) *Plug-in and Hydraulic Hybrids* - Staff proposes providing an additional \$10,000 for plug-in or hydraulic hybrid vehicles that demonstrate at least a 40 percent fuel economy benefit as part of their HVIP Vehicle Eligibility Application.
- 2) *School Buses* - Because reducing emissions from school buses continues to be an ARB priority, ARB staff proposes continuing the existing HVIP provision of providing an additional \$5,000 to \$10,000 for hybrid or zero-emission school bus purchases.
- 3) *Hybrid Vehicle Certification* - Staff recommends increasing the HVIP voucher incentive for ARB-certified hybrid vehicles above 14,000 lbs from \$5,000 to up to \$20,000 to further encourage voluntary vehicle certification.
- 4) *On-Board Diagnostics* - In May 2009, the Board adopted 'On-Board Diagnostic Regulations for Heavy-Duty Engines and Vehicles' (HD OBD) that require heavy-duty vehicles and engines be equipped by the 2013 model year with ARB-certified on-board diagnostics systems that monitor engine and vehicle after-treatment to ensure in-use vehicle emissions do not exceed specified thresholds. ARB staff will present HD OBD amendments to the Board in July 2012 to provide additional time for hybrid heavy-duty vehicles – for which OBD poses additional complexities – to comply with these requirements. Staff proposes providing an additional HVIP voucher amount of up to \$20,000 per vehicle that demonstrates early full or partial OBD compliance as required by HD OBD or its amendments. The definition of early full or partial OBD compliance would be determined in consultation with ARB OBD regulatory staff,

the HVIP Work Group and other stakeholders based upon factors such as technical feasibility, cost of early compliance, and market share projected to achieve early or partial compliance.

Table 7: Opportunities for Additional Hybrid Vehicle Voucher Funding¹

Gross Vehicle Weight	Plug-in or Hydraulic Hybrid²	School Bus³	ARB Certification	Early Heavy-Duty Vehicle On-Board Diagnostics Compliance⁴
8,501 – 10,000 lbs (plug-in hybrids only)	NA	\$5,000	NA (required)	NA (full OBD required)
10,001 – 14,000 lbs	\$10,000	\$10,000	Up to \$20,000	Up to \$20,000
14,001 – 19,500 lbs				
19,501 – 33,000 lbs				
33,001 – 38,000 lbs				
> 38,000 lbs				

1 – The total of all public incentives for a vehicle, including the HVIP Base Vehicle Incentive and all voucher enhancements may not exceed the assumed vehicle incremental cost identified in Table 8.

2 – Vehicle must demonstrate at least a forty percent fuel economy benefit relative to its non-hybrid counterpart as part of its HVIP eligibility application.

3 – Zero-emission school buses also eligible for this voucher bump-up.

4 - Specific criteria for determining early 'partial' or 'full' OBD compliance will be determined by ARB staff and interested stakeholders during public HVIP Work Group meetings.

E. Assumed Incremental Cost

The HVIP has always required that the sum of all public subsidies – including the HVIP voucher – does not exceed a vehicle’s incremental cost. Staff proposes the HVIP incorporate an assumed vehicle incremental cost as identified in Table 8 in order to streamline program administration and transparency and ensure a level playing field for all vehicle manufacturers. These assumed incremental costs represent the average difference between a typical baseline and HVIP-funded vehicle per weight category and technology type and were calculated based upon actual HVIP purchase invoices, HVIP eligibility applications, and other information. Neither the total of all HVIP voucher funding, nor the total of all public incentive funding, may exceed the Assumed Vehicle Incremental Cost.³ For school buses, total public incentive funding may not exceed total vehicle cost.

³ ARB may approve a higher incremental cost for a specific vehicle purchase on a case-by-case basis if substantiated by the voucher recipient and approved by ARB at the time of voucher request.

