

California Environmental Protection Agency



**PROPOSED AB 118 AIR QUALITY IMPROVEMENT PROGRAM
FUNDING PLAN FOR FISCAL YEAR 2009-10**

Date of Release: **March 23, 2009**

Scheduled for Consideration: **April 23, 2009**

TABLE OF CONTENTS

Executive Summary	i
I. Introduction.....	1
A. Background on the AQIP	2
B. Implementation of the AQIP	2
C. Other Air Quality Incentive Programs	3
D. Coordination with AB 118 Alternative and Renewable Fuel and Vehicle Technology Program	4
E. Coordination with Federal Incentive Programs	5
F. Status of Air Quality Loan Program for Trucks.....	6
II. Guiding Principles for Identifying AQIP Projects	9
A. Implementation Priorities.....	9
B. Deployment Projects	10
C. Advanced Technology Demonstration Projects	11
D. Other Project Categories.....	12
III. Summary Proposed Funding Categories for FY 2009-10.....	13
A. Proposed Projects	13
B. Program Benefits	14
IV. Description of Proposed Funding Categories	17
A. Hybrid Truck and Bus Voucher Incentive Project (HVIP).....	18
B. Zero-Emission and Plug-In Hybrid Light-Duty Vehicle (Clean Vehicle) Rebate Project.....	23
C. Lawn and Garden Equipment Replacement (LGER) Project.....	27
D. Zero-Emission Agricultural Utility Terrain Vehicle (Agricultural UTV) Rebate Project.....	29
E. Advanced Technology Demonstration Projects	31
1. Locomotives	32
2. Marine Vessels	32
3. Off-Road Equipment	33
4. Agriculture Equipment	33
5. Transit Bus and School Bus	33
V. Next Steps	36
A. Timeline for FY 2009-10 Project Solicitations	36
B. Contingency Plans.....	37
C. FY 2010-11 Funding Plan	39

Appendices: Additional Details on Projects Proposed for Funding

- Appendix A-1: Hybrid Truck and Bus Voucher Incentive Project Q & A**
- Appendix A-2: Heavy-Duty Hybrids Eligible For Federal Tax Incentives**
- Appendix B: Zero-Emission and Plug-In Hybrid Light-Duty Vehicle (Clean Vehicle) Rebate Project Q & A**
- Appendix C: Lawn and Garden Equipment Replacement Project Q & A**
- Appendix D: Zero-Emission Agricultural UTV Rebate Project Q & A**
- Appendix E: Advanced Technology Demonstration Projects**
- Appendix F: Tentative FY 2009-10 AQIP Project Schedule**

Executive Summary

In 2007, Governor Schwarzenegger signed into law the *California Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 2007* (Assembly Bill (AB) 118, Statutes of 2007, Chapter 750). The Act creates the Air Quality Improvement Program (AQIP), a voluntary incentive program administered by the Air Resources Board (ARB or Board) to fund clean vehicle and equipment projects, research on biofuels production and the air quality impacts of alternative fuels, and workforce training. The AQIP is funded through 2015 via increases to the smog abatement, equipment registration, and vessel registration fees. The appropriation for AQIP projects in the proposed Budget for fiscal year (FY) 2009-10 is \$42.3 million.

The AQIP expands ARB's portfolio of air quality incentives, providing the opportunity to fund projects that do not fit within the statutory framework of existing incentive programs such as the Carl Moyer Air Quality Standards Attainment Program (Carl Moyer Program), Goods Movement Emission Reduction Program, and Lower-Emission School Bus Program. These existing programs focus on near-term reductions to reduce ozone and particulate matter pollution and cut exposure to toxics. Statute provides much broader flexibility for implementing the AQIP.

Staff proposes to utilize this flexibility by directing the AQIP funds to support development and deployment of the advanced technologies needed to meet California's longer-term, post 2020 State Implementation Plan (SIP) goals, complementing the existing programs' focus on near-term emission reductions from fully commercialized emission control technologies. AQIP funds are unique in that they can be used for these forward looking purposes, providing ARB with a significant, ongoing funding source to pay for technology advancing projects for the first time. This would fill a critical niche in ARB's air quality investment portfolio.

Investing now in the next generation of vehicles, equipment, and emission controls is essential if California hopes to meet its long-term air quality goals. This funding would also provide an economic stimulus for California by accelerating development and deployment of tomorrow's cars, trucks, and buses, providing a boost to local advanced technology vehicle and equipment manufacturers, and stimulating the California market for the next generation of green workers needed to support these technologies.

Purpose of Proposed AB 118 Air Quality Improvement Program Funding Plan For Fiscal Year 2009-10 (FY 2009-10 Funding Plan)

The proposed FY 2009-10 Funding Plan would serve as the blueprint for expending the AQIP funds that will be appropriated to ARB in the FY 2009-10 State budget. The plan establishes ARB's priorities for the funding cycle, describes the projects ARB intends to fund, and sets funding targets for each project. The plan specifies all policy-related details regarding the proposed projects, including eligible applicants, the criteria ARB will use to evaluate applications, eligible vehicles/equipment, maximum incentive amounts, and other grantee requirements.

The proposed FY 2009-10 Funding Plan will be paired with regulatory guidelines to direct ARB's implementation of the AQIP. The guidelines define the program's structure and establish minimum administrative and implementation requirements, providing the overarching rules for how ARB will run this new incentive program. Whereas the guidelines establish the overall framework for the program through 2015 and apply to all funding years, the Funding Plan will be updated each year and include the funding proposals and implementation details specific to each year. Staff's proposed regulatory AQIP Guidelines were released on March 6, 2009 and will be considered by the Board alongside the proposed FY 2009-10 Funding Plan at the April 2009 Board meeting.

Implementation Priorities and Guiding Principles

The overarching implementation priority for FY 2009-10 is directing AQIP funds to support development and deployment of the advanced technologies needed to meet California's long-term SIP goals. Staff gave priority to technologies that will be ready for on-the-ground deployment in the 2010 time frame. Technologies that could help meet long-term SIP commitments but which are not ready for deployment were considered for funding as demonstration projects. Staff also gave priority to projects that do not have access to other ARB incentive programs.

Staff proposes to direct about 80 percent of the FY 2009-10 AQIP funds towards on-the-ground vehicle and equipment deployment projects for the next generation of advanced technology vehicles and equipment just reaching commercialization, including \$25 million for hybrid trucks and buses. These projects provide both immediate emission reductions and, more importantly, set the stage for greater reductions in the future by accelerating large-scale penetration of these advanced technologies. Incentives are needed because these vehicles/equipment generally cost more than other models on the market. Spurring deployment of these vehicles will help reduce production costs so the technologies become more cost competitive, accelerate technology transfer to other sectors, and accelerate consumer acceptance.

Staff proposes to direct the remaining 20 percent of the FY 2009-10 AQIP funds to demonstration projects for next generation of advanced technology vehicles, equipment, or emission controls which have not yet reached the commercialization stage of development. Funding would be used to demonstrate the viability of a new technology, accelerating it along the path towards commercialization and full-scale deployment.

Summary of Funding Proposal

Table ES-1 lists the projects proposed for funding in FY 2009-10. The cornerstone of the AQIP for FY 2009-10 is the \$25 million Hybrid Truck and Bus Voucher Incentive Project, aimed at getting 1,000 new hybrid medium- and heavy-duty vehicles on California's roadways as soon as possible. Hybrid vehicle technology can significantly reduce criteria pollutant, air toxic, and greenhouse gas emissions – particularly in refuse trucks, work trucks, delivery vans, urban buses, and other vehicles with high stop-and-go or idling duty cycles. Hybrid medium- and heavy-duty vehicles are now on the

market in multiple vehicle configurations and classes, and staff believes the timing is optimal for a large scale incentive investment to increase their use in California. Over 1,200 hybrid trucks are already on the road nationally – in part because of incentive programs in New York, Michigan and other states – while less than 50 have been sold in California.

A large funding commitment for hybrid truck technology will not only help it become established in the market, but hopefully become common place in the near future, much the way hybrid vehicles have become common place in the light-duty sector. As sales volumes of hybrid trucks increase, staff envisions that incremental costs will decline to the point where incentives are no longer needed. Accelerating the large-scale penetration of hybrid trucks and buses will have significant long-term air quality benefits beyond the immediate benefits from the 1,000 vehicles funded under the AQIP.

Table ES-1: Projects Proposed for AQIP Funding in FY 2009-10

Project Description	Funding Target (in millions)
Deployment/Commercialization Projects	
Hybrid Truck and Bus Voucher Incentive Project	\$25
Zero-Emission and Plug-In Hybrid Light-Duty Vehicle Rebate Project	\$5
Lawn and Garden Equipment Replacement Project	\$2
Zero-Emission All-Terrain Agricultural Work Vehicle Rebate Project	\$1.3
Advanced Technology Demonstration Projects	
Locomotives	\$2
Marine Vessels	\$1
Transit and School Buses	\$3
Off-Road Equipment	\$2
Agricultural Equipment	\$1
TOTAL PROPOSED FUNDING	\$42.3*

*Available funding based on the proposed FY 2009-10 State Budget. Funding amounts will be adjusted proportionally if the final FY 2009-10 Budget contains a different appropriation for the AQIP.

Complementing the hybrid truck and bus incentives, staff also proposes the following zero- or near-zero emission deployment projects:

- Zero-emission and plug-in hybrid light-duty vehicle rebates, modeled after the ARB’s successful Alternative Fuel Incentive Program. This would provide consumer rebates for the new zero emission and plug-in hybrids that will be introduced to the California market in 2010 and 2011. Consumer acceptance of these vehicles is critical to seed the market for widespread commercialization of these advanced technology vehicles.
- Lawn and garden equipment replacement rebates/vouchers to be run by local air districts, augmenting their existing programs. These programs have been successful in reducing criteria pollutant emissions cost-effectively, but have been limited in scope due in part to lack of funding. This would provide significant

state funding for the first time for the purchase of zero-emission lawn mowers, with a focus on districts with the worst air quality.

- Zero-emission all-terrain agricultural work vehicle rebates for purchase of equipment used in work applications. All-terrain and utility vehicles are used extensively in the agricultural industry. Electric models are now on the market in small volumes, but costs are on average one-third higher than corresponding gasoline-powered models. Rebate incentives would accelerate introduction of these vehicles in the commercial sector.

These proposed deployment projects are designed to be straightforward as possible for the consumer – vouchers or rebates provided to vehicle or equipment purchasers on a first-come, first-served basis – with no lengthy applications or extensive reporting requirements. Staff is taking this approach in order to deploy these new technologies as quickly as possible.

ARB staff also proposes a total of \$9 million FY 2009-10 funding for demonstration projects in five sectors: locomotives, marine vessels, off-road equipment, agricultural equipment, and transit and school bus sectors. Most of this funding would be directed to off-road categories because the majority of ARB's investment in deployment projects is directed to on-road vehicles. By funding off-road demonstration projects now, ARB staff envisions that there will be greater opportunity to fund advanced technology off-road deployment projects in the future years.

Next Steps

The plan also lays out the next steps ARB will take to implement the AQIP upon Board approval of the proposed FY 2009-10 Funding Plan, including a timeline for soliciting projects and contingency plans. The proposed FY 2009-10 Funding Plan is based upon the latest available information. However, circumstances may change between the time the Board approves the plan and the time project solicitations are issued or project funds awarded. Staff is including contingency plans in the event mid-course corrections are needed to ensure that FY 2009-10 AQIP funds are spent expeditiously and efficiently. The proposed contingency provides the Executive Officer the authority to redirect a limited amount of FY 2009-10 AQIP funds from Board-approved funding targets in the following cases should the need arise:

- The demand for funding does not meet the funding target for a particular project.
- An emerging technology is delayed or accelerated, thereby affecting the viability of a proposed project.
- Additional sources of incentives, such as new federal funds, become available.
- Additional funding is needed for ARB's new air quality loan program for trucks.

