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

APPENDIX G: Prop 1B Integrity Demonstration

Release Date: September 22, 2014
Hearing Date: October 23, 2014

California Environmental Protection Agency

Air Resources Board

San Joaquin Valley Air Pollution Control District Proposed Rule 9610
Responses to U.S. EPA's Request to Address "Integrity Elements" in the
Proposition 1B: Goods Movement Emission Reduction Program Guidelines
(August 2013)

Introduction

For consideration of the San Joaquin Valley Air Pollution Control District (SJVAPCD) Proposed Rule 9610, the U.S. EPA requested that the Air Resources Board (ARB) describe how their incentive programs would ensure that emission reductions are surplus, quantifiable, enforceable, and permanent. This document addresses these "integrity elements" for ARB's Proposition 1B Goods Movement Emission Reduction Program (Proposition 1B). Please note that this document only applies to those emission reductions that would be eligible for credit under Rule 9610 – it does not apply to all of the emission reductions generated by Proposition 1B projects.

The information provided below reflects the May 21, 2013 version of the SJVAPCD Proposed Rule 9610. Under this version of the proposed rule, only heavy duty diesel truck repower, replacement or retrofit incentive projects are being included for ARB's Proposition 1B Program. The proposed rule does not include any projects covered by truck reuse programs. The references to address U.S. EPA's "integrity elements" are limited to those that pertain to the heavy duty diesel truck projects. References include the applicable page numbers from three versions of the Proposition 1B Guidelines (2013, 2010 and 2008, respectively).

SURPLUS

Integrity Element Background

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. Provided below are details on how the Proposition 1B Program Guidelines (Guidelines) ensure that the emission reductions are not required by any regulation, the baseline equipment was being used and operated within the state, and that project benefits are not already accounted for in future-year inventories.

Proposition 1B Program Requirements

The California statute that established the Proposition 1B Program states that funding shall be used for emission reductions not otherwise required by law or regulation, including existing regulations that are incorporated into a SIP (California Health and Safety Code Sections 39625-39627.5). As a result, when developing the Guidelines, ARB staff used current and upcoming regulatory compliance dates to determine which projects are eligible and the period during which projects can claim "early or extra" emission reductions. The Guidelines also include procedures to ensure that reductions are not claimed for projects impacted by future ARB regulations. To quantify emission reductions, the Guidelines state that ARB staff shall develop "Projects Benefits Calculators" which are publicly available on the Program website. ARB regularly updates these calculators to incorporate updated emissions inventory methodologies and to reflect upcoming regulatory deadlines that may occur during the project life.

For emission reductions that would be eligible under the proposed rule, projects must be installed and in operation prior to any compliance date and/or go beyond regulatory requirements, and cannot be used to demonstrate fleet compliance for a set period of time (from one to three years, depending on the category). SIP inventories reflect compliance with already adopted regulations. As part of the SIP development and/or revision process, ARB reviews the Proposition 1B 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.

For all projects, the Guidelines require that local agencies and equipment owners document and verify that the old equipment was in use and was used in the geographic area of interest for at least 24 months prior to application.

Applicable References in Proposition 1B Guidelines – "Surplus" Element

1. Emission Reductions Must Be Early or Extra
    - Funding must be used for emission reductions not otherwise required by law or regulation. (2013 Guidelines: Chapter I. Overview, Section B. Authority, pg.3. 2010 Guidelines: pg.3. 2008 Guidelines: pg.2)
    - Local agencies must ensure that funding is used for emission reductions not otherwise required by law or regulation – both existing and upcoming. (2013 Guidelines: Chapter III. Local Agency Project Proposal, Section B. Legal and Program Restrictions, pp.60-62. 2010 Guidelines: pp.57-59. 2008 Guidelines: pp.47-49)
    - The Guidelines specifically list trucks that are ineligible because regulations are fully in effect and it's no longer possible to achieve early or extra reductions. (2013 Guidelines: Appendix A, Project Specifications for Heavy Duty Diesel Trucks, pg.A-1. 2010 Guidelines: pp.A-1 to A-6. 2008 Guidelines: pp.A-1 to A-3 and B-1 to B-5)
    - Operational Deadlines and the Allowable Use of Equipment for Fleet Compliance are publicly available on the Program website. (http://www.arb.ca.gov/bonds/gmbond/gmbond.htm)

