Report on Reductions Achieved from Incentive-Based Emission Reduction Measures in the San Joaquin Valley

APPENDIX F: Carl Moyer Program Integrity Demonstration

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California Environmental Protection Agency

Air Resources Board

Purpose: The following contains citations outlining how the Carl Moyer Memorial Air Quality Standards Attainment program (Carl Moyer Program) produces surplus, quantifiable, enforceable, and permanent emission reductions.

Surplus

Emission reductions used to meet air quality attainment requirements are surplus if they are not otherwise relied on in air quality-related programs related to the SIP, SIP-related requirements, other State air quality programs adopted but not in the SIP, a consent decree, or Federal rules that focus on reducing criteria pollutants or their precursors. The following references provide details on how the Guidelines ensure that the emission reductions generated by the programs are not required by any regulation for the life of the project, the baseline equipment was being used and operated within the state, and that projects funded are not already accounted for in future-year inventories. The requirement for project funded through the Carl Moyer program to be surplus is codified in California Health and Safety Code 44281(b).

General Moyer

The California statutory basis for the Carl Moyer Program (Health and Safety Code §44275-§44299.2) requires that the emission reductions achieved are above and beyond those required under existing regulations that are incorporated into a SIP. As a result, in the development of the Carl Moyer Program Guideline[1] criteria, current and upcoming regulatory compliance dates are used as a benchmark for determining the eligibility of a project and the period (project life) that a project can claim emission reductions. A project must be installed and in operation prior to any compliance date (from one to three years, depending on the category) and cannot be claimed towards regulatory compliance for the life of the project. SIP inventories reflect compliance with already adopted regulations. As part of the SIP development and/or revision process, ARB reviews the Moyer project mix to ensure that the amount of emission reductions credited to the program are not included in the future year inventories, including review of fleet turnover and equipment lifetime assumptions that are specific to the future year inventory used in each individual attainment demonstration

- Moyer Guidelines Chapter 1, Program Overview, Section A.2. (Specifies the core program principles including real, surplus, quantifiable and enforceable SIP-creditable emission reductions.)
- Moyer Guidelines Chapter 2, Project Criteria A, H, I, MM. (Specifies that project must be surplus to a rule.)
- Moyer Guidelines Chapter 2, Project Criteria E, F and G (Specifies that no project may be used in credit for emission reduction credit in any other program or market)
- Moyer Guidelines Chapter 2, Project Criteria B, I and MM. (Specifies that any existing rule must be considered at time of contract when determining project eligibility and eligible emission reductions.)
- Moyer Guidelines Chapter 3, Section Z.6(B) and AA.2. (Specifies the requirements for documentation that the baseline equipment was in use.)

[1] This document references the 2011 Carl Moyer Program Guidelines: http://www.arb.ca.gov/msprog/moyer/guidelines/current.htm

- Moyer Guidelines Chapter 3 W.5.(A)(1) (specifies applicants must disclose other incentive fund applications
- Moyer Guidelines Chapter 3 X.9. (Specifies no Carl Moyer applications maybe be made for Voucher equipment still under contract)
- Moyer Guidelines Chapter 3 Z.4. (Specifies grantees must certify at contract that they have received no funding from other sources)
- Moyer Guidelines, Chapter 2, Section S and Chapter 3, Section Z.6.(B). (Specifies the geographic location of the operation of the equipment.)

