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## **Chapter 1: PROGRAM OVERVIEW**

The Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program) is a grant program that funds the incremental cost of cleaner-than-required engines, equipment, and other sources of air pollution. Although air pollution regulations have significantly reduced emissions and improved air quality across the State, many areas of California continue to experience unhealthy air. The Carl Moyer Program complements California's regulatory program by providing incentives to obtain early or extra emission reductions, especially from emission sources in environmental justice communities and areas disproportionately impacted by air pollution. Although the Carl Moyer Program has grown in scope, it retains its primary objective of obtaining cost-effective and surplus emission reductions to be credited toward California's legally-enforceable obligations in the State Implementation Plan (SIP) – California's road map for attaining the health-based national ambient air quality standards.

These 2011 Carl Moyer Program Guidelines (Guidelines) update the program to respond to stakeholder feedback, the downturn in the economy, more current technical information, and new regulatory requirements for vehicles, equipment, engines, and other pollution sources in California. In addition, the administrative procedures have been clarified and streamlined for easier use by the implementing local air pollution control and air quality management districts (air districts). Overall, in order to increase eligibility for projects, staff has modified source category requirements and revised the methodology for determining if projects result in surplus emission reductions. This includes two new source categories being added to the Carl Moyer Program: Emergency Vehicles (Fire Apparatus) and Lawn and Garden Replacement, and the development of two Voucher Incentive Programs (VIP) to help streamline the existing on-road and off-road replacement programs. Where appropriate, the Guidelines coordinate the Carl Moyer Program with the Goods Movement Emission Reduction Program, a bond program created by voter-approved Proposition 1B in 2006 that covers some of the same sources as the Carl Moyer Program.

These 2011 Guidelines affect Carl Moyer Program projects beginning with those funded with fiscal year 2011/2012 funds. Air districts may also opt to utilize these Guidelines for projects funded with fiscal year 2010/2011 funds. The revised cost-effectiveness limit and capital recovery factors may be used by air districts once the Air Resources Board (ARB or Board) adopts the 2011 Guidelines, but must be used after July 1, 2011. As required per statute, ARB will annually update the cost-effectiveness limit and capital recovery factors.

### **A. Background**

Since 1998, the Carl Moyer Program has provided grants to encourage the owners of diesel engines to go beyond regulatory requirements by retrofitting, repowering, or replacing their engines with newer and cleaner ones. The Carl Moyer Program has been a successful and popular air pollution program. In its first 12 years, the Carl Moyer Program provided over \$680 million in State and local funds to clean-up

over 24,000 engines. This reduced about 100,000 tons of ozone precursor pollutants, which include oxides of nitrogen (NOx) reactive organic gases (ROG), and 6,000 tons of toxic diesel particulate matter (PM) throughout California. For fiscal year 2010/2011, approximately \$69 million of State funding is available through the Carl Moyer Program, with an additional \$50 million of local funds that can be spent on similar projects.

The Carl Moyer Program has been successfully implemented through the cooperative efforts of the ARB and the air districts. The Health and Safety Code directs ARB to oversee the Carl Moyer Program by managing program funds; developing and revising guidelines, protocols, and criteria for covered vehicle projects; and determining methodologies used for evaluating project cost-effectiveness. ARB also distributes State funds to participating air districts for program implementation each year. Air districts follow the Guidelines to select, fund, and monitor specific clean air projects in their areas. The air districts, following the criteria approved in the Board approved Guidelines, provide grants to public and private entities for the incremental cost of cleaner-than-required engines and/or equipment.

Air districts enjoy considerable flexibility in implementing the Carl Moyer Program. Air districts may focus their funds on specific project categories in order to coordinate with other incentive funds or local funds. This flexibility allows air districts to tailor the use of Carl Moyer Program funds to meet local air quality objectives while still ensuring the proper and responsible use of State funds.