Recommendation

Staff recommends that the Board approve the proposed FY 2009-10 Funding Plan.

I. Introduction

In 2007, Governor Schwarzenegger signed into law the *California Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 2007* (Assembly Bill (AB) 118, Statutes of 2007, Chapter 750). The Act creates the Air Quality Improvement Program (AQIP), a voluntary incentive program administered by the Air Resources Board (ARB or Board) to fund clean vehicle and equipment projects to reduce criteria pollutant emissions, research on biofuels production and the air quality impacts of alternative fuels, and workforce training. AB 118 provides nearly \$50 million in annual funding through 2015 for the AQIP.

The AQIP expands ARB's portfolio of air quality incentives, providing the opportunity to fund projects that do not fit within the statutory framework of existing incentive programs such as the Carl Moyer Air Quality Standards Attainment Program (Carl Moyer Program), Goods Movement Emission Reduction Program, and Lower-Emission School Bus Program. These existing programs focus on near-term reductions to reduce ozone and particulate matter pollution and cut exposure to toxics. Statute provides much broader flexibility for implementing the AQIP.

Staff proposes to utilize this flexibility by directing the AQIP funds to support development and deployment of the advanced technologies needed to meet California's longer-term, post 2020 State Implementation Plan (SIP) goals, complementing the existing programs' focus on near-term emission reductions from fully commercialized emission control technologies. Until the creation of the AQIP, limited ARB funding had been available for these types of technology advancing projects. Investing now in the next generation of vehicles, equipment, and emission controls is essential if California hopes to meet its long-term air quality goals given the time it takes for the fleet to turn over. AQIP funds are unique in that they can be used for these forward looking purposes, filling a critical niche in ARB's air quality investment portfolio.

The *Proposed AB 118 Air Quality Improvement Program Funding Plan For Fiscal Year 2009-10* (FY 2009-10 Funding Plan) is a key component of ARB's implementation of the AQIP. The proposed FY 2009-10 Funding Plan will serve as the blueprint for expending the AQIP funds which will be appropriated to the ARB in the FY 2009-10 State budget. The plan establishes ARB's priorities for the funding cycle, describes the projects ARB intends to fund, and sets funding targets for each project.

The remainder of this introductory chapter provides background on the AQIP, a description of related air quality programs, and an update on ARB's implementation of the new air quality loan program for trucks (Truck Loan Program) being funded with ARB's FY 2008-09 AQIP appropriation. Subsequent chapters describe the staff's guiding principles for identifying projects, summarize the projects proposed for FY 2009-10 funding, and lay out next steps for program implementation if the Board approves the proposed FY 2009-10 Funding Plan.

A. Background on the AQIP

The AQIP provides funding for air quality improvement projects related to fuel and vehicle technologies through 2015 via increases to the smog abatement, equipment registration, and vessel registration fees. For FY 2009-10, the proposed appropriation for AQIP projects is \$42.3 million based on the Governor's January 2009 Proposed Budget. AB 118 lists 8 broad project types which are eligible for AQIP funding:

- On- and off-road equipment projects.
- Projects to mitigate off-road gasoline exhaust and evaporative emissions.
- Research on the air quality impact of alternative fuels.
- University of California research to increase sustainable biofuels production and improve collection of biomass feedstock.
- Lawn and garden equipment replacement.
- Medium- and heavy-duty vehicle/equipment projects including lower emission school buses, electric or hybrid vehicles/equipment, and regional air quality programs in the most impacted parts of California.
- Workforce training related to advanced technology to reduce air pollution.
- Projects to identify and reduce emissions from high-emitting light-duty vehicles.

Statute provides that funding be awarded in the form of competitive grants, revolving loans, loan guarantees, loans, and other appropriate funding measures that further the purposes of the program. Statute also directs ARB to evaluate potential projects based on potential reduction of criteria or toxic air pollutants, cost-effectiveness, contribution to regional air quality improvement, and ability to promote the use of clean alternative fuels and vehicle technologies.

B. Implementation of the AQIP

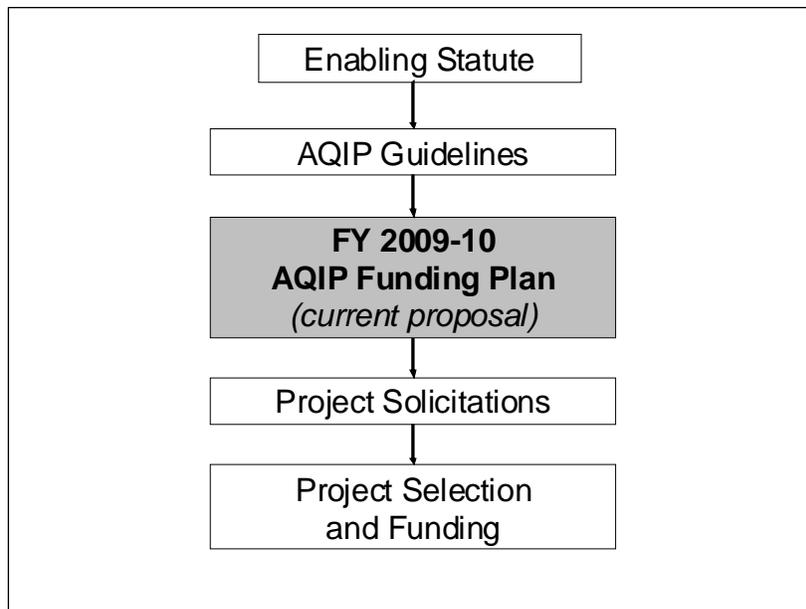
The proposed FY 2009-10 Funding Plan is one of the four documents that direct ARB's implementation of the program. Each of these components is described briefly below. An implementation flow chart is shown in Figure I-1.

- Enabling Statute (HSC Sections 44270, 44271, and 44274): AB 118 creates the AQIP and establishes the overall framework for the program, identifying the program's purpose, statutory limitations, potentially eligible source categories, and funding mechanisms. AB 109 (Statutes of 2008, Chapter 313) refines the requirements established in AB 118.
- AQIP Guidelines: The AQIP Guidelines are regulations that define the overall policies and procedures for program implementation based on the framework established in statute, setting minimum administrative and implementation requirements. ARB staff has released the proposed AQIP Guidelines for consideration by the Board at the April 2009 Board meeting alongside the proposed FY 2009-10 Funding Plan. In addition, the AB 118 Air Quality

Guidelines, adopted by the Board in September 2008, establish requirements to ensure the AQIP complements California's existing air quality programs.

- **Funding Plan:** The Funding Plan is each year's blueprint for expending AQIP funds appropriated to the ARB in the annual State budget. The Funding Plan will describe the projects ARB intends to fund, establish funding targets for each project, and provide the justification for these decisions. The Funding Plan will be updated and brought to the Board for its consideration annually and will be developed in accordance with requirements established in the AQIP Guidelines.
- **Project Solicitations:** ARB will issue project solicitations for each of the projects in the Board-approved Funding Plan. These solicitations will include all the programmatic details potential grantees need to apply for funds. The solicitations will also describe the criteria upon which applications will be evaluated and projects selected for funding. The proposed timeline for FY 2009-10 project solicitations is discussed further in Chapter V.

Figure I-1: AQIP Development and Implementation Flow Chart



C. Other Air Quality Incentive Programs

The AQIP will complement California's existing portfolio of incentive programs. ARB plans to implement the AQIP in a coordinated manner with these programs, focusing AQIP funding in areas that do not already have a significant source of incentive funding. These other programs include:

- The **Carl Moyer Program**, run by ARB and local air districts, provides about \$140 million annually to reduce smog forming and toxic particulate matter emissions primarily from diesel trucks, off-road equipment, agricultural pumps,

marine vessels, and locomotives. The program provides grants for the voluntary purchase of cleaner-than-required engines, equipment, and certified or verified emission reduction technologies. The Carl Moyer Program is supplemented by DMV fees which go directly to air districts for analogous clean air programs.

- The Proposition 1B Goods Movement Emission Reduction Program provides \$1 billion over the next several years to reduce emissions from freight movement through the state's four major trade corridors. ARB has awarded the first \$250 million to projects, and is in the process of awarding the second \$250 million installment. About 75 percent of the \$1 billion will be directed to clean up diesel trucks at the ports and in other freight hauling occupations. The remaining funds are for cleaner locomotives, commercial harborcraft, and cargo handling equipment and to provide shore power for cargo ships in port.
- The Lower-Emission School Bus Program helps school districts replace or retrofit their oldest buses to reduce toxic diesel pollution and improve safety. The Proposition 1B bond provides \$200 million for the Lower-Emission School Bus Program.
- In addition to creating the AQIP, AB 118 provides about \$30 million a year to expand the Bureau of Automotive Repair's (BAR) car scrap program, creating the Enhanced Fleet Modernization Program. This program will complement BAR's Consumer Assistance Program and will help meet a commitment in the 2007 California SIP to reduce smog forming emissions from passenger cars and light-trucks via voluntary vehicle retirement.
- The Alternative and Renewable Fuel and Vehicle Technology Program, created by AB 118, provides up to \$120 million annually to the California Energy Commission (Energy Commission) for alternative and renewable fuels, fueling infrastructure, clean vehicles, and workforce training to help meet California's climate change goals. The Energy Commission has \$75 million for the program in FY 2008-09 and \$101 million in the proposed FY 2009-10 State Budget.

D. Coordination with AB 118 Alternative and Renewable Fuel and Vehicle Technology Program

Although the Energy Commission's Alternative and Renewable Fuel and Vehicle Technology Program focuses on greenhouse gas reductions and the AQIP focuses on criteria pollutant and toxics reductions, there is overlap between the vehicle projects that can be funded in each program because some technologies achieve both greenhouse gas and criteria pollutant reductions. For example, the AB 118 statute lists hybrid vehicles as eligible categories in both programs. ARB and Energy Commission are coordinating on source categories where potential overlap exists and have also discussed the possibility of joint funding projects in future years in cases where demand exceeds each agency's available funding.

ARB staff is proposing \$25 million for hybrid truck and bus vouchers as the cornerstone of the FY 2009-10 Funding Plan. The Energy Commission has also signaled its interest in funding hybrid vehicles in its December 2008 draft Investment Plan for the Alternative and Renewable Fuel and Vehicle Technology Program (Investment Plan). To complement ARB's hybrid vehicle voucher project, the Energy Commission has discussed focusing its initial funding on demonstration of advanced and/or alternative fueled hybrid vehicles not yet ready for deployment.

The two agencies are also coordinating on light-duty vehicle projects. ARB staff is proposing zero-emission and plug-in hybrid light-duty vehicle rebates in the proposed FY 2009-10 Funding Plan. In its draft Investment Plan and subsequent public workshops, Energy Commission staff has discussed using its initial funding on rebates for natural gas or propane vehicles as a way to complement ARB's proposed vehicle rebate program.

Advanced technology workforce training is another area that can be funded under both programs. Because the Energy Commission plans a significant investment in workforce training, ARB staff plans to have the Energy Commission take the lead at this time. ARB would complement these efforts with additional funding in future years as needed.

ARB and Energy Commission coordination extends beyond funding. For example, infrastructure projects can only be funded through the Energy Commission's program. Statute does not authorize the AQIP to fund infrastructure. However, development and deployment of hydrogen and electric vehicle fueling infrastructure continues to be a priority for ARB and an integral part of ensuring the success of ARB's Zero Emission Vehicle program. As such, ARB staff is providing the Energy Commission input and support in assessing and prioritizing fueling infrastructure needs to be funded by the Energy Commission.