On-road

- New purchase project must be 30% cleaner than the current new engine standard for NOx. There is no requirement to replace (and scrap) an existing engine. However, emission reductions are only based on the current year diesel engine as the baseline. (Moyer Guidelines, Chapter 4, Section D.3.)
- To be eligible for funding the guidelines take into consideration the in-use regulations and only fund early and extra emission reductions (Moyer Guidelines, Chapter 4, Section E and the Guidelines Supplemental document- "Fleet Rule Implementation Charts" p. 6-35).
- The funding amount is based on documentation for the average usage during the previous twenty four months (Moyer Guidelines, Chapter 5, Section C.5.(A) and Moyer Guidelines, Part 2:VIP Guidelines, Sections C.2.(A)(2))
- The VIP Guidelines fund only fleets of 10 or less trucks (Moyer Guidelines, Part 2:VIP Guidelines, Section C.1(A)) and take into account the compliance deadlines of the in-use Truck and Bus regulation, when determining eligibility. All other trucks are not eligible (Moyer Guidelines, Part 2:VIP Guidelines, Sections C.1 (B) and (G)-(K)). Projects must provide at least 2 years (fleets of 1-3 trucks) or 3 years (fleets of 4-10 trucks) early emission reductions. These compliance dates are incorporated into determining the trucks that are eligible for funding. (Moyer Guidelines, Part 2:VIP Guidelines, Appendix O and P). For instance, replacement of a Pre-1996 model year medium heavy-duty truck for a fleet of 1-3, is no longer eligible because of the rule compliance date for this model year truck (VIP Guidelines, Table P-1, page 76.)
- VIP projects must have operated 75% of the time in CA during previous 24 months (Moyer Guidelines, Part 2:VIP Guidelines, Sections C.2.(A)(3))

Off-Road

- Opportunities are limited to funding based on adopted regulations. General description includes opportunities for fleets and dates by which projects can be approved prior to regulatory compliance deadlines in order to be surplus. (Moyer Guidelines, Chapter 7, Table 7-1; Part 2: Off-Road Voucher Incentive Program, section C. 1. (A) & (B), page 3 of 59)
- Only equipment with uncontrolled engines eligible for replacement funding per Off-Road VIP to ensure surplus and maximum emission reductions realized (Part 2: Off-Road VIP Guidelines, Section C.1.(A), page 2 of 59).
- To be eligible for funding the guidelines take into consideration the in-use regulations and fund early and extra emission reductions. This must include at least two or three years of surplus emission reductions based on future compliance dates, and assure that

Moyer project reductions achieved cannot count towards a fleet's regulatory requirements for the duration of the project. (Moyer Guidelines, Chapter 7, sections E. through H. and Chapter 9, Section C. 7., 8, 9, and 10). The resulting years for which projects are eligible and the corresponding project life is provided in the Fleet rule Implementation Charts (Moyer Guidelines Supplemental document- "Fleet Rule Implementation Charts" p. 36-58.)

- In-Use Off-Road Diesel-Fueled Fleets regulation includes provisions that limit funded projects from receiving regulatory credit or benefit which ensures emission surplus. Equipment owners must report additional information to ensure surplus benefits according to funding program guidelines. (Title 13, California Code of Regulations, Section 2449(g)(1)(H)).
- Old equipment for replacement projects are required to be operational and verified through an inspection by the air district (Moyer Guidelines, Chapter 9, Section C. 2. (F))
- Old equipment usage for replacement projects must either be verified for the previous 24 months (Moyer Guidelines, Chapter 9, Section C. 2. (F) (1) or Part 2: Off-Road Voucher Incentive Program , C. 2. (A)(2) and (3), page 4 of 59) or if usage isn't available, the annual usage must be included in the contract throughout the contract term and be able to provide documentation to demonstrate that the equipment was operational for the previous year (Moyer Guidelines, Chapter 9, Section C.2.(F)(2))
- The Off-Road VIP Guidelines fund only small and medium fleets subject to the In-Use Off-Road Diesel-Fueled Fleets Rule, or agricultural tractors. (Moyer Guidelines, Part 2:Off-Road VIP Guidelines, Section C.1.(A)(1), (2), and (3), page 3 of 59). Equipment subject to the Cargo Handling or LSI In-Use rule is not eligible (Moyer Guidelines, Part 2:Off-Road VIP Guidelines, Sections C.1 (B) (1)-(3), page 3 of 59). Projects must provide at least 2 years (small fleets) or 3 years (medium fleets) early emission reductions. These compliance dates are incorporated into determining the equipment eligible for funding. For instance, large fleets are not eligible because 2014 is their first compliance deadline (Moyer Guidelines, Part 2:Off-Road VIP Guidelines, Sections C.1 (B) (1), page 3 of 59) and medium fleets are only eligible through 2013 because 2017 is their first compliance deadline (Moyer Guidelines, Part 2:Off-Road VIP Guidelines, Sections C.1(A)(3), page 3 of 59)
- Off-Road VIP projects must have operated 75% of the time in CA during previous 24 months (Moyer Guidelines, Part 2:Off-Road VIP Guidelines, Sections C.2.(A)(4), page 5 of 59)
- If subject to regulation, data from applicant must include information to determine if old equipment or equipment to be repowered is registered in Off-road In-Use regulations reporting system. (Moyer Guidelines, Chapter 7, Section E.1 (A) and Chapter 9, Section C.2.(D)).