## 1. Program History

The Carl Moyer Program was created in 1998 when \$25 million was included in the fiscal year 1998-1999 State budget to fund a lower-emission heavy-duty engine incentive program. The ARB adopted the first set of Carl Moyer Program Guidelines in early 1999, and legislation (Assembly Bill (AB) 1571) enacted in 1999 formally established the statutory framework for the program (Health & Safety Code § 44275, et seq). The program initially focused on reducing NOx emissions from heavy-duty diesel engines in order to implement a strategy in the 1994 California SIP for ozone that called for the early introduction of cleaner engines. The scope of the program has expanded over the years with statutory changes adding both new covered pollutants and new source categories.

Legislation enacted in 2001 (AB 1390) required air districts with a population of over 1 million to expend 50 percent of Carl Moyer Program funds for projects that operate or are based in environmental justice areas (Health & Safety Code § 43023.5).

Legislation enacted in 2004 (AB 923 and Senate Bill (SB) 1107) provided increased and continued funding through 2015 while significantly expanding the Carl Moyer Program. AB 923 expanded the Carl Moyer Program to include light-duty vehicle projects and agricultural sources of air pollution as defined in Health and Safety Code section 39011.5(a). AB 923 also expanded the Carl Moyer Program from a NOx focused incentive program to include projects that also reduce reactive organic

gases and fine particulate matter (PM<sub>10</sub>). This change allows the Carl Moyer Program to more comprehensively address all of California's air pollution challenges, including the air toxic risk associated with emissions from diesel engines. Additional legislation enacted in 2004 (AB 1394) directed ARB to include in the Carl Moyer Program heavy-duty fleet modernization projects that reduce NOx and/or PM<sub>10</sub> emissions through the replacement of old trucks.

Legislation enacted in 2005 (SB 467) required ARB to revise the Carl Moyer Program Guidelines to include projects in which an applicant turns in off-road equipment powered by internal combustion engines and replaces that equipment with new zero-emission technologies.

Legislation enacted in 2006 (SB 225) provides additional resources for program administration to address the expansion of the program. This legislation increased allowable expenditures for air districts' program administration from 2 percent of program funds for outreach to 5 percent for air districts with one million or more inhabitants and to 10 percent for those with less than one million inhabitants. ARB retains 4 percent of program funds for outreach, oversight, and administration. These additional resources enabled ARB and the air districts to improve program accessibility, efficiency and accountability.

Legislation enacted in 2009 (SBx2 3) allows a maximum project life of at least 10 years for off-road farm equipment projects. This legislation also allows for funding of these off-road farm equipment projects up to the compliance date as determined by statute, regulation or rule.

Legislation enacted in 2010 (AB 1507) requires ARB to revise the Guidelines by July 1, 2011, to allow for the combination of Carl Moyer Program funds with funds designed to reduce greenhouse gas emissions from federal programs or the Alternative and Renewable Fuel and Vehicle Technology Program without including them in the cost-effective calculation for the Carl Moyer Program funds. Such revisions are included in the 2011 Guidelines.

ARB has revised the Guidelines several times to address these legislative changes. The 2011 revisions is the sixth edition of the Carl Moyer Program Guidelines.

## 2. Core Principles

Emission reductions funded through the Carl Moyer Program must be real, surplus, quantifiable, and enforceable in order to meet the underlying statutory provisions and to be SIP-creditable. The requirements in the Guidelines are intended to ensure these core principles are met.

To ensure that projects are surplus to regulations, funded projects must not be required by any federal, State or local regulation, memorandum of agreement/understanding with a regulatory agency, settlement agreement,

mitigation requirement, or other legal mandate. ARB also sets a minimum project life of three years to ensure that the program does not fund actions taken to comply with regulatory deadlines. This minimum three year project life helps ensure the overall cost-effectiveness of the program. In some cases, the Board has approved exceptions to the three year project life, which include small fleets with on-road vehicles (two year project life) and stationary agricultural equipment (one year project life). In addition, a maximum project life is established for each project type to ensure that the emission reductions are real for the life of the project.

The Guidelines require that emission control technologies be certified or verified by ARB (certification or verification by the United States Environmental Protection Agency (U.S. EPA) or International Maritime Organization may be allowed for some source categories for which ARB does not have a certification or verification program) to ensure that real, quantifiable emission reductions are achieved over the life of a project.