The California Fuel Cell Partnership estimates that about 700 fuel cell vehicles will be introduced by the end of 2011. The fuel cell vehicle population is projected to grow to thousands by 2014 and tens of thousands by 2017. To support the initial phase of this vehicle deployment, at least 10 new hydrogen fueling stations a year will be needed in California through 2012. The California Fuel Cell Partnership has identified a need of about \$40 million in public funding over the next two years to support hydrogen fueling infrastructure, with additional funding in the out years.

E. Coordination with Federal Incentive Programs

ARB staff will also coordinate AQIP implementation with federal air quality incentive programs. Until recently, federal funding for air quality incentives has been quite small compared to the funding available at the State level. However, with the federal stimulus package (the American Recovery and Reinvestment Act of 2009), new air quality funding from the federal government will be available. ARB is closely following the emerging details on these new programs and will actively pursue funding for California

in partnership with the Energy Commission, other State agencies, and local agencies. These programs are being rolled out quickly, with proposals due this spring.

California should be well positioned to compete for federal funding with the State's demonstrated experience implementing large-scale air quality incentive programs. Staff will evaluate how to best coordinate AQIP funding and other existing ARB incentive funding with these federal programs. AQIP funding may serve as a match to obtain federal funds to augment California's program, or there may be opportunities to fold federal funding into an established State program. AQIP projects will be designed to allow the most flexibility to leverage any available federal funding.

Under the Department of Energy Clean Cities solicitation for the Transportation Sector Petroleum Reduction Technologies Program, \$300 million is available in four areas:

- Refueling infrastructure for alternative fuels.
- Incremental costs of dedicated alternative fuel vehicles.
- Education and outreach for petroleum reduction fuels and technologies.
- Alternative fuel and advanced technology vehicles pilot grants.

U.S. Environmental Protection Agency (U.S. EPA) also has incentive funding available in the stimulus package under its Diesel Emissions Reduction Act (DERA) program. These include:

- \$156 million for the National Clean Diesel Funding Assistance Program.
- \$88 million for the State Clean Diesel Grant Program to support states' clean diesel grant and loan programs.
- \$30 million for the SmartWay Clean Diesel Finance Program to support the creation of innovative national, state, or local clean diesel financing programs.
- \$20 million for the National Clean Diesel Emerging Technology Program to support the use, development and commercialization of emerging technologies

F. Status of Air Quality Loan Program for Trucks

As part of the FY 2008-09 State Budget, the Legislature directed that FY 2008-09 AQIP funds be used for a new ARB Truck Loan Program to assist truckers affected by the two ARB regulations adopted in December 2008 – the Statewide In-Use Truck and Bus Regulation and the Heavy-Duty Vehicle Greenhouse Gas Emission Reduction Measure. About \$42 million is available for this program which supplements ARB's existing grant incentive programs. Loans will be available for the purchase of new or used trucks, diesel emission control devices, and U.S. EPA SmartWay technologies.

ARB's Truck Loan Program includes two distinct, but complementary components, which are summarized below. Both are designed to leverage State dollars to maximize funding opportunities and to provide credit access to truckers, so they can take early action in upgrading their fleets. The program will be rolled out this spring with loan opportunities for truckers becoming available over the next several months.

California Capital Access Program (CalCAP) Air Quality Loan Guarantee Program

The first component is a loan guarantee program developed in partnership with the California Pollution Control Financing Authority (CPCFA) within the State Treasurer's Office. This program, tailored to meet the specific needs of the trucking sector, builds on the CPCFA's successful CalCAP.

The CalCAP is a form of loan insurance that provides up to 100 percent coverage on loan defaults. Through CalCAP's Independent Contributor Program, ARB will contribute 14 percent of the loan principal on each qualified trucking loan to a lender's loan loss reserve account (similar to a savings account). As a lender enrolls more loans in the program, its loan loss reserve account grows, thereby reducing its financial risk if one of the loans defaults. With a historically low default rate, CalCAP's loan guarantees provide a stable financing structure that enables lenders to provide competitive rate loans to small trucking fleets that fall just outside conventional underwriting standards.

Truck owners participating in the loan guarantee program may also use available grant funds, such as Carl Moyer Program grants, as down payments to achieve better loan rates and terms. While each lender determines the interest rate for the loans it offers, ARB staff expects CalCAP lenders will offer interest rates in the range of 8 to 12 percent to qualified truckers. The CalCAP provides a proven program structure that is already in place to meet the demands for affordable financing in the trucking sector.

Participants generally access CalCAP directly through participating lenders. However, ARB is conducting significant outreach to bring together lenders and truck dealers. This will allow truck owners to access this loan guarantee program through their local truck dealer. Loans will be available to truckers on a first-come, first-served basis starting in Spring 2009. About 60 financial institutions already participate in CalCAP.

Alternative Air Quality Loan Program

The second component of ARB's Truck Loan Program would supplement the larger air quality loan guarantee program. ARB is targeting up to \$10 million to implement an alternative mechanism, in addition to loan guarantees, for financing the cost to purchase vehicles or emission controls to meet the two new truck regulations. This would expand the available financing tools, thereby increasing financing opportunities for truckers. Potential alternative mechanisms include, but are not limited to, vehicle lease-to-own programs and direct loans to eligible truckers. The alternative financing mechanisms must leverage ARB funds at a ratio of at least 7:1 to maximize State funding. ARB expects to issue a solicitation in March 2009 for this component and will award the projects later in Spring 2009. Financing opportunities through this component of ARB's Truck Loan Program will be available to truckers starting in mid 2009.

Continuing the Truck Loan Program Beyond FY 2008-09

ARB staff expects that the Truck Loan Program's initial \$42 million funding will carry this program through its first year. However, staff will monitor the progress of the Truck Loan Program over its first year and seek to identify a continuing funding source as necessary. ARB staff will coordinate with participating lenders, the regulated community, and other interested stakeholders to refine the Truck Loan Program. Potential ongoing funding for the program through the AQIP is discussed further in Chapter V, including proposed contingency provisions to grant ARB's Executive Officer with the authority to designate a portion of the FY 2009-10 AQIP funds to the Truck Loan Program should demand warrant it.

II. Guiding Principles for Identifying AQIP Projects

This chapter describes the implementation priorities and guiding principles that ARB staff used to identify the projects proposed for funding in FY 2009-10. ARB staff presented these proposed priorities and guiding principles for public comment at public workshops held in August 2008, November 2008, and February 2009.

A. Implementation Priorities

For FY 2009-10, staff proposes to direct AQIP funds to project types that are not being covered in ARB's other incentive programs. Staff proposes the program focus on accelerating commercialization of advanced technologies needed to meet California's longer-term, post 2020 SIP goals. This area is not particularly well served in the Carl Moyer Program, Goods Movement Emission Reduction Program, or Lower-Emission School Bus Program which focus on achieving the most cost-effective near-term emission reductions from already commercialized technologies. Although these programs continue to be oversubscribed and ARB could direct AQIP funds to address the excess demand, staff believes a better use of the AQIP is to target California's air quality priorities that are not served by ARB's other incentive programs.

The federal Clean Air Act includes a provision that allows SIPs for areas with the worst air quality (the extreme ozone nonattainment areas – the South Coast and San Joaquin Valley) to rely on advanced, yet to be developed, technologies. California's long-term SIP strategy is colloquially known as the "black box" commitment. Investing now in the next generation of vehicles, equipment, and emission controls is essential if California hopes to meet this commitment. The AQIP is unique compared to ARB's other incentive programs in its ability to fund these more forward looking technologies.

The AB 118 statute allows for a broad range of eligible AQIP project categories. (See Chapter I, Section A for the complete list.) Staff classifies potential projects into three general categories:

- Deployment projects include the next generation of advanced technology vehicles and equipment just reaching commercialization. These vehicles/equipment are typically available through ordinary dealerships. However, incentives are needed because these vehicles/equipment generally cost more than other models on the market. Significant incentives, such as those proposed this year for hybrid trucks and buses, will reduce production costs so the technologies become more cost competitive, accelerate technology transfer to other sectors, and accelerate consumer acceptance.

ARB staff proposes directing the bulk of AQIP funding towards on-the-ground vehicle and equipment deployments that provide an immediate emission reduction benefit. For FY 2009-10, about 80 percent of the available funds would be directed to deployment projects based on the proposed funding allocations in Chapter III and IV.

- Demonstration projects include the next generation of advanced technology vehicles, equipment, or emission controls which have not yet reached the commercialization stage of development. AQIP funding would be used to demonstrate the viability of a new technology, accelerating it along the path towards commercialization and full-scale deployment.

Staff set a general target of directing 10-30 percent of AQIP funds for demonstration projects. For FY 2009-10, about 20 percent of the available funds would be directed to demonstration projects.

- Research and workforce training. Statute also includes several eligible project categories that do not directly reduce emissions, including research on the air quality impacts of alternative fuels, research to increase biofuels production, and workforce training relating to advanced technologies. These areas will provide the information and training needed to help California develop the next generation of the fuels and vehicles to most effectively reduce air pollution.

Staff set a general target of directing up to 10 percent of AQIP funds for research and workforce training projects. For FY 2009-10, ARB staff is not proposing funding in this category for reasons described later in this chapter. However, staff expects to propose funding in future years.

B. Deployment Projects

Staff used the following guiding principles for selecting eligible vehicle and equipment deployment projects for FY 2009-10:

- Attain Ambient Air Quality Standards: Projects should help California meet federal ambient air quality standards by spurring deployment of technologies to meet the SIP advanced technology (“black box”) commitments. This is the overarching implementation priority for FY 2009-10. Early deployment is critical to ensure significant technology penetration by the 2024 extreme ozone nonattainment area attainment date. Projects should also help achieve the state air quality standards, reduce toxic air contaminant emissions, and complement California’s efforts to meet its climate change goals.
- Ready for Deployment: Projects should be ready for immediate on-the-ground deployment. Technologies that could help meet SIP “black box” commitments but which are not ready for deployment would be considered for funding as demonstration projects.
- Modify Consumer Choice: Incentives should be focused on inducing vehicle and equipment purchases that would not otherwise have occurred.
- Consider Funding Need: Project types that do not have access to other ARB incentive program funds, such as Carl Moyer Program and Goods Movement

Emission Reduction Program funds, would be prioritized. Projects should also not overlap with those AB 118 projects being funded by the Energy Commission.

A number of categories emerge as meeting all four of the guiding principles: medium and heavy duty hybrid vehicles; light-duty zero emission vehicles; and zero-emission lawn and garden equipment. Each of these categories is proposed for funding, as described in Chapters III and IV. In general, the zero-or near zero emission off-road equipment category, other than lawn and garden equipment, does not meet the “ready for deployment” criterion. However, staff identified a sub-category – off-road all-terrain utility vehicles used in agricultural or other work applications – where zero-emission equipment is just hitting the market, so this-sub category is also proposed for funding.

Categories not meeting the “ready for deployment” criterion were further evaluated for funding as demonstration projects to help move them closer to deployment as discussed below.

C. Advanced Technology Demonstration Projects

ARB’s goal in funding demonstration projects under the AQIP is to help accelerate the next generation of advanced technology vehicles, equipment, or emission controls which have not yet reached the commercialization stage of development. AQIP funding would be used to demonstrate the viability of a new technology. Staff proposes to focus funding on technologies with potential to provide cost-effective emission reductions which would be quickly brought to the California marketplace. While the focus is accelerating technologies which provide criteria pollutant and toxic emission reductions, staff will also look to fund projects with ancillary greenhouse gas emission reductions where possible. Staff used the following guiding principles for selecting demonstration projects for FY 2009-10:

- The project must be able to demonstrate the potential to provide cost-effective emission reductions.
- The project must be near commercialization with potential to be economically viable in its own right.
- The project must be completed expeditiously, with potential deployment into the market place within 3 years following demonstration.
- The project must have the potential for use in the California marketplace.