2. Quantifying Emission Reductions
    - ARB must develop "Projects Benefits Calculators" to determine emission reductions. (Chapter II, ARB Program Administration, Section C.2 Project Specifications and Emissions, Quantifying project benefits, pg.28. 2010 Guidelines: pg.26 2008 Guidelines: pg.20)
    - "Projects Benefits Calculators" and documents that describe the emissions calculations methodologies are publicly available on the Program website, but the Guidelines do not contain the specific emission factors or other factors used in each calculator. (http://www.arb.ca.gov/bonds/gmbond/gmbond.htm)
    - For truck projects, the current "Projects Benefits Calculator" uses emission factors obtained from the On-Road Heavy Duty Diesel Vehicles (In-Use) Regulation. These factors are publicly available on the following ARB website:

"The Truck and Bus Regulation, The Drayage Truck Regulation and The Tractor-Trailer Greenhouse Gas Regulation Amendments, Background Materials on Air Emissions, Health Impacts, and Economic Impacts", AB1085 documentation, Emission Inventory Database (Nov. 17, 2010), Emission Rates tab:
http://www.arb.ca.gov/msprog/onrdiesel/1085/2010/1085.htm
http://www.arb.ca.gov/msprog/onrdiesel/1085/2010/truck%20and%20bus%20rule_ei_1112_2010_viewlink_fixed.zip

- Additional information on the emission inventory methodology for the current truck "Projects Benefits Calculator" is publicly available on the ARB website in the following two Technical Support Documents:

  2008 Technical Support Document
  Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Proposed Regulation for In-Use On-Road Diesel Vehicles, Technical Support Document, Appendix G, Emissions Inventory Methodology and Results. October 2008:
  http://www.arb.ca.gov/regact/2008/truckbus08/truckbus08.htm
  http://www.arb.ca.gov/regact/2008/truckbus08/appg.pdf

  2010 Technical Support Document
  Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Proposed Amendments to the Truck and Bus Regulation, the Drayage Truck Regulation and the Tractor-Trailer Greenhouse Gas Regulation, Appendix G, Emissions Analysis Methodology and Results, Medium-Heavy Duty Diesel Trucks, Heavy-Heavy Duty Diesel Trucks, and Regulated Bus Categories. October 2010:
  http://www.arb.ca.gov/regact/2010/truckbus10/truckbus10.htm
  http://www.arb.ca.gov/regact/2010/truckbus10/truckbusappg.pdf

- For truck projects under the 2008 Guidelines, the "Projects Benefits Calculator" (dated March 2008) uses emission factors from EMFAC2007 V2.3 (Nov. 1 2006). ARB staff used the output from EMFAC2007 to get statewide annual average emissions from heavy heavy-duty diesel trucks and the associated vehicle miles travelled (VMT). To determine average emission factors by engine model year, staff divided emissions by VMT to get emission factors in grams per mile. The EMFAC2007 model is publicly available on the following ARB website:
  http://www.arb.ca.gov/msei/documentation.htm

3. Project Life
   - The Guidelines specify the allowable project life for each category. (Appendix A, Project Specifications for Heavy Duty Diesel Trucks, pp.A-3 to A-5.
     2010 Guidelines: pp.A-3 to A-6. 2008 Guidelines: pp.A-1 to A-3 and B-1 to B-5)
   - Local agencies shall not modify the project life options. (Chapter III, Local Agency Project Proposal, Section B. Legal and Program Restrictions, pg.64.
     2010 Guidelines: pg.60. 2008 Guidelines: pg.55)

4. Activity Data
    - Local agencies must verify project eligibility, including verification of registration documents and vehicle miles travelled (VMT) data to confirm California operation for the past two years. (Chapter IV. Local Agency Project Implementation, Section A.5. Evaluation and GMOD entry of equipment project applications, pp.80-81. 2010 Guidelines: pg.76. 2008 Guidelines: pp.64-65)
    - Equipment owners must provide documentation of activity data for the old equipment during the past two years including: verification of California registration, at least 75% California operation, vehicle miles travelled, percentage of time in each trade corridor. (Appendix A, Project Specifications for Heavy Duty Diesel Trucks, pp.A-1, A-9, A-10. 2010 Guidelines: pp.A-1, A-9, A-10. 2008 Guidelines: pp.A-1, A-5 to A-7, B-1, B-7 to B-10)
    - Local agencies must verify that old equipment is operational during a pre-inspection. (Chapter IV. Local Agency Project Implementation, Section A. Project Implementation Requirements, pg.90. 2010 Guidelines: pp.82-83. 2008 Guidelines: pp.68-69)
    - Equipment owners must commit to operate at least 90% in California and at least 50% within the four designated trade corridors, during the entire project life. (Appendix A, Project Specifications for Heavy Duty Diesel Trucks, pg.A-2. 2010 Guidelines: pg.A-2. 2008 Guidelines: pp.A-1 to A-3 and B-1 to B-5)