Quantifiable

In order for the emissions and emission reductions to be attributed to an Economic Incentive Program (EIP) they must be quantifiable, in that they can reliably be measured or determined, as well as be replicated. The following references provide details on how the Guidelines ensure that the factors, as well as all formulas and instructions to calculate emissions reductions are publicly available, current and accurate, and that the data provided by the applicant is sufficient to accurately determine the emission reductions, and that checks are in place to ensure projects

are completed and emission reductions are fulfilled. Emissions benefits are calculated in a validated database. Factors and methodologies are tested, maintained and updated by ARB.

General Moyer

The Moyer Guidelines rely on the data and emissions factors inherent in ARB's emissions inventory, Executive Orders, as well as State and Federal regulatory emission standards. All factors used in determining a project's emission reductions, as well as the calculations themselves, are provided in the Guidelines, which are publicly available. Any modification to these factors within the Guidelines must be released to the public for a 45-day comment period prior to finalization by ARB's Executive Officer.

- Moyer Guidelines, Appendix D and G (Factors used in calculations)
- Moyer Guidelines, Appendix C (contains formulas and instructions)
- Moyer Guidelines, Supplemental document, "Sample Calculations" (contains formulas and instructions)
- Requirement Moyer Guidelines, Appendix C, Section B.5, and Supplemental document, "Sample Calculations" (contains explicit instructions regarding inputs)
- Moyer Guidelines, Chapter 3, Section Z.6.(B) (contains contractual usage requirements)
- Moyer Guidelines Chapter 2, Section S. (Requires 75% operation in California.)
- Moyer Guidelines Chapter 3, Sections Z.10. (Contractual obligation of the grantee to inspect funded equipment during the contract term.)
- Moyer Guidelines Chapter 3, Sections EE. (District requirement to annually audit a percentage of active projects)
- Chapter 1, Section E.7 (Allows ARB Executive Officer to modify the Guidelines under a public process, to keep them effective and up-to-date.)
- Moyer Guidelines Chapter 2, Section AA. (Requires emission reduction technologies to be certified or verified).

On-road

- The fuel based calculations must use converted emissions standards for baseline and reduced emission calculations. The mileage-based calculations must use mileage-based emission factors for baseline and reduced emission calculations. (Moyer Guidelines, Chapter 4, Section D.1 (F))
- In determining the appropriate emissions factors the engine model year, not the vehicle model year must be used (Moyer Guidelines, Chapter 4, Section D.1 (H))

Off-Road

- Engine emission standards adopted by ARB and U.S. EPA must be used for calculating benefits for off-road engines and equipment. (Moyer Guidelines, Chapter 7, Section D.1.(C))
- If an engine built under the "Tier 4 Early Introduction Incentive for Engine Manufacturers" is funded, the emission reductions calculated are to the Tier 3 emission factors to ensure no added regulatory benefits are assumed from this equipment. (Moyer Guidelines Chapter 7, Section D.1.(D) and Chapter 9, Section C.3.(A)(7))

- Maximum project life for all off-road non-farm compression-Ignition (CI) equipment is based on equipment type except for farm equipment which, by statute, is allowed a 10 year project life, but can be reduced if the applicant requests (Moyer Guidelines, Chapter 7, Section D.1.(A) and Chapter 9, Section C. 1. (C))
- Old equipment usage for replacement projects must either be verified for the previous 24 months (Moyer Guidelines, Chapter 9, Section C. 2. (F) (1) and Part 2:Off-Road Voucher Incentive Program, Section C.2.(A)(3), page 4 of 59) or if usage isn't available, the annual usage must be included in the contract throughout the contract term and be able to provide documentation to demonstrate that the equipment was operational for the previous year (Moyer Guidelines, Chapter 9, Section C.2.(F)(2))
- Off-Road Voucher Incentive Program projects– equipment must have operated at least 75 percent of the time within CA. (Moyer Guidelines, Part 2:Off-Road VIP Section C.2.(A)(4), page 5 of 59).