For FY 2009-10, ARB staff proposes to focus demonstration project funding primarily in the off-road categories because the majority of ARB’s proposed investment in deployment projects is directed to on-road vehicles. Projects are proposed in the locomotive, marine, agricultural, and other off-road sectors. By funding off-road demonstration projects now, ARB staff envisions that there will be greater opportunity to fund advanced technology off-road deployment projects in the future years. In addition,

ARB staff is coordinating demonstration project funding with the Energy Commission's AB 118 program and is proposing that ARB focus its FY 2009-10 AQIP funds to pay for off-road demonstration projects, thus allowing the Energy Commission to take the lead in funding on-road demonstration projects. Staff will continue to work closely with the Energy Commission to coordinate its AB118 efforts in order to minimize duplication and confusion to potential project applicants. The demonstration projects proposed for funding are described in Chapter IV, Section E.

D. Other Project Categories

Not all of the eight eligible project categories identified in statute are proposed for funding in FY 2009-10. Staff is not proposing funding in the following areas: research on the air quality impacts of alternative fuels and on biofuels production; workforce training; and projects to identify and reduce emissions from high-emitting light-duty vehicles. This section describes staff's rationale for deferring funding for these eligible categories until future years. Staff expects that all of the eight categories will ultimately receive funding over the course of program implementation through 2015.

Research on the air quality impacts of alternative fuels and on biofuels production: A considerable amount of research on the air quality impacts of alternative fuels is ongoing in part to support the ARB's development of the proposed Low Carbon Fuel Standard (LCFS). In addition, the Energy Commission staff has recommended funding in this area in its draft Investment Plan for the Alternative and Renewable Fuel and Vehicle Technology Program. ARB staff is proposing to defer AQIP funding until after the LCFS rulemaking is complete and remaining data gaps and information needs can be more methodically evaluated. ARB will coordinate any future research funding via the AQIP with efforts being funded through the Energy Commission's program.

Workforce training: The Energy Commission staff has recommended significant funding for workforce training initiatives in its draft Investment Plan. Because the Energy Commission is planning to invest in this area, ARB staff is proposing to defer AQIP funding for this project category at this time. ARB will coordinate with the Energy Commission on its workforce training initiative reevaluate whether AQIP funds should be directed to this category in the FY 2010-11 Funding Plan.

Projects to identify and reduce emissions from high-emitting light-duty vehicles: In addition to creating the AQIP, AB 118 provides about \$30 million a year to expand the BAR's car scrap program. With the investment of an additional \$30 million to scrap high-emitting vehicles, ARB staff is proposing to defer AQIP funding for this project category at this time. Once BAR's new Enhanced Fleet Modernization Program is up and running, ARB staff will reevaluate whether AQIP funds should be directed to this category to fill niches not addressed through BAR's car scrap and repair programs.

III. Summary Proposed Funding Categories for FY 2009-10

A. Proposed Projects

ARB staff proposes focusing AQIP funds on a few key projects rather than providing a small amount of funding across many categories in this first year of the program. By taking this approach, staff expects the AQIP funds will have a larger impact in helping advance the technologies selected for funding. Furthermore, the first year of implementation is often the most challenging when a new program is being developed. Taking a more focused approach maximizes the likelihood for success in this first year.

Table III-1 identifies staff's recommended projects and associated funding levels for the proposed FY 2009-10 Funding Plan. These proposed projects are described in more detail in Chapter IV. Vehicle and equipment deployment project recommendations are based on the guiding principles described in Chapter II, with a focus on technologies that can achieve the most significant emission reductions in the post-2020 timeframe. Proposed funding for each project is based upon expected availability of the technology, manufacturers' ability to ramp up production, and potential consumer demand. Proposed vehicle and equipment funding levels generally reflect staff's evaluation of the minimum incentive needed to make the case for the clean technology purchase. For example, the hybrid truck and bus vehicle voucher amounts reflect about half the difference in cost between a hybrid truck or bus and its non-hybrid counterpart.

Recommended advanced technology demonstration projects were selected based upon the demonstration project guiding principles described in Chapter II and discussions with technology manufacturers, fleet operators, local air districts, and other interested stakeholders at AQIP workshops and work group meetings. In addition to the 4 public workshops on the development of the AQIP program, ARB staff held 12 work group meetings focused specifically on identifying potential demonstration projects. Recommended funding for demonstration projects is based upon the expected resources needed to demonstrate the most promising technologies in the locomotive, marine vessel, off-road equipment, agricultural equipment, and transit/school bus arenas.

Table III-1: Projects Proposed for AQIP Funding in FY2009-10

Project Description	Funding Target (in millions)
Deployment/Commercialization Projects	
Hybrid Truck and Bus Voucher Incentive Project	\$25
Zero-Emission Vehicle and Plug-In Hybrid Light-Duty Vehicle Rebate Project	\$5
Lawn and Garden Equipment Replacement Project	\$2
Zero-Emission All-Terrain Agricultural Work Vehicle Rebate Project	\$1.3
Advanced Technology Demonstration Projects	
Locomotives	\$2
Marine Vessels	\$1
Transit and School Buses	\$3
Off-Road Equipment	\$2
Agricultural Equipment	\$1
TOTAL PROPOSED FUNDING	\$42.3*

*Available funding based on the proposed FY 2009-10 State Budget. Funding amounts will be adjusted proportionally if the final FY 2009-10 Budget contains a different appropriation for the AQIP.

B. Program Benefits

New cars, trucks, and equipment are already extremely low-emitting due to the success of ARB regulations and technology advances. However, California's air quality challenges require the development and widespread deployment of even cleaner zero- and near-zero emission technologies. This funding plan is a down-payment on the next generation of technologies California needs to meet its post-2020 SIP and climate change goals.

Most of the plan's emission benefits accrue not from the vehicles that are directly funded but less quantifiable ancillary long-term impacts from accelerating technology deployment. These ancillary program benefits accrue from the following three areas:

- **Reduce Production Costs:** The clean vehicles and equipment in the proposed FY 2009-10 Funding Plan typically cost more than their more traditional counterparts, in part because of initial low production volumes. These voucher and rebate programs would help these technologies transition from prototype and small scale production to assembly line production, thereby reducing vehicle costs. These programs also send a signal to manufacturers that California's investment in these types of technologies will pay dividends. By accelerating sales of these technologies, AQIP incentives will help drive down production cost and help these vehicles and equipment types become more cost-competitive. Staff expects that as volumes increase and costs decline over time for many of these vehicle and equipment types, so will the need for incentives.
- **Accelerate Technology Transfer:** The zero-emission and hybrid technology projects identified in this plan reflect the specific types of vehicles and equipment where

these technologies have been applied thus far. By sparking production and sale of this technology, the AQIP will help accelerate the rate of technology transfer to other applications, such as off-road equipment and marine vessels.

- Accelerate Consumer Acceptance: One of the barriers to commercialization of these advanced technologies is consumer reluctance to invest in unfamiliar vehicles or equipment. As more Californians experience these technologies, they will become de-stigmatized and more acceptable as a purchase choice.

The AQIP has a different focus than the Carl Moyer Program and the Goods Movement Emission Reduction Program, whose main objective is achieving near-term emission reductions with the ancillary benefit of technology advancement. ARB's objective for the AQIP is long-term emission reductions through technology advancement with the ancillary benefit of achieving some near-term emission reductions.

The vehicles and equipment directly funded by this funding plan will achieve less than one ton per day of criteria pollutant emission reductions. However, the large-scale penetration of these advanced technologies will have substantial additional long-term air quality benefits. If ten percent of trucks and buses were hybrids in 2020, NO_x would be reduced by 13 tons per day. Rebates for purchase of ZEVs would help support implementation of California's ZEV mandate and ensure achievement of the emission reductions associated with this groundbreaking regulation. Likewise, staff's proposed lawn and garden equipment and agricultural ATVs incentives would be a down-payment on bringing emissions from these sectors closer to zero.

Other Program Benefits

The proposed vehicle and equipment deployment projects would also help California meet its climate change goals, reduce the state's dependence on foreign oil, and provide an economic stimulus for California. The advanced technologies identified in this plan are central to helping California meet its goal of reducing greenhouse gas emissions to 1990 levels by 2020 and 80 percent by 2050. Because of the time it takes to effect fleet turnover, California must begin transitioning to these advanced technologies now to meet this 2050 goal. The hybrid truck and bus incentives would help achieve or surpass the 0.5 million metric tons carbon dioxide emission reductions in 2020 from ARB's Climate Change Scoping Plan's Medium- and Heavy-Duty Vehicle Hybridization measure.¹ This funding plan would also help reduce California's dependence on foreign oil by supporting the transition to vehicles and equipment that use electricity and operate more efficiently.

Finally, staff's recommendations would provide an economic stimulus for California. By accelerating these advanced technologies' development and deployment, the AQIP helps position California for green job growth over the next several decades. The AQIP would increase fleets' experience with tomorrow's hybrid and electric vehicle

¹ ARB, Climate Change Scoping Plan, December 11, 2008; www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm

technologies, provide a boost to California-based production facilities of zero-emission passenger car and motorcycle manufacturers, and stimulate the market for the next generation of workers needed to maintain and support these new vehicles. As mentioned in Chapter II, staff is also evaluating how AQIP projects could be used to leverage or match additional air quality funds for California from the Federal Recovery and Investment Act.

Environmental Justice

ARB is committed to ensuring that its incentive programs are developed and implemented in a way that is equitable, transparent, and protective of all Californians regardless of their race, culture, or income. While the proposed FY 2009-10 Funding Plan does not mandate that funding be allocated or expended based upon environmental justice (EJ) criteria, a significant portion of the AQIPs benefits will likely occur in EJ areas. Staff expects emission reductions from the Hybrid Truck and Bus Voucher Incentive Program (HVIP) – which represent \$25 million of this \$42.3 million Funding Plan – will be focused in California’s urban communities since most hybrid trucks and buses available today are high-idling, stop-and-go delivery, work, or passenger vehicles. While the HVIP is a first-come, first-served program, outreach will be focused in the South Coast and San Joaquin Air Basins because of their “extreme” federal 8-hour ozone non-attainment status. The lawn and garden replacement program funding will also target those air districts with the worst air quality.

The proposed FY 2009-10 Funding Plan includes \$3 million to demonstrate locomotive and marine vessel technologies that could help reduce emissions at rail yards and ports and the surrounding communities. The AQIP also includes \$3 million to demonstrate the next generation of transit and school bus technologies that will help reduce emissions in urban areas and children’s exposure to air toxics.

IV. Description of Proposed Funding Categories

This chapter provides staff's recommendations for FY 2009-10 Funding Plan projects and maximum project funding amounts. Additional details, including a Question and Answer section for each project, can be found in Appendices A through E.

Project Implementation

ARB will select a public agency, non-profit organization, or other qualified entity via a competitive solicitation to implement each of the projects in the proposed FY 2009-10 Funding Plan. The project solicitations will provide the detailed vehicle and equipment eligibility and project outreach, oversight, and administrative requirements which the implementing agency must follow for vehicle and equipment deployment projects. It will be the implementing agency's responsibility to comply with all project requirements in implementing demonstration projects and distributing project funds to eligible vehicle and equipment purchasers.