Table 8: Assumed Vehicle Incremental Cost

Gross Vehicle Weight	Hybrid	Zero-Emission
5,001 – 8,500 lbs	NA	\$ 30,000
8,501 – 10,000 lbs	\$25,000	\$ 40,000
10,001 – 14,000 lbs	\$30,000	\$ 65,000
14,001 – 19,500 lbs	\$40,000	\$ 75,000
19,501 – 26,000 lbs	\$50,000	\$100,000
26,001 – 33,000 lbs	\$60,000	\$120,000
33,000 – 38,000 lbs	\$70,000	case-by-case
>38,000 lbs	\$80,000	

Transit/shuttle bus, plug-in hybrid vehicle and hydraulic hybrid vehicle incremental costs, as well as incremental cost fuel cell or other vehicles not typically funded by the HVIP, will be determined on a case-by-case basis.

F. Aerial Boom Vehicles with ePTO

ARB staff recommends extending HVIP eligibility to electric power take-off (ePTO) - powered aerial boom vehicles above 26,000 lbs GVWR with a working boom height of at least 50 feet. These vehicles typically idle the main engine to power the aerial boom, often for hours per day and in residential neighborhoods. An ePTO aerial boom vehicle is equipped with a battery to power the aerial boom, eliminating engine idle time. While smaller aerial boom vehicles have a higher population, the heavier vehicles typically provide more significant and predictable emission benefits due to their high-idle times. Staff recommends this largest class of aerial boom vehicles with ePTO be eligible for the same voucher amounts as hybrid vehicles between 19,501 to 33,000 lbs GVWR (Table 6).

G. Hybrid Off-Road Equipment

The Hybrid Off-Road Equipment Pilot Project, approved by the Board as part of the FY 2010-11 AQIP Funding Plan, provides the University of California at Riverside Center of Environmental Research and technology (CE-CERT) almost \$1 million to accelerate deployment of commercialized construction equipment and \$1 million to evaluate the equipment's emission benefits during typical operations. While it is premature without the emissions testing results to set aside additional funding to hybrid equipment deployment, waiting until the FY 2013-14 Funding Plan would delay funding for hybrid equipment deployment until early 2014. Staff therefore proposes that the Board provide the ARB Executive Officer discretion to allow FY 2012-13 HVIP funding to be used for hybrid off-road equipment if results of the pilot project indicate the equipment is ready for full deployment.

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Advanced Technology Demonstrations Proposed funding of \$1 - \$5 million

Overview

ARB's goal in funding demonstration projects under the AQIP is to help accelerate the next generation of advanced technologies to reduce emissions from mobile sources. AQIP funding would be used to demonstrate the viability of new technologies with the potential for commercialization within three years of demonstration and the ability to gain significant market penetration. To date, ARB has focused its limited demonstration project funds in the off-road sector. This complements the Energy Commission's AB 118 advanced technology demonstration funds which has focused primarily on on-road vehicles. Staff proposes a funding target of \$1 to \$5 million for FY 2012-13.

Project Status

Table 9 provides an overview of AQIP demonstration projects funded as of March 2012. To date, about 40 percent of funds have been allocated to locomotive demonstrations and 30 percent to marine vessel demonstrations.