Enforceable

Emission reductions are enforceable if there is an enforceable contract that defines the requirements, as well as the parties liable for fulfilling the requirements. The following references provide details on how the Guidelines require enforceable contracts, reporting by the grantee, and project inspections to ensure that contract requirements are met and that the actual baseline replaced/repowered and new equipment purchased is consistent with the specifications in the contract.

General Moyer

The Carl Moyer Guidelines require that the grantee enter into contract for the life of the project for which emission reductions are being claimed. The district and grantee are signatories of the contract, and ARB is specified as a third party to the contract, with the right to enforce the terms of the contract. The guidelines require that non-performing projects be addressed by transferring funds to an eligible project, adjusting the contracted project life or returning funds to the program.

- Moyer Guidelines, Chapter 3, Section Z, (Minimum contract requirements,.)
- Moyer Guidelines Chapter 3, Section Z.11. (Liable parties and repercussions for non-performance, including the requirement that ARB be specified as a 3rd party.)
- Moyer Guidelines, Chapter 3, Sections Z.9 and DD (Requirements for grantees to report annually)
- Moyer Guidelines Chapter 3, Sections AA and BB. (Pre and post-inspection requirements)
- Moyer Guidelines Chapter 3, Sections EE. (District requirement to annually audit a percentage of active projects)
- Moyer Guidelines Chapter 3, Section FF.3 and 4. (Specifies that non-performing projects be addressed through contract enforcement)
- Moyer Guidelines Chapter 3, Section V (requires ARB to audit air district programs to insure project information and resulting emission benefits are real, reproducible, and accurate).
- Moyer Guidelines Chapter 3, Section FF (mechanism in place to hold air districts accountable for insuring project emission reductions are achieved).

On-road

- VIP Projects- The owner must agree to return annual surveys and to be available for follow up inspections. (Moyer Program Guidelines, Part 2:VIP Guidelines, Section C.2 (B)(4))
- VIP Projects- The Air District is responsible to perform a pre-inspection of the existing vehicle and a post-inspection of the replacement vehicle (VIP Guidelines, On-road Heavy-Duty Vehicles, Section C.7 (T))

Off-Road

- For replacement projects, air districts are responsible for completing inspections of the old equipment and new equipment (Moyer Guidelines, Chapter 9, Section C.5.(G))
- Air district required to document equipment destruction of old equipment and replacement at salvage and post-inspection to ensure equipment is consistent with contract (Moyer Guidelines, Chapter 9, Section C.4 and 5.(G)).
- Off-Road replacement project contracts must include that equipment is maintained in accordance with manufacturer specifications for the life of the project enforceable according to contract requirements. (Moyer Guidelines, Chapter 9, Section C.1.(D) and Section C.3.(F)).
- All new replacement equipment must have an installed and fully operational hour meter. If fuel usage has been approved for determining emission reductions, then future annual usage must be based on fuel logs, purchase receipts or ledger entries specific to the funded equipment (Moyer Guidelines, Chapter 9, Section C.3.(I))
- Off-Road Voucher Incentive Program projects– owner must agree to own and operate equipment at least 75% in CA, return annual surveys indicating usage, and be available for follow up inspections at the request of the air district or ARB (Moyer Program Guidelines, Part 2: Off-Road Voucher Incentive Program, C.2.(A)(11), page 6 of 59).
- Off-Road Voucher Incentive Program projects - The owner must agree to return annual surveys and to be available for follow up inspections. (Moyer Program Guidelines, Part 2:Off-Road VIP Guidelines, Section C.2 (A)(11), page 6 of 59)
- Off-Road Voucher Incentive Program projects - The Air District is responsible to perform a pre-inspection of the existing equipment and a post-inspection of the replacement equipment (Moyer Guidelines, Part 2:Off-Road VIP Guidelines, Section C.5.(S), page 12 of 59)
- Off-Road Voucher Incentive Program projects- Owner signs declarations on application under penalty of perjury that statements true and correct and understands declarations made including ARB right to enforce terms of agreement. (Part 2: Off-Road VIP Guidelines, Application Package, page 29 of 59).