Robust administrative requirements are in place to ensure that emission reductions are enforceable and are achieved for the life of a project. Grantees must sign contracts enforceable for the life of a project. The Guidelines also include auditing and monitoring provisions to ensure the expected emission reductions are achieved.

## **B. Funding Sources**

The Carl Moyer Program has been funded through a variety of mechanisms since its inception in 1998. In the program's first four years, the California Legislature funded the Carl Moyer Program through annual budget appropriations. Voter approval of *Proposition 40: The California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002* provided program funding for the fifth and sixth year.

Legislation enacted in 2004 (SB 1107 and AB 923) provide continuous funding for the Carl Moyer Program starting in the program's seventh year and moving forward. This legislation provides three funding sources for the Carl Moyer Program.

1. Smog Abatement Fee: SB 1107 adjusted the smog abatement fee from \$6 to \$12 while extending the newer-vehicle Smog Check exemption. This additional fee is directed to fund the Carl Moyer Program, securing up to \$60 million in annual funding for the program (Health & Safety Code § 44091.1). This legislation does not have a sunset date.
2. Tire Fee: AB 923 adjusted the tire fee that is assessed on purchasers of new tires from \$1 per tire to \$1.75 per tire (Public Resources Code, section 42885). The adjustments to the tire fee translate to up to \$25 million available for the Carl Moyer Program. This legislation sunsets in 2015.

3. Motor Vehicle Registration Fee: AB 923 also gave air district governing boards the authority to increase the vehicle registration surcharge by \$2 to pay for four specific clean air incentive programs:
  - (A) Projects eligible for grants under the Carl Moyer Program.
  - (B) The Agricultural Assistance Program.
  - (C) The new purchase of school buses pursuant to the Lower-Emission School Bus Program.
  - (D) An accelerated vehicle retirement or repair program.

To date, 20 air districts have adopted the \$2 Motor Vehicle Registration fee. In fiscal year 2010/2011, we estimate that the air districts will receive approximately \$50 million from this fee. This legislation sunsets in 2015.

The \$2 fees are sent directly from the Department of Motor Vehicles to the air districts, unlike the funds collected via the smog abatement and tire fees which are distributed by the ARB to air districts following a funding formula specified in Health and Safety Code section 44299.2.

In fiscal year 2010/2011, approximately \$69 million from smog abatement and tire fees are available for the Carl Moyer Program.

### **C. Project Types**

The Carl Moyer Program funds clean air projects involving a wide variety of vehicles and equipment. Typical types of projects are listed below.

1. Repower: The replacement of an in-use engine with another, cleaner engine.
2. Retrofit: An emission control system employed exclusively with an in-use engine, vehicle or piece of equipment.
3. New purchases: Vehicles or equipment certified to optional, lower emission standards. While common in the past for on-road heavy-duty vehicles, this project type is becoming much less common. As increasingly stringent emission standards for new engines become required, there are fewer engines certified to optional standards.
4. Fleet modernization or equipment replacement: The replacement of an older vehicle or piece of equipment that still has remaining useful life with a newer, cleaner vehicle or piece of equipment. The old vehicle/equipment is scrapped. On-road heavy-duty vehicle fleet modernization and off-road equipment replacement are existing eligible, project categories. In addition, two new source

categories which replace older engines and equipment with newer engines and equipment are proposed for inclusion in these guidelines: Emergency Vehicles (Fire Apparatus) and Lawn and Garden Equipment Replacement.

Two VIPs have been developed that streamline existing replacement funding options and are included as stand-alone programs in Part III of these guidelines.

5. Vehicle retirement (or car scrap): Paying owners of older, more polluting vehicles that still have remaining useful life to voluntarily retire those vehicles earlier than they would have otherwise.

More details on eligible project types can be found in Chapters 4 through 14 of these Guidelines. Those chapters are written to provide an initial indication of the most likely project types in each category. Other projects may be eligible; interested applicants should reference the details in each section and consult with their air district for additional solicitation material, program brochures, and to discuss potential Carl Moyer Program projects.