QUANTIFIABLE

Integrity Element Background

In order for emissions and emission reductions to be attributed to an Economic Incentive Program (EIP), they must be quantifiable which means they can be reliably measured or determined and be replicated. Provided below are details on how the Proposition 1B Program quantifies emission reductions and ensures that the calculation methodologies are publicly available, current and accurate. Also addressed are the Proposition 1B requirements to ensure that data provided by the applicant is sufficient to accurately determine emission reductions.

Proposition 1B Program Requirements

The Guidelines state that ARB shall develop and make available on the Proposition 1B website "Projects Benefits Calculators" that quantify emission reductions and cost-effectiveness. These calculators are publicly available on the website, along with documents that describe the emissions calculations methodologies, but the Guidelines do not include the specific emission factors used in each calculator. Emission reductions estimates rely on the data and emissions factors inherent in ARB's emissions inventory, and adopted regulations, as well as State and Federal regulatory emission standards. Baseline emissions from old equipment are calculated based on data provided by the applicant and verified by the local agencies. Future emissions for new equipment are based on emission factors for equipment meeting the emissions standards

specified in the Guidelines. Both emissions benefits and cost-effectiveness contribute to a competitive ranking, based on a formula contained in the Guidelines. To ensure that the expected emission reductions actually occur in the geographic area of interest and within designated time frames, the Guidelines require ARB and local agencies to conduct ongoing project evaluations.

Applicable References in Proposition 1B Guidelines – "Quantifiable" Element

1. Emission Reductions Calculation Methods
    - ARB must develop "Projects Benefits Calculators". (Chapter II, ARB Program Administration, Section C.2 Project Specifications and Emissions, Quantifying project benefits, pg.28. 2010 Guidelines: pg.26. 2008 Guidelines: pg.20)
    - "Projects Benefits Calculators" and documents that describe the emissions calculations methodologies are publicly available on the Program website, but the Guidelines do not contain the specific emission factors or other factors used in each calculator. (http://www.arb.ca.gov/bonds/gmbond/gmbond.htm)
      (Please see additional references for emission factors under the "Surplus" section.)

2. Activity Data to Support Emission Reductions Calculations
    - Equipment owners must provide documentation of activity data for the old equipment during the past two years including: verification of California registration, at least 75% California operation, vehicle miles travelled, percentage of time in each trade corridor. (Appendix A, Project Specifications for Heavy Duty Diesel Trucks, pp.A-1, A-9, A-10. 2010 Guidelines: pp.A-1, A-9, A-10. 2008 Guidelines: pp.A-1, A-5, A-6, B-1, B-7 to B-10)

3. Requirements for New Equipment
    - All diesel engines for repower or replacement projects must be certified by ARB Executive Order to meet 2010 emissions standards. The Guidelines do not allow funding for uncertified or unverified diesel engines. (Appendix A, Project Specifications for Heavy Duty Diesel Trucks, pg.A-2. 2010 Guidelines: pp.A-1 to A-3. 2008 Guidelines: pp.A-1 to A-3 and B-1 to B-4)

4. Evaluations to Ensure Emission Reductions Occur
    - ARB staff must conduct ongoing evaluations of local agency projects, including a review of project records to ensure consistency with emission reduction goals. (Chapter II. ARB Program Administration, Section F.4. Ongoing evaluations, pg.48. 2010 Guidelines: pp.45-46. 2008 Guidelines: pp.35-36)
    - Local agencies must evaluate projects on an ongoing basis to meet accountability requirements. Evaluation efforts include a variety of measures (e.g., site inspections; reviews of reports, records, activity logs, etc.). (Chapter IV. Local Agency Project Implementation, Section D. Ongoing Local Agency Evaluation of Equipment Projects, pg.107. 2010 Guidelines: pg.96. 2008 Guidelines: pg.86)

ENFORCEABLE

Integrity Element Background

Emission reductions are enforceable if there are legally binding grant agreements and contracts that define the requirements and the parties liable for fulfilling the requirements. Provided below are details on how the Guidelines require enforceable contracts, recordkeeping, reporting, and project inspections to ensure that contract requirements are met and that equipment is consistent with contract specifications.