Permanent

Emission reductions used to meet air quality attainment requirements must be permanent. The following references provide details on how the Guidelines ensure that the emission reductions generated by the programs reduce emissions for the life of the project in the geographic area specified in the contract, and that these projects are monitored before, and throughout the contract and project life.

Moyer General

In order to ensure that the emission reductions are permanent, the Carl Moyer Guidelines require that pre and post-inspections be conducted by the districts, as well as annual audits of active projects. Additionally, the engines in repower and replacement projects must be destroyed.

- Moyer Guidelines, Chapter 3, Sections Z.9 and DD (Requirements for grantees to report annually)
- Moyer Guidelines Chapter 3, Sections AA and BB. (Pre and post-inspection requirements)
- Moyer Guidelines Chapter 3, Sections EE. (District requirement to annually audit a percentage of active projects)
- Moyer Guidelines Chapter 3, Section BB.4 (Destruction requirements for baseline engine)

On-road

- New purchase project must be 30% cleaner than the current new engine standard for NOx. There is no requirement to replace (and scrap) an existing engine. However, emission reductions are only based on the current year diesel engine as the baseline. (Moyer Guidelines, Chapter 4, Section D.3.)
- For VIP and Fleet Modernization replacement projects, the dismantler must destroy the vehicle and the vehicles engine. The dismantler must notify the air district that the vehicle is destroyed and then must be documented by the air district in person and also must provide verification of filing DMV form 488C. (VIP Guidelines, On-road Heavy-Duty Vehicles, Section C.10 (C) and Moyer Guidelines, Chapter 5, Section C.11)

Off-Road

- All engines replaced as part of an off-road repower project must be destroyed and rendered useless, in accordance with requirements with Chapter 3, Section BB.4. (Moyer Guidelines, Chapter 7, Section D. 2. (I))
- All new replacement equipment must have an installed and fully operational hour meter. If fuel usage has been approved for determining emission reductions, then future annual usage must be based on fuel logs, purchase receipts or ledger entries specific to the funded equipment (Moyer Guidelines, Chapter 9, Section C.3.(I))
- Equipment replaced requires the high-emitting equipment be scrapped to permanently remove it from service. Inspections of the destroyed piece of equipment must occur. (Moyer Guidelines, Chapter 9, Sections C. 4. and C. 4. (D)
- Air districts are responsible for completing inspections of the old equipment and new equipment (Moyer Guidelines, Chapter 9, Section C.5.(G))
- Off-Road Voucher Incentive Program projects – inspections must occur on the existing equipment, replacement equipment, and the destroyed equipment (Part 2: Off-Road Voucher Incentive Program , Section C.5.(S), page 12 of 59 and (CC), page 14 of 59).

Additional Carl Moyer Program Components

- The following references specify how ARB ensures that any case-by-case approval determinations do not impact the SIP creditability of the emission reductions for the project.
    - Moyer Guidelines, Chapter 2, Section T
    - Moyer Guidelines, Chapter 3, Section Y
- The following references specify that all information, including information such as emission factors, must go through public approval process.
    - Moyer Guidelines, Chapter 1, Section E.7
    - Health and Safety Code 44287(a) and (b)
- The following references specify that surplus, quantifiable, enforceable and permanent emissions reductions are overseen via the Incentives Program Review Process
    - Moyer Guidelines, Chapter 3 Section V
    - Carl Moyer Program Review Guidelines http://www.arb.ca.gov/msprog/moyer/audits/09audit_procedures.pdf