For voucher and rebate projects, ARB may advance the implementing agency up to ten percent of project funding at project inception, and adequate additional funds on a set schedule as needed to efficiently pay off redeemed consumer vouchers and rebates. This approach would save up to two months in reimbursing each vehicle/equipment purchase by allowing the administering agency to pay off a voucher/rebate from its existing account, rather than having to submit each voucher request to ARB. Specific fund disbursement criteria for all projects will be included in the project solicitations and grant agreements with the implementing agencies. Additional requirements for AQIP projects and grantees can be found in the Proposed Air Quality Improvement Program Guidelines to be considered by the Board at the April 23-24, 2009 Board hearing.

A. Hybrid Truck and Bus Voucher Incentive Project (HVIP)
Proposed Funding: \$25 million

Overview

Hybrid medium- and heavy-duty vehicle technology can significantly reduce criteria pollutant, air toxic and greenhouse gas emissions – particularly in refuse trucks, work trucks, delivery vans, urban buses, and other vehicles with high stop-and-go or idling duty cycles. Hybrid vehicles can also provide significant fuel economy benefits and fuel cost savings relative to their non-hybrid counterparts.

Hybrid trucks and buses are now on the market in multiple vehicle configurations and classes. Technology and production capacity for these vehicles has reached a stage of significant growth potential, but low initial production volumes mean today's typical hybrid vehicle costs \$30,000 to \$80,000 more than its non-hybrid counterpart (depending upon vehicle size and configuration). This incremental cost is generally too high to justify the vehicle's purchase based on fuel economy benefits alone.

The timing is right for a large and carefully-crafted hybrid truck and bus voucher project to accelerate the immediate commercialization of these vehicles. Such a program would also have significant multiplier benefits. As more vehicles are produced, production costs and sales price should decline to the point where hybrid trucks and buses are cost-competitive with their non-hybrid counterparts (when fuel economy benefits are considered), ultimately eliminating the need for incentives. Incentives for new vehicle purchases would also accelerate the development and commercialization of cleaner and more efficient hybrid vehicles, and hybrids in less traditional applications, such as off-road equipment, marine vessels, and locomotives.

An incentive program would also help pave the way for the medium- and heavy-duty hybridization measure identified in ARB's Climate Change Scoping Plan.² While the Climate Change Scoping Plan does not yet have an adoption or implementation date for this measure, near-term incentives could help accelerate the emission reductions achieved from this sector and increase the feasibility of an eventual mandatory measure. Over 1,200 hybrid trucks are on the road nationally – in part because of incentive programs in New York, Michigan and other states – while less than 50 have been sold in California.³

Project Funding

Staff is proposing a \$25 million hybrid truck and bus voucher project as the cornerstone of the proposed FY 2009-10 Funding Plan. This funding would accelerate the deployment of approximately the first thousand vehicles in California. The proposed

² ARB, Climate Change Scoping Plan, December 11, 2008; www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm

³ Totals do not include hybrid transit buses, which have entered the market in larger numbers due in part to Federal Transit Association subsidies.

HVIP is structured to be as straightforward and accessible as possible in order to facilitate purchaser and dealer participation and most effectively jump start the hybrid truck and bus market.

Hybrid trucks and buses are also eligible for a federal tax credit of between \$3,000 and \$12,000, based upon the vehicle's fuel economy benefits.⁴ However, these credits are not available for public fleets and may be insufficient to significantly alter consumers purchase decisions. Vehicles receiving the federal tax incentive could also receive an HVIP rebate. Local air districts or other public agencies could also augment the HVIP rebate to further buy-down the incremental cost of these vehicles in their regions.

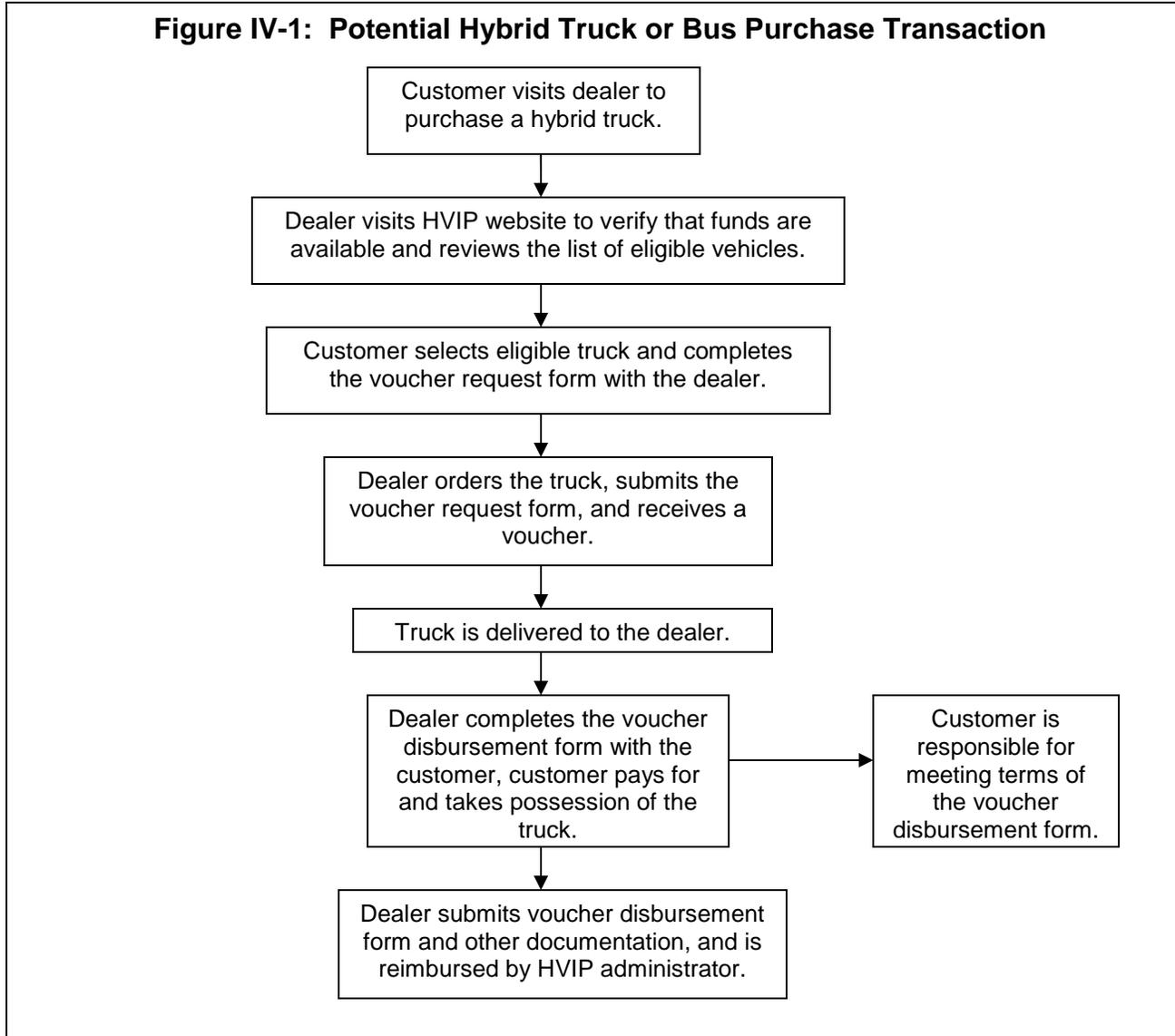
Project Structure

Figure IV-1 describes a hypothetical truck dealer sale and voucher reimbursement transaction to illustrate how the HVIP will be implemented. The HVIP would enable the buyer of an eligible hybrid truck or bus to receive a voucher for the incentive amount, which would be redeemable at the time of the vehicle delivery and purchase.

The HVIP website will include a list of eligible hybrid trucks and buses, as well as the eligible voucher amount for each vehicle. The webpage will include a voucher request form for the dealer (in concert with the purchaser) to submit at the time a specific vehicle is ordered, with the voucher to be redeemable at the time the vehicle is delivered. A similar structure would also apply for vehicles which are ordered directly from a hybrid truck manufacturer or a truck equipment manufacturer.

⁴ Credit for New Qualified Alternative Motor Vehicles, Internal Revenue Service Bulletin 2006-06; www.irs.gov/irb/2006-26_IRB/ar13.html

Figure IV-1: Potential Hybrid Truck or Bus Purchase Transaction



Vehicle Incentive Amounts

Hybrid vehicles would be eligible for the funding amounts identified in Table IV-1. These voucher amounts correspond to approximately one-half of the incremental cost of a hybrid truck or bus. Staff believes this is the appropriate voucher amount needed to make the business case for purchase of a hybrid truck or bus.

Table IV-1: Staff Recommended Hybrid Vehicle Incentive Amounts

Vehicle Weight	Base Vehicle Incentive ¹	Additional Incentive for ARB Vehicle Certification
10,001 – 14,000 lbs.	\$10,000	
14,001 – 26,000 lbs.	\$20,000	\$5,000
26,001 – 33,000 lbs.	\$25,000	
> 33,000 lbs.	\$35,000	

¹The first HVIP-eligible hybrid truck or bus purchased by any fleet would also be eligible for an additional \$5,000 voucher.

Staff proposes that an additional \$5,000 per vehicle incentive be provided to ARB-certified hybrid heavy-duty vehicles (i.e. vehicles above 14,000 lbs., as shown in Table IV-1), since their criteria pollutant emission reductions will have been verified, and these vehicles will have met ARB durability requirements. This flexible approach is needed to ensure availability of eligible vehicles that achieve real emission reductions in the project’s first year while encouraging voluntary vehicle certification. If the HVIP continues to receive AQIP funding in FY 2010-11, staff expects to recommend that only ARB-certified trucks and buses be eligible for project funds as part of the FY 2010-11 Funding Plan. Hybrid medium-duty vehicles (weighing between 10,000 and 14,000 lbs.) must be ARB-certified to be sold in California, so staff is not recommending an additional \$5,000 incentive for certified medium-duty vehicles. More information regarding the ARB certification of hybrid trucks and buses can be found in Appendix A.

To further encourage participation by small fleets, staff is also recommending the first HVIP-eligible hybrid truck or bus purchased by any fleet receive an additional \$5,000 voucher.⁵ For example, a truck owner-operator purchasing just one truck would be eligible for an additional \$5,000 voucher for that vehicle, while a larger fleet buying several trucks would also receive one \$5,000 voucher for the first vehicle purchased. Staff believes this approach will encourage purchase and acceptance of hybrids across more fleets and ultimately help the market for these vehicles grow. Since these vehicles’ emission reductions are closely tied to how they are driven, vehicles in smaller fleets (where the owner has “bought into” the vehicle purchase) also have the potential for more air quality benefits than those in larger fleets where drivers may rotate between hybrid and non-hybrid trucks. To ensure that funds are not monopolized by a single fleet, staff is also recommending that no entity be eligible to receive more than 100 hybrid vehicle vouchers.

Qualifying Vehicles

Dozens of hybrid truck and bus configurations from Freightliner Custom Chassis Corporation, International Truck and Engine Corporation, Kenworth Truck Company, Peterbilt Engine Corporation, and other manufacturers are available today. These vehicles can be found in both public and private fleets and functions as varied as

⁵ For the purposes of the HVIP, all vehicles under the fiduciary control of a project participant are considered part of the same fleet. Additional guidance regarding this concept will be provided as part of the HVIP solicitation.

beverage and package delivery vehicles, utility vehicles, work vehicles, refuse trucks, school and transit buses, and line-haul trucks.