Table 9. AQIP Advanced Technology Demonstration Project Status

FY	Project	Grantee	Grant Amount	Project Status
2009-10	Marine	Port of Los Angeles: Hybrid Tugboat Retrofit	\$1,000,000	Marine vessel is at the Port of Los Angeles to begin field demonstration.
	Locomotive	Port of Long Beach: DPF Retrofit of Switcher	\$ 346,178	DPFs installed and operational; locomotive is in use at the port.
		Sacramento Metro Air Quality Management District: EMD Line-Haul DPF Retrofit	\$ 502,865	Final assembly of retrofits underway; delivery of locomotive scheduled for April 2012 to begin durability testing.
2010-11	Marine	South Coast Air Quality Management District: Tugboat DPF/SCR Retrofit	\$ 439,000	In fabrication stage; manufacturing DPF/SCR equipment.
		Bay Area Air Quality Management District: Sail Ferry Demo	\$ 165,000	Kicked-off in March 2012.
	Locomotive	Bay Area Air Quality Management District: Tier-4 Genset Switcher	\$ 529,810	Beginning fabrication of locomotive.
		Bay Area Air Quality Management District: DPF Retrofit on Genset Switcher	\$ 270,190	Conducting baseline emission testing.
	Lawn and Garden	Mojave Desert Air Quality Management District	\$ 15,000	Project kicked-off December 2011; scheduled to start May 2012.
		South Coast Air Quality Management District	\$ 100,000	Project kicked-off December 2011; equipment available for testing April 2012.
		San Joaquin Valley Unified Air Pollution Control District	\$ 250,000	Project kicked off October 2011; project scheduled to start May 2012.
2011-12	School Bus	Kings Canyon Unified School District: Battery Bus	\$ 497,676	Grant agreement in development.
		San Diego Air Pollution Control District: Battery Bus	\$ 502,304	Grant agreement in development.
	Locomotive	Tier-4 in High Horsepower Locomotives	Up to \$1,000,000	Solicitation closes April 30, 2012

Proposed FY 2012-13 Demonstration Project Categories

ARB is proposing the following demonstration categories in priority order:

1. Zero emission off-road equipment (such as transport refrigeration equipment, ground support equipment, and cargo handling equipment)
2. Zero emission transit vehicles
3. LNG ferry demonstration
4. Agricultural Tier-4 and hybrid tractor share project
5. Marinization of Tier-4 loco engines for tugboats and ferries
6. Post Tier-4 locomotive

Selection for funding will be based on priority and available funds. As in previous years, details on eligible projects will be vetted through the AQIP Demonstration Project Working Group. Information on this working group may be found on ARB's AB 118 AQIP Advanced Technology Demonstration Projects webpage at <http://www.arb.ca.gov/msprog/aqip/demo.htm> .

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Section 5: Proposed Contingency Plan

Similar to previous years' funding plans, this year's Funding Plan will incorporate contingency provisions in the event circumstances change between Board approval and the time solicitations are issued or funds awarded. Under these provisions, the Board would grant the Executive Officer authority to make the necessary mid-course adjustments to address the cases described below.

Contingency Related to Available AQIP Funds

Over the past three funding cycles, revenues have been nearly 30 percent lower than the amount appropriated in the State budget. In addition, ARB has received funds from other funding sources to augment AQIP projects, primarily from the California Energy Commission's AB 118 program. Based on this experience, ARB will propose the following:

- A minimum allocation for each project category based on a \$27 million revenue total (a conservative estimate based on the revenues over the past three years) as well as an allocation for \$40 million assigned in the proposed State Budget.
- Initial grant solicitations will be based on the minimum allocation; however, the solicitations and grant agreements will be written with provisions to increase the awarded funding if there are sufficient revenues or if additional funding becomes available.
- Depending on actual revenues, funding for each project category would be scaled according to the targets in Table 2 and an updated assessment of demand for funding in each project category.
- Any major allocation adjustments outside those specifically prescribed in the proposed Funding Plan would require Board approval.

Contingency for Minor Technical/Administrative Changes

This provision will allow staff to make minor changes to a project category through a publicly vetted work group process. Minor changes would be within the Funding Plan parameters approved by the Board. Any major technical or administrative adjustments outside those specifically prescribed in the proposed Funding Plan would require Board approval.

Section 6: Fiscal Year 2012-13 Project Solicitations

Staff is proposing to release grant solicitations based on the minimum allocations early in the 2012-13 fiscal year after Board approval of the Funding Plan. However, ARB is not able to enter into a grant agreement until the State budget has been approved. The CVRP solicitation will be ARB's first priority; it is staff's goal to make FY 2012-13 CVRP funding available to consumers as quickly as possible and before the current funds are exhausted, if possible.