#### **D. Summary of Changes since 2008**

In early 2009, ARB adopted the On-Road Voucher Incentive Program (On-Road VIP) and in March 2010, the Board adopted a number of near-term revisions to the Program to help increase project eligibility, streamline administrative requirements, and adjust to the downturn in the economy. Furthermore, as part of past Guideline revisions, to ensure that the Guidelines remain in sync with ARB regulations, the Board has authorized the Executive Officer to approve amendments to the Guidelines as necessary. Using this authority, the Executive Officer has approved several modifications since the Guidelines were last brought to the Board. All of the changes made since the last major Guidelines revision in 2008 are described below.

##### **1. On-Road Voucher Incentive Program (On-Road VIP)**

The On-Road VIP, originally approved for implementation in early 2009, provides a streamlined approach to reduce emissions from on-road vehicles by replacing older, high-polluting vehicles with newer, lower-emission vehicles or by installing Verified Diesel Emission Control Strategy (VDECS or "retrofit"). Air districts utilize a dealership network to help provide Carl Moyer Program funds to small fleets operating throughout California. On-Road VIP Guidelines are a stand alone document that provides implementation documents for air districts to use. Revisions to the original On-Road VIP adopted by the Board included increasing funding levels up to \$45,000, increasing funding levels for trucks equipped with 0.20 grams per brake horse power-hour (g/bhp-hr) NOx emission standards, allowing the replacement of medium heavy-duty vehicles, expanding funding options based on usage, increasing the older truck's engine model year range eligible for funding from 1993 to 2002, and including retrofits as eligible for funding.

## 2. On-Road Vehicles

Revisions to the On-Road Fleet Modernization funding options included increasing the older truck's engine model year range eligible for funding from 1993 to 2002, increasing maximum funding amounts, reducing the required California registration period for baseline trucks, extending eligibility to trucks that previously operated as drayage trucks, increasing the maximum mileage for used replacement trucks, and reducing the minimum project life for replacements and retrofits for small fleets.

Revisions also included allowing 2-for-1 truck replacement transactions to occur, funding the replacements of medium heavy-duty trucks in addition to heavy heavy-duty trucks, increasing funding levels for trucks equipped with 0.20 g/bhp-hr NOx emission standards, and extending additional funding opportunities to trucks operating solely in NOx-Exempt areas. Contracts for on-road trucks are no longer required to include usage as long as prior usage has been verified. In addition, the maximum retrofit funding was increased to \$10,000. Last, the Board directed funding towards small fleets as a result of the adoption of the Truck & Bus Regulation.

## 3. Off-Road Equipment

The Carl Moyer Program originally required that off-road repower projects must install the highest level ARB-verified retrofit to qualify for funding, if technically feasible. However, under the 2008 Guidelines, air districts were allowed to offer applicants an opt-out waiver of the default retrofit requirement through March 27, 2009. Subsequently, ARB allowed air districts to offer applicants the waiver indefinitely for engines that are not subject to an in-use regulation.

In addition, per SBx2 3, ARB modified the Guidelines to allow off-road farm equipment to have a minimum project life of 10 years. Also, these projects can now be funded up until a regulatory compliance date. This change affects the following source categories: Off-Road Compression-Ignition Equipment, Off-Road Large Spark-Ignition Equipment, Off-Road Equipment Replacement, and Portable and Stationary Agricultural Sources.

Last, the Board approved changes to the Off-Road Equipment Replacement funding option which expanded eligibility to include the replacement of older equipment with Tier 1 or Tier 2 engines. Revisions to the Off-Road Equipment Replacement funding option also included simplifying the method used to determine maximum equipment replacement grants, eliminating the requirement for advanced approval of an air district equipment replacement plan, and simplifying the usage documentation requirements.



#### 4. Locomotives

Three revisions were approved for the Locomotives source category. The revisions included updating the Locomotive Fuel Consumption Rate Factors to be consistent with a U.S. EPA update released in April 2009.

The second revision corrected the example locomotive emission calculation to ensure consistency between the project activity for the baseline locomotive and the locomotive using alternative switcher technology.