ARB staff is proposing that for the FY 2009-10 Funding Plan, hybrid trucks and buses eligible for the federal hybrid medium- and heavy-duty vehicle tax credit be eligible for the HVIP, if the vehicle meets additional ARB requirements (described in Appendix A) to ensure the California-certified engine and after-treatment devices shall continue to function as required. A vehicle must also draw propulsion energy from onboard sources of stored energy that are both an internal combustion or heat engine using consumable fuel, and a rechargeable energy storage system.

Additional Eligibility Criteria

To be eligible for a voucher, staff recommends the following hybrid vehicle and purchaser requirements:

1. The vehicle must have a gross vehicle weight rating (GVWR) of at least 10,000 pounds, and must be a commercial or public fleet vehicle.
2. The chassis must be titled and licensed in California, and the vehicle must be California-registered.
3. The purchaser must be: a) a California-based business, non-profit, or government entity, or b) a business, non-profit, or government entity operating in California for at least two years prior to the vehicle purchase order.
4. The purchaser must commit to keep the new vehicle for at least five years after the vehicle delivery date.
5. One-hundred percent of the vehicle's operation must occur within California for at least three years after the vehicle delivery date.

Additional hybrid vehicle and participant requirements may be included in the HVIP solicitation.

Project Solicitation

ARB will issue an HVIP solicitation to select an entity to implement the HVIP. The HVIP solicitation would be open individuals, federal, state, or local government entities or agencies, and organizations with California heavy-duty vehicle, vehicle incentive program, or air quality expertise. An implementing agency would be chosen by ARB via a competitive solicitation and be responsible for running the HVIP statewide. The selected entity would also be responsible for project outreach, with outreach efforts focused on those air basins with the worst air quality. Staff's proposed project solicitation criteria are described in Appendix A, and a proposed project solicitation schedule is included in Chapter V. Staff recommends allowable costs for administration and outreach of this project be capped at five percent.

B. Zero-Emission and Plug-In Hybrid Light-Duty Vehicle (Clean Vehicle) Rebate Project
Proposed Funding: \$5 million

Synopsis

The Clean Vehicle Rebate Project is intended to encourage and accelerate zero-emission vehicle deployment and technology innovation. This project would provide \$5 million in rebates for California purchasers of zero-emission vehicles, including zero-emission cars, trucks, commercial medium- and heavy-duty vehicles, motorcycles, and neighborhood electric vehicles (NEVs), as well as plug-in hybrid light-duty vehicles (PHEV). The Clean Vehicle Rebate Project would build upon the success of ARB's current Alternative Fuel Vehicle Incentive Program (AFVIP). The Clean Vehicle Rebate Program would generally mirror the existing AFVIP program structure and incentive amounts.⁶

Table IV-2 summarizes the maximum per vehicle rebate amount and the maximum project funding for each vehicle type. The maximum project funding limits (i.e. funding caps) for zero-emission motorcycles and commercial vehicles ensure some of the \$5 million for the project will be expended on passenger cars and NEVs.

Table IV-2: Clean Vehicle Rebate Project Funding

Vehicle Type	Maximum Rebate Amount	Maximum Project Funding
Zero-Emission Light-Duty Vehicle*	\$5,000	\$5 million
Plug-in Hybrid Light-Duty Vehicle	\$3,000	
Neighborhood Electric Vehicle	\$1,500	
Zero-Emission Motorcycle	\$1,500	\$1 million
Zero-Emission Commercial Vehicle	\$20,000	\$3 million

* Rebates for Type I electric vehicles (those with range of 50 to 100 miles) are capped at \$3,000 per vehicle.

Overview

Despite increases in population and vehicle miles traveled, air quality in California has improved dramatically over the past 30 years due to continued progress in controlling vehicle emissions. Manufacturers have made remarkable advances in vehicle technology to comply with stringent California vehicle emission standards, including California's Zero Emission Vehicle regulations. The objective of the Clean Vehicle Rebate Project is to seed the market for widespread commercialization of the cleanest vehicles available today. This project would be part of ARB's down-payment on the significant transportation sector emission reductions needed in the post-2020 timeframe.

⁶ See Staff Report on the Proposed Allocations of \$25 Million for the Alternative Fuel Incentive Program (California Air Resources Board, May 15, 2007) for more information.

Staff's proposed Clean Vehicle Rebate Project would help offset the incremental cost of zero-emission vehicles – which can be as high as \$20,000 for passenger cars – so that the purchase price is more competitive with that of a conventionally fueled vehicle. This rebate project will facilitate the development and commercialization of electric vehicle technology, and support the critical ramp-up in zero-emission vehicle production that is vital in driving down vehicle cost. This project is consistent with the Board's commitment to making incentives available to accelerate the commercialization of zero-emission vehicles.

Qualifying Vehicles

The following vehicle types would be eligible for Clean Vehicle Rebate Project funding:

- **Zero-Emission Passenger Vehicle** – A zero-emission passenger vehicle is an electric-drive, zero-emission passenger car or light-duty truck that is powered by batteries and/or a hydrogen fuel cell and is capable of operation on freeways. Zero-emission vehicles emit no tailpipe emissions and represent the gold standard for clean cars and light-duty trucks. The Board has made it a priority to accelerate commercialization and deployment of zero-emission passenger vehicles in California.
- **Plug-in Hybrid Electric Vehicle** – A PHEV is a hybrid vehicle with batteries that can be recharged by connecting a plug to an electric power source. While not as clean as a ZEV, a PHEV typically emits fewer smog-forming pollutants and greenhouse gas emissions relative to a conventional gasoline-powered vehicle.
- **Neighborhood Zero-Emission Vehicle** – NEVs are zero-emission vehicles that are also categorized as low speed vehicles. These vehicles operate with four wheels and must be capable of a top speed of between 20 and 25 miles per hour on a paved level surface. To be eligible these vehicles must meet all NEV America mandatory technical specifications and performance goals, such as acceleration, speed, and range requirements.
- **Zero-Emission Motorcycles** – ZEMs are fully-enclosed zero-emission vehicles designed to travel on two or three wheels or two-wheel electric motorcycles meeting the provisions of California Vehicle Code Section 400. To best target vehicles used for commuting rather than recreational purposes, staff recommends that only freeway capable ZEMs be eligible for funding.
- **Zero-Emission Commercial Vehicle** – An electric-drive, zero-emission medium- or heavy-duty truck (10,000 to 33,000 lbs GVWR) that is powered by batteries and/or a hydrogen fuel cell and is capable of operation on freeways. Urban vehicles with heavy idling and stop-and-go operation are particularly suited for this technology. Electric delivery vans, in particular, have been operating in Europe for years, and one vehicle manufacturer has begun the ARB-certification process for a medium-duty electric delivery van.

In general, qualifying vehicles must be new, manufactured by the original equipment manufacturer or its authorized licensee, certified, capable of operation on the highway, and meet minimum warranty requirements. Appendix B provides additional vehicle eligibility requirements.

Project Funding

Staff recommends \$5 million of AQIP funds be allocated to this project category. This funding amount corresponds to the demand for rebates in the current AFVIP and the anticipated availability of vehicles for consumers to purchase over the next two years. Based on conversations with vehicle manufacturers, staff believes up to 1,000 zero-emission and plug-in hybrid passenger vehicles, 1,000 NEVs or zero-emission motorcycles (ZEMs) and 200 electric commercial trucks could be available for purchase in California in the 2010-2011 timeframe. The \$5 million in project funding would help encourage these vehicles' deployment by removing economic barriers to their purchase as they hit the market in more significant numbers.

Vehicle category funding limits help ensure that no one vehicle category monopolizes Clean Vehicle Rebate Project funding. Staff considered developing separate projects for commercial ZEVs, light-duty passenger ZEVs and PHEV, zero-emission motorcycles (ZEM), and NEVs, with set funding amounts for each vehicle type. However, a single project designed with maximum funding limits by vehicle category provides additional funding for those vehicles that reach the market soonest (potentially accelerating deployment), while ensuring a base funding level for each vehicle category. If some of the vehicle categories are oversubscribed while others have not reached their limit as of January 1, 2012 (six months prior to the statutory June 30, 2012 fund expenditure deadline), the vehicle category funding limits would be eliminated to ensure timely expenditure of any remaining project funds.

Project Structure

Staff recommends the Clean Vehicle Rebate Project structure mirror that of the existing AFVIP. The funds budgeted for the AFVIP will sunset in June 2009. The Clean Vehicle Rebate Project would allow California purchasers of new, qualifying vehicles to continue receiving rebates for a portion of the incremental cost of these vehicles after vehicle purchase. As with the AFVIP rebates, the project website will ensure that the list of qualifying vehicles, corresponding rebate amounts, and forms are centrally available to the public and other interested parties. The project website will also include information regarding rebate applications and disbursements. The rebates will be distributed on a first-come, first-served basis until funds are depleted.

Rebate Amounts

Staff recommends keeping the same maximum vehicle rebate funding levels used in the AFVIP, with two exceptions. First, staff recommends adjusting the PHEV rebate amount from \$5,000 to \$3,000 per vehicle. The \$5,000 AFVIP rebate amount was

intended to spur very early commercialization and deployment of these vehicles. Staff believes a \$3,000 rebate would encourage PHEV purchases in 2010-11 and allow the project to fund additional clean vehicles. This funding structure also creates an incentive for vehicle purchasers to buy a ZEV, which is funded at \$5,000 per vehicle. Staff is also proposing a \$20,000 rebate for zero-emission commercial vehicles over 10,000 lbs. While these vehicles were not included in the AFVIP, electric delivery vans and utility vehicles have been deployed in Europe and are making their way to the U.S. market. The \$20,000 rebate amount represents between 20 and 50 percent of these vehicles' incremental cost and would encourage these vehicles' to come to California. Other federal and local agency program funds could be combined with AQIP funding to further buy-down these vehicles' incremental cost.

Actual rebate amounts for all vehicle types would be the greater amount of either ten percent of the manufacturer's suggested retail price (MSRP) or fifty percent of the incremental difference in cost between the qualifying vehicle and a comparable internal combustion engine vehicle (up to the maximum rebate amount for that vehicle type). Staff's recommended maximum rebate amounts and vehicle category funding limits are identified in Table IV-2.

Project Solicitation

As with the AFVIP rebate solicitation, the Clean Vehicle Rebate Project solicitation would be open to individuals, federal, state, or local government entities or agencies, and organizations or companies with expertise implementing a grant project and general knowledge of the Board's clean vehicle programs. An entity would be chosen by ARB via a competitive solicitation and be responsible for implementing the Clean Vehicle Rebate Project statewide. The selected agency would be responsible for outreach, monitoring and reporting, and disbursement of funds. Staff is recommending that Clean Vehicle Rebate Project administration and outreach costs be capped at ten percent. Project evaluation and selection criteria are described in Appendix B.

**C. Lawn and Garden Equipment Replacement (LGER) Project
Proposed Funding: \$2 million**

Synopsis

Staff recommends \$2 million for the Lawn and Garden Equipment Replacement (LGER) Project to augment local air districts lawn and garden equipment replacement programs. Local air district lawn and garden equipment replacement programs have been successful in reducing criteria pollutant emissions cost-effectively, but have been limited in scope due in part to lack of funding. The LGER Project would provide significant State funding for this type of project for the first time. This proposed project would be open to all air districts designated as non-attainment of the federal 8-hour ozone standard, with a focus on those districts with the worst air quality. Staff recommends the LGER be limited to replacement of older mowers with zero-emission cordless equipment.

Overview

The purpose of the LGER project is to replace internal combustion lawn and garden equipment with cordless zero-emission lawn and garden equipment, and to encourage further development and deployment of this technology. Staff is particularly interested in encouraging development of zero-emission commercial lawn and garden equipment, since most equipment usage and emissions occur from this sector. While both commercial and residential cordless zero-emission lawn and garden equipment are eligible for the LGER, staff expects only residential equipment to be available for purchase in the program's first year. Staff hopes that the availability of incentive funding will help bring zero-emission commercial equipment to the market and that commercial equipment will be a part of the AQIP in future years.

Project Structure

Staff recommends directing LGER project funding to local air districts because of their experience implementing successful lawn and garden replacement projects. The South Coast Air Quality Management District, San Joaquin Valley Air Pollution Control District, Sacramento Metropolitan Air Quality Management District, and several other local air districts run successful lawn and garden equipment replacement programs. Local districts would apply for funding via a competitive solicitation to expand their current lawn and garden equipment replacement projects. Proposed project solicitation and fund disbursement scoring and criteria are included in Appendix C.

Project Funding

Staff is recommending \$2 million for the LGER project in FY 2009-10. This funding amount would enable air districts to replace an additional 8,000 to 10,000 gasoline powered lawn mowers with electric mowers as part of their existing rebate or voucher projects. Staff recommends requiring participating districts match each dollar in LGER

funding for zero-emission equipment with at least one dollar of local funding. Funding would be distributed among eligible districts based upon the district's project application score (which includes a federal ozone classification component) and its population of residential lawn mowers.

Equipment Incentive Amount

Cordless electric residential lawn mowers cost up to \$300 each. Staff recommends that the LGER allow for vouchers or rebates of up to \$250 per mower, with actual funding amounts determined by the implementing air district.

Equipment Eligibility

AB 118 specifically identifies lawn and garden equipment as one of the source categories eligible for funding. Lawn and garden equipment for the purposes of the proposed LGER is as follows:

- Equipment used to prepare and maintain lawns and gardens. This equipment is generally, but not exclusively, powered by spark-ignition engines. This equipment is traditionally used in applications such as lawnmowers, edgers, trimmers, leaf blowers, and chainsaws. Equipment that does not fall into this category includes golf carts, specialty vehicles, generators, pumps, and other small utility equipment.

Engine families that have been granted credits for use with an engine or engine family averaging, banking, or trading system will not be eligible for LGER project funding, or will be discounted to ensure emission reductions achieved are surplus to regulations. Details regarding implementation of this requirement will be included in the LGER project solicitation.

Project Solicitation

Staff recommends all air districts designated as non-attainment of the federal 8-hour ozone standard be eligible to apply for the LGER. Project evaluation scoring criteria and additional information is described in Appendix C. Staff is recommending funding for project administration and outreach be capped at 10 percent.

D. Zero-Emission Agricultural Utility Terrain Vehicle (Agricultural UTV) Rebate Project
Proposed Funding: \$1.3 million

Synopsis

Staff recommends \$1.3 million to help accelerate purchase of zero-emission agricultural utility terrain vehicles (UTV). All-terrain vehicles (ATVs) and UTVs are used extensively in the agricultural industry to inspect crops and livestock, inspect and repair irrigation systems and fence lines, fertilize and apply chemicals, supervise field crews, herd livestock, transport dirt, and other work-related activities. The equipment population of these vehicles in the California agricultural industry is second only to that of agricultural tractors.

Electric agricultural UTVs are available for sale today, but the cost of these vehicles relative to that of gasoline-powered UTVs can be a deterrent to their purchase. The Agricultural UTV Rebate Project would provide 15 percent of the UTV's MSRP, up to \$2,500 per vehicle (which corresponds to about half the vehicle incremental cost). Recreational ATVs would not be eligible for funding.

Overview

California's off-highway regulations as amended in July 2006⁷ define an ATV as a one-to two-passenger vehicle with handlebars and a saddle-seat, while a utility vehicle (UV) is defined by having bucket seats, a steering wheel, and a vehicle width that exceeds the California Vehicle Code's ATV definition. For the purposes of the Agricultural UTV Rebate Project, the term UTV will be used to collectively include both ATVs and UVs as they are defined by off-highway regulations.

The cost of a heavy-duty electric UTV is on average one-third higher than its gasoline-powered counterpart. A statewide rebate incentive for eligible consumers would accelerate commercialization of zero emission heavy duty UTVs in the commercial sector and have the immediate benefit of reducing criteria pollutant and greenhouse gas emissions. It may also lead to an economy of scale by reducing production and sales costs as volume increases.

Project Funding

Staff recommends \$1.3 million for the UTV Rebate Project in FY 2009-10 to encourage purchase of zero-emission agricultural UTVs. Indications from stakeholders suggest that the incremental cost between electric and gas-powered heavy duty UTV and the lack of familiarity with all-electric technology may deter consumers from making this investment. The UTV Rebate Project would provide 15 percent of the MSRP, up to \$2,500. Discussions with manufacturers indicate production of these vehicles could be

⁷ Amendments to the California Regulations for New 1997 and Later Off-Highway Recreational Vehicles and Engines.

ramped up quickly to produce 500 fully electric agricultural UTVs, the approximate number of vehicles expected to be funded under this project.

Vehicle and Consumer Eligibility

UTV specifications and performance standards will be used in setting the vehicle eligibility criteria. Specifications may be based on, but not limited to, the following parameters:

- The vehicle meets ARB's zero emission definition
- Horsepower (hp)
- Vehicle weight
- Payload limit
- Tow capacity

Specific vehicle eligibility criteria will be defined in the project solicitation based specifications and performance standards typically associated with agricultural work UTVs. These criteria will be used by the project administrator to develop a list of eligible vehicles and the rebate amount associated with each vehicle. Vehicle purchasers would also have to self-certify that the vehicle shall be used primarily in agricultural operations. The project solicitation may include additional requirements to ensure a funded vehicle is used for agricultural work purposes.

Project Solicitation

Staff recommends that air district or other qualified non-profit or public entity be eligible to apply to implement the Agricultural UTV Rebate Project. Up to ten percent of the project funding would be available for project administration and outreach. Appendix D contains the selection criteria and corresponding point scores to be used to rank prospective applicants.

E. Advanced Technology Demonstration Projects
Proposed Funding: \$9 million

Synopsis

Staff is recommending up to \$9 million in FY 2009-10 be allocated for locomotive, marine, off-road equipment, agricultural equipment, and transit or school bus demonstration projects. ARB's goal in funding demonstration projects is to help accelerate the next generation of advanced technology vehicles, equipment, or emission controls which are not yet commercialized. Local air districts and other public agencies would be eligible to apply for these projects to demonstrate promising technologies to reduce emissions in their regions.

Overview

ARB staff conducted twelve public working group meetings between December 2008 and February 2009 to discuss potential AQIP demonstration projects for locomotives, marine vessels, off-road equipment, agricultural equipment, and transit and school buses. The work group meetings provided the opportunity for stakeholders to discuss guiding principles for the demonstration project category, potential demonstration projects, and the funds needed to demonstrate the most promising technologies.

For FY 2009-10, ARB staff proposes to focus demonstration project funding primarily in the off-road categories because the majority of ARB's proposed investment in deployment projects is directed to on-road vehicles. Projects are proposed in the locomotive, marine, agricultural, and other off-road sectors. By funding off-road demonstration projects now, ARB staff envisions that there will be greater opportunity to fund advanced technology off-road deployment projects in the future years. In addition, ARB staff is coordinating demonstration project funding with the Energy Commission's AB 118 program and is proposing that the Energy Commission take the lead in on-road demonstration projects because of the AQIP's FY 2009-10 focus on funding on-road deployment projects.

There is one exception to the off-road focus for demonstration projects. ARB staff proposes to fund demonstration projects in the on-road transit and school bus sector. ARB has a transit bus regulation in place which includes a zero-emission bus demonstration requirement, so transit bus demonstration projects must be carefully designed to ensure they are surplus to ARB's regulation. Accordingly, ARB is in the best position to evaluate transit bus demonstration projects. ARB staff has also gained considerable expertise in the school bus sector because ARB administers the Lower-Emission School Bus Program, putting ARB in a good position to evaluate school bus demonstration projects.

Advanced Technology Demonstration Projects

This section describes staff's proposed locomotive, marine vessel, off-road equipment, agricultural equipment, and transit or school bus demonstration projects that would be eligible for FY 2009-10 AQIP funding.

1. Locomotives

A significant investment of AQIP funds in the locomotive category can yield large emission reductions, and accelerate implementation of these technologies in both locomotive and marine applications. ARB identified a number of promising options for locomotive demonstration projects in its draft report entitled Technical Options to Achieve Additional Emissions and Risk Reductions from California Railroads⁸. This report evaluates 37 options for reducing locomotive and railyard emissions, based upon technical feasibility, potential emission reductions, cost, and relative cost-effectiveness. Staff also held Locomotive Demonstration Work Group meetings with interested stakeholders in December 2008 and January 2009 to evaluate and prioritize potential projects. Staff recommends funding the following two types of locomotive demonstration projects at a total of \$2 million, based on the draft technical report evaluations and at the work group meeting discussions:

- Demonstration of new cleaner locomotive engines that meet or exceed the Low-Emitting Locomotive emission level (4.0 g NOx/bhp-hr and 0.10 g PM/bhp-hr), identified in ARB's draft locomotive technology assessment identified above.
- Demonstration of advanced after-treatment technologies for use on existing medium-horsepower locomotives.

Staff recommends soliciting these projects separately.

2. Marine Vessels

The marine vessel project category has already seen significant developments in emission reducing technology. Staff held work group meetings with interested stakeholders in January and February 2009 to discuss and prioritize amongst the many innovative technologies to reduce marine vessel emissions. Based on these discussions, staff recommends up to \$1 million for the following demonstration project:

- Demonstration of the hybridization of an existing marine vessel
- Demonstration of technology to reduce main engine usage while maintaining vessel operational requirements.

⁸ ARB, Preliminary Draft Technical Options to Achieve Additional Emissions and Risk Reductions from California Railroads, December 2008, www.arb.ca.gov/railyard/ted/122208ted.pdf

3. Off-Road Equipment

Potential equipment in the off-road category includes construction equipment, material handling equipment, airport ground support equipment and other heavy-duty off-road vehicles. Staff recommends the Board approve \$2 million from FY 2009-10 AQIP funds for demonstration projects in the off-road sector. For the FY 2009-10 AQIP, staff recommends the following projects be eligible for funding:

- Tier IV off-road engines or their equivalent
- Hybridization of off-road equipment
- Retrofits for existing off-road engines that reduce NOx emissions by at least 55% and PM emissions by at least 85%
- Retrofits that reduce PM emissions from Tier 0 off-road engines by at least 85%
- Cordless zero-emission commercial lawn and garden equipment

4. Agriculture Equipment

The agriculture category provides a unique opportunity to demonstrate emission reducing technology in a sector that has a heavy reliance on diesel-fueled equipment and vehicles that typically have very long useful lives. A significant population of agriculture vehicles and equipment operate in the San Joaquin Valley and other parts of the state with poor air quality. It is anticipated that significant emission reductions can be achieved in the agriculture sector while providing cost savings to equipment operators. Based on discussions with stakeholders at Agricultural Equipment Demonstration Work Group meetings in January and February 2009, staff recommends up to \$1 million be dedicated for the four specific project types:

- Demonstration of Tier IV off-road engines or their equivalent
- Hybridization of existing agricultural equipment
- Retrofits for existing off-road engines that reduce NOx emissions by at least 55% and PM emissions by at least 85%
- Retrofits that reduce PM emissions from Tier 0 off-road engines by at least 85%

5. Transit Bus and School Bus

Transit and school buses were the first vehicle types to make extensive use of alternative fuels and diesel particulate filters. With the 2010 emission standards soon to be required, zero- or near-zero emission technologies are the next logical step for this vehicle category. Based on discussions with the Energy Commission and stakeholders at the Transit and School Bus Demonstration Project Work Group meetings, staff recommends up to \$3 million be allocated to this project, and that the following four project types be eligible for funding:

- Zero-emission transit buses
- Zero-emission and advanced plug-in hybrid school buses

- Hybrid retrofits on existing school buses
- Existing school bus engine efficiency retrofits

Because of its experience developing ARB's Fleet Rule for Transit Agencies and the On-Road Heavy-Duty Diesel Vehicles Regulation, staff has the expertise to play a lead role in identifying and developing these two demonstration project categories. Since the ARB and Energy Commission have had extensive experience in the school bus sector, both agencies will continue to work cooperatively in crafting a demonstration project category for school buses that is transparent and simple for school districts to participate in.