Last, the Board approved a revision that allows air districts the flexibility to propose an alternative to verify project activity beyond using just fuel consumption.

#### 5. Program Administration

A number of revisions were approved to streamline the administrative requirements of the Carl Moyer Program to better reflect the state of the economy and to streamline the process. Revisions include: modifying the usage requirement in contracts for those negatively affected by the economy, annually updating the cost-effectiveness limit and capital recovery factor to reflect consumer price index adjustments, updating the match formula to be able to adjust to changes in the levels of Carl Moyer Program funds collected, modifying the air district application process and waiving the match requirements for air districts that are only taking the minimum allocation of funding, and streamlining the fund disbursement process to minimize the number of requests from air districts for disbursements. Additional revisions included simplifying interest reporting and tracking, streamlining reporting requirements, improving cumulative tracking progress, and reducing requirements for minimum allocation and rural air districts. Finally, revisions were adopted to codify modifications and clarifications to the 2008 Guidelines.

### **E. Summary of Changes for 2011**

The following is a summary of major changes proposed in the 2011 Guidelines.

#### 1. Off-Road Voucher Incentive Program (Off-Road VIP)

Off-Road VIP is a new, stand-alone, funding option for air districts to implement. Modeled after the On-Road VIP, this funding option streamlines the existing off-road equipment replacement program administrative requirements. Funding will be available to help reduce the cost of replacing older, uncontrolled agricultural tractors, construction tractors, loaders, and backhoes with engines less than 175 horsepower with newer, cleaner equipment operating anywhere throughout California.

## 2. Emergency Vehicles (Fire Apparatus)

A new source category, Emergency Vehicles (Fire Apparatus) (Chapter 6), has been added to the Guidelines to help fund the replacement of older on-road emergency vehicles with newer, cleaner emergency vehicles. Since emergency vehicles have different fleet operational characteristics than other on-road vocations, this chapter will help fund projects that normally qualify for limited funding in the existing on-road source categories. Some examples of fire apparatus include, but are not limited to, pumper trucks, ladder trucks and tankers.

## 3. Lawn and Garden Equipment Replacement

Another new source category, Lawn and Garden Equipment (Chapter 14), will help owners replace older lawn and garden equipment with newer, cleaner equipment. Adding this source category will help expand air districts' existing lawn mower replacement programs. It will also allow air districts that do not currently fund lawn mower replacement programs the ability to do so. Lawn mowers will be targeted with the adoption of these Guidelines. Staff will analyze other lawn and garden equipment to be eligible for future funding.

## 4. Changes to Existing Source Categories

In addition to the changes discussed above, a number of other changes have been made to existing source categories.

- (A) On-Road Heavy-Duty Vehicles: Changes made to the On-Road chapters include expanding funding to fleets with 10 or less vehicles and allowing applicants to verify usage by providing historic hours of operation on a case-by-case basis. Also, air districts are no longer required to have an ARB approved plan to implement Fleet Modernization.
- (B) Off-Road Equipment: Changes made to the Off-Road Equipment chapters include expanding funding opportunities for small fleets by reducing the minimum project life from three years to two years. Additional flexibility will be allowed for owners to verify horsepower by using power take off to determine horsepower. Also, funding opportunities for the upcoming introduction of Tier 4 engines are addressed.
- (C) Light-Duty Vehicle Retirement: Recent changes to the Bureau of Automotive Repair's (BAR) vehicle retirement program will increase the weight limitation from 8,500 pounds gross vehicle weight rating to 10,000 pounds. These Guidelines align with BAR's weight limits resulting in an increase in eligible vehicles to be retired.

- (D) Finally, staff reviewed all aspects of each source category to further streamline and clarify program requirements. The Guidelines incorporate many of these minor revisions to help increase project eligibility.

## 5. Program Administration

These Guidelines incorporate a number of revisions that will further streamline air district administration and applicant participation in the Carl Moyer Program. These revisions include allowing air districts that track projects cumulatively to easily close out older years, add further flexibility to the air districts' ability to adjust contracts based on the economy's impact on usage, new language to assist air districts implementing projects on a case-by-case basis (except for the Voucher Incentive Programs), streamline auditing requirements of projects and grantees, and outline progressive corrective steps to help assist air districts in the event that the programmatic and fiscal elements of the program are not being met.

## 6. Adopted and Revised Regulations

The Carl Moyer Program funds projects that are early, or extra, to regulatory requirements. Carl Moyer Program eligibility is affected each time ARB adopts a new regulation for a source covered under the program. The 2011 Carl Moyer Program Guidelines update the project criteria for each relevant source category to reflect the new and revised regulations adopted since the previous revision to the Guidelines.

## 7. Public Process for Changes to the Carl Moyer Program Guidelines

ARB is required to make proposed changes to the Guidelines and is required to make those changes available to the public at least 45 days prior to final adoption. ARB is also required to hold one public meeting to consider public comments before final adoption of any changes. Although major changes to the Guidelines are adopted by the Board, the Board has delegated authority to the Executive Officer to adopt additional changes to the Guidelines that are deemed necessary in response to regulatory Board actions and to ensure that the Guidelines remain effective and up-to-date. Any changes adopted by the Executive Officer will go through the public process as described above.

## 8. Cost-Effectiveness Limit and Capital Recovery Factors

Cost-effectiveness is a measure of the dollars provided to a project for each ton of covered emission reductions. Statute sets a cost-effectiveness limit that projects must meet. Statute also requires that the cost-effectiveness limit be updated annually to reflect inflation.

In addition, a discount rate is used to calculate the capital recovery factors in determining the annualized cost of Carl Moyer Program grants provided for a

project. This number is based on the average annual yields for United States Treasury Securities, averaged over the 2010 calendar year, with a three-year, five-year, seven-year, and ten-year maturation. As required by statute, the cost-effectiveness limit and capital recovery factors will be updated annually through a notification posted on the website (Mail-out). Additional details on calculating cost-effectiveness limit and the capital recovery factor can be found in Appendix G: Cost-Effectiveness Limit and Capital Recovery Factor.

## 9. Comingling of Public Funds

These Guidelines include language that clarifies how air districts are statutorily required to review project applications that include the comingling of other public funds with Carl Moyer Program funds. Health and Safety Code section 44283 (d) and 44283 (g) require air districts to include other public funds when determining the cost-effectiveness or the incremental costs of a project. In addition, these Guidelines include language, as required by Health and Safety Code section 44287.2, which allows for the combination of Carl Moyer Program funds with funds designed to reduce greenhouse gas emissions from federal program sources or the Alternative and Renewable Fuel and Vehicle Technology Program without including them in the cost-effective calculation for the Carl Moyer Program funds. Examples of how these requirements are to be implemented are included in Appendix C.

## 10. Methodology Used to Determine Surplus Emission Reductions

ARB is required to develop Guidelines that help determine project eligibility that ensures projects funded purchase emission reductions which are considered “surplus” to a regulation. These Guidelines incorporate a revised methodology used to determine surplus emission reductions.

Previously, staff used the emission benefit analysis of a regulation as the benchmark for determining whether a source category project results in surplus emission reductions. For example, a regulation may require a retrofit, but the emission benefit analysis assumes fleet turnover will occur instead of the purchase of a retrofit. Therefore, turnover became the benchmark for funding.

Under these Guidelines, staff will look at the compliance dates of a regulation as the benchmark for determining whether a project results in surplus emission reductions. The emission benefits analysis is now used as a tool in determining surplus emission reductions and to guide additional policy overlays. The result of this change will increase the eligibility of projects while ensuring that all statutory requirements are met.

## 11. Expand Funding Opportunities to Fleets that are in Compliance with In-Use Regulations

Previously, fleets who were within an in-use regulatory compliance schedule, were allowed only one opportunity, or “one shot”, at receiving incentive funds to further reduce emissions in their fleet. These Guidelines allow more than one funding opportunity for fleets after their first compliance deadline has passed as long as compliance with the in-use regulation can be demonstrated.