Clean Technology Initiative

The Clean Technology Initiative (CTI) includes members of the ARB, U.S. EPA, the South Coast Air Quality Management District (SCAQMD) and the San Joaquin Valley Air Pollution Control District (SJVAPCD), and is intended to coordinate efforts to assess new technologies that can help the SCAQMD and SJVAQMD meet their "black box" SIP emission reduction commitments. The CTI intends to develop recommendations regarding the most promising new emission reduction technologies in mid- to late-2009. Locomotive, marine vessel, off-road equipment, agricultural equipment, and transit/school bus demonstration projects identified by the CTI may also be included in AQIP demonstration project solicitations for those categories. CTI Work Group technology demonstration recommendations made after the AQIP solicitation for that source category is issued could be considered as part of the FY 2010-11 Funding Plan.

Contingency Plan for Funding of the Truck Loan Program

At the November 5-6, 2008 and February 4-5, 2009 AQIP public workshops, staff discussed the potential for a contingency in the proposed FY 2009-10 Funding Plan to allow additional funding for the new Truck Loan Program, should the loan program be oversubscribed. Chapter V includes staff's proposal to provide the Executive Officer the flexibility to direct demonstration project funding to the Truck Loan Program if needed in FY 2009-10. Demonstration projects that have funds re-directed to the Truck Loan Program will be prioritized accordingly in the FY 2010-11 Funding Plan.

Project Implementation

Local air districts and other public agencies are eligible to apply for demonstration project funding. Air districts will be solicited to administer demonstration projects in their regions. The ARB strongly encourages local air districts or public agencies, such as ports, etc. to partner with end users and technology providers to apply for demonstration project funds. Based on ARB's knowledge of local air district experience in implementing incentive programs over the last decade, the local experience is vital in determining which vehicles and companies are ready to take on the challenge of demonstrating cutting edge technology.

Staff recommends that at least 50 percent of each demonstration project's funds be provided by a non-AQIP source, such as an interested industry partner or local air district. Ten percent of this non-AQIP match must come from the owner of the demonstration vehicle or equipment technology. The requirement of match funding for demonstration projects will leverage AQIP funding while ensuring a literal "buy-in" by all participants.

Demonstration Project Solicitation

Solicitations for each of the five project categories would be rolled out over a set schedule identified in Chapter V. Solicitations for potential projects would be open to local air districts and other public agencies, and would be evaluated based on the demonstration project scoring criteria identified in Appendix E. These criteria are intended to maximize the benefit from each potential project and provide clear direction to those applying for demonstration project funds. Staff recommends that up to ten percent of funding in each of the five demonstration project source categories be available for project administration.

V. Next Steps

The proposed FY 2009-10 Funding Plan identifies the AQIP projects ARB staff recommends for FY 2009-10. The plan specifies all policy-related details regarding the proposed projects, including eligible applicants, the criteria ARB will use to evaluate applications, eligible vehicles/ equipment, maximum incentive amounts, and other grantee requirements. This chapter describes the next steps ARB will take to implement the AQIP upon Board approval of the proposed FY 2009-10 Funding Plan. The chapter covers:

- Timeline for project solicitations.
- Contingency plans.
- Development of the FY 2010-11 Funding Plan.

A. Timeline for FY 2009-10 Project Solicitations

After Board approval of the proposed FY 2009-10 Funding Plan, the next implementation step is issuing solicitations for a grantee to implement the projects identified in the plan. These solicitations will include all the programmatic details potential grantees need to apply for funds, as well as the criteria upon which applications will be evaluated and scored. In accordance with the AQIP Guidelines, ARB will begin issuing project solicitations no later than 90 days after the funds are appropriated in the State Budget.

ARB staff proposes to issue the Hybrid Truck and Bus Voucher Incentive Project solicitation within 30 days after the FY 2009-10 budget is signed. Solicitations for the remaining projects would be staggered over the next six months, with the order based in part on the size of the projects and their readiness for funding. Once a solicitation is issued, it would be open for 4 to 6 weeks. Staff expects that project selection will take an additional 4 to 6 weeks. Once a grantee is selected, it is anticipated that funds would be available for the project in approximately 30 to 60 days. Staff's proposed timeline for the FY 2009-10 project solicitation and selection is shown in Appendix F. This timeline indicates that all funds would be encumbered by April 2010, well in advance of the June 30, 2010 statutory deadline.

As discussed previously, ARB is working in close coordination with the Energy Commission on each agency's AB 118 program development and project implementation criteria. ARB and Energy Commission staff are also exploring opportunities to combine funds and issue joint solicitations for some project types. For example, an Energy Commission effort to offer incentives for natural gas-powered passenger cars could complement ARB staff's proposed Clean Vehicle Rebate Project for zero-emission and plug-in hybrid passenger vehicles. Should an AQIP project solicitation be issued jointly with the Energy Commission, the project application scoring criteria identified in the appendices may be updated to reflect the needs of the joint solicitation.

B. Contingency Plans

The proposed FY 2009-10 Funding Plan is based upon the latest available information. However, circumstances may change between the time the Board approves the plan and the time project solicitations are issued or project funds awarded. This section describes staff's proposed contingency plans should mid-course corrections be needed to ensure that FY 2009-10 AQIP funds are spent expeditiously and efficiently. Such contingencies are important in voluntary incentive programs where it is not possible to fully anticipate participation levels in advance. In addition, significant new federal air quality incentive funding will be available as a result of the recently signed federal stimulus package. ARB needs the flexibility to adjust AQIP funding levels or project criteria in response to federal incentive funding that California receives.

The proposed FY 2009-10 AQIP funding allocation of \$42.3 million is based on the proposed State Budget. If the AQIP appropriation to ARB is different in the final State Budget, ARB staff proposes adjusting the funding target for each project category proportionally. For example, if the final budget allocation is 95 percent of the proposed allocation, the funding target for each project listed in Chapter III, Table III-1 in would be reduced by 5 percent.

Staff also proposes that the Board delegate to the ARB Executive Officer the authority to redirect a limited amount of FY 2009-10 AQIP funds from Board-approved funding targets in several specific cases described below should the need arise. Staff would request Board approval to redirect funds in all other cases.

Contingency Plans Related to ARB Loan Program for Trucks

The Legislature directed that ARB's FY 2008-09 AQIP appropriation of \$42 million be used for a new loan program to assist truckers affected by the two recently adopted ARB regulations as discussed in Chapter I. The Truck Loan Program is under development, and loans will be available to truck owners later this spring.

It is too early to gauge demand and determine if additional near-term funding will be needed because the Truck Loan Program is just getting underway. Consequently, funding for the Truck Loan Program is not proposed in the FY 2009-10 Funding Plan. Staff anticipates that the \$42 million already available will sustain the program until mid-2010 in which case continued funding could be considered as part of the FY 2010-11 Funding Plan. In the event that Truck Loan Program is oversubscribed and funds are exhausted well in advance of the start of FY 2010-11, staff is proposing a contingency plan which would allow the Executive Officer to divert up to \$10 million FY 2009-10 AQIP funding to provide a funding bridge to the Truck Loan Program until FY 2010-11. Potential sources of funding would be demonstration projects or the Hybrid Truck and Bus Voucher project.

To trigger this proposed contingency provision, the Executive Officer must determine whether the Truck Loan Program is oversubscribed prior to issuing solicitations for each

of the five demonstration projects identified in the proposed FY 2009-10 Funding Plan. If the Executive Officer determines that the Truck Loan Program is oversubscribed and is in need of additional funding, the Executive Officer would have the authority to eliminate, delay, or reduce the amount for the demonstration projects and redirect these funds to the Truck Loan Program. In addition, if the hybrid truck and bus sector receives a significant influx of incentives from another source such as the federal incentive funds, the Executive Officer may redirect up to \$5 million from the Hybrid Truck and Bus Project Vouchers to the Truck Loan Program provided those funds have not yet been expended.

After May 1, 2010, ARB would no longer consider diverting FY 2009-10 AQIP funds to the Truck Loan Program, but would instead consider directing FY 2010-11 funds. Projects from which funds are diverted under this contingency plan would receive priority for FY 2010-11 AQIP funding.

Other Contingency Plans

In developing the funding targets and project criteria for each category, staff attempted to anticipate the potential demand for funding and availability of emerging technologies. Staff proposes contingency provisions to address cases where:

- The demand for funding does not meet the funding target.
- An emerging technology is delayed or accelerated.
- Additional sources of incentives become available.

This flexibility would enable ARB to respond to new information while providing a mechanism to ensure funds are spent expeditiously. If any of the proposed contingency provisions are triggered, staff would update the Board during its consideration of the FY 2010-11 AQIP Funding Plan in Spring 2010.

Provisions for Undersubscribed Solicitations: For vehicle and equipment deployment projects, staff expects grant applicants will request the full funding available in the project solicitation. However, for demonstration projects, potential grantees may choose to commit to complete a project for less than that project's funding target in order to have a more competitive project application. In the event that a project solicitation is not fully subscribed, staff proposes that the Board delegate to the Executive Officer the authority to redirect any excess funds to the Truck Loan Program and/or the Hybrid Truck and Bus Project Vouchers.

Provisions for Emerging Technology: If ARB receives new information regarding a significant delay or acceleration in availability of a technology slated for funding, staff proposes that the Board delegate to the Executive Officer the authority to adjust AQIP project funding amounts by up to 5 percent of total FY 2009-10 AQIP funding allocation (about \$2 million).

Provisions for Availability of Other Funding: ARB will actively pursue incentive funds available under the federal stimulus package. If ARB receives federal funding covering the same vehicle and equipment technologies targeted in the AQIP, it may be appropriate to adjust AQIP funding targets or project criteria to better align with any applicable federal requirements. In this case, staff proposes that the Board delegate to the Executive Officer the authority to update AQIP project criteria and/or adjust AQIP project funding amounts up to 5 percent of total FY 2009-10 AQIP funding allocation. Staff would request Board approval if a larger redirection of funds is warranted.

C. FY 2010-11 Funding Plan

The Funding Plan will be updated and presented to the Board for its consideration each year. ARB staff intends to present a proposed FY 2010-11 Funding Plan to the Board in Spring 2010. Staff will hold a series of public workshops late this year or early next year to solicit input on the plan, and staff will release the plan for a 30 day public comment period prior to Board consideration. For the FY 2010-11 Funding Plan, staff will:

- Evaluate the projects funded in FY 2009-10 and consider whether the projects are over-subscribed or under-subscribed, whether continued funding should be proposed, and if so, whether modifications to project requirements are needed.
- Reexamine the project categories not funded in FY 2009-10 and consider whether additional categories should be proposed for funding in FY 2010-11.
- Evaluate the progress of the ARB Truck Loan Program described in Chapter I and consider whether additional funding should be proposed.
- Reexamine opportunities to coordinate with other incentive programs such as the Energy Commission's AB118 program or federal incentive programs.