Proposition 1B Program Requirements

The Guidelines require the local agency and the equipment owner to enter into contract for the life of the project. For emission reductions that would be eligible under the proposed rule, the contract life is either equal to or greater than the number of years before action is required under applicable ARB regulations. This requirement ensures that all surplus emission reduction benefits occur during the life of the project. The Guidelines also require ARB to execute grant agreements with local agencies. Under these grant agreements, the local agencies authorize ARB to inspect equipment projects and obtain access to records. For both project contracts and grant agreements, the Guidelines define actions that constitute contract non-performance and remedies for non-performance.

Applicable References in Proposition 1B Guidelines – "Enforceable" Element

1. Grant Agreements and Project Contracts
    - ARB's funding decisions shall become legally enforceable through executed grant agreements between ARB and the selected local agencies. The grant agreements must contain enforcement provisions that authorize ARB to inspect equipment projects and give ARB access to evaluate or audit Program records. (Chapter II, ARB Program Administration, Section E.10 ARB Process to Award Funds to Local and State Agencies, Local agency grant agreement, pp.38-41. 2010 Guidelines: pp.35-38. 2008 Guidelines: pp.29-32)
    - The Guidelines describe actions that constitute local agency non-performance (e.g., funding ineligible projects) and remedies for local agency non-performance (e.g., recapture of funds). (Chapter II, ARB Program Administration, Section F.7. Local agency non-performance, pp.55-58. 2010 Guidelines: pp.52-55. 2008 Guidelines: pp.42-45)
    - Funding commitments shall become legally enforceable only through executed contracts between the local agency and equipment owner. The Guidelines require certain provisions in each contract, including enforcement and remedies for non-performance. (Chapter IV. Local Agency Project Implementation, Section A.11. Project Implementation Requirements, Equipment Project Contracts, pp.91-94. 2010 Guidelines: pp.83-86. 2008 Guidelines: pp.69-72)

- Equipment owners shall sign a legally binding contract with the local agency including project milestones and completion deadlines. (Appendix A, Project Specifications for Heavy Duty Diesel Trucks, pg.A-1. 2010 Guidelines: pg.A-2. 2008 Guidelines: pp.A-1 to A-3 and B-1 to B-5)
- The Guidelines describe actions that constitute contract non-performance (e.g., failure to comply with Guidelines) and remedies for non-performance (e.g., recovery of funds). (Chapter VI. General Equipment Project Requirements, Section K. Equipment Project Non-Performance pg.122. 2010 Guidelines: pp.107-108. 2008 Guidelines: pp.93-94)

2. Recordkeeping and Reporting
    - Equipment owners must comply with recordkeeping, reporting, and Proposition 1B review or fiscal audit requirements, for the duration of the project life. The Guidelines also specify recordkeeping requirements that extend beyond the duration of the project. (Appendix A, Project Specifications for Heavy Duty Diesel Trucks, pp.A-1, A-16. 2010 Guidelines: pp.A-2, A-18. 2008 Guidelines: pp.A-1 to A-4 and B-1 to B-6)
    - Equipment owners must submit annual reports that include certification of the required California-based VMT and certification that at least 50 percent of travel occurred within the four trade corridors. (Appendix A, Project Specifications for Heavy Duty Diesel Trucks, pg.A-17. 2010 Guidelines: pg.A-18. 2008 Guidelines: pp.A-4, B-6)
    - Local agencies must submit status reports for all projects (quarterly, semi-annually, after project completion). (Chapter IV. Local Agency Project Implementation, Section E. Local Agency Reporting Requirements pp.107-109. 2010 Guidelines: pp.96-98. 2008 Guidelines: pp.86-89)

3. Inspections
    - Local agencies must conduct and document pre-inspections after projects have been identified for funding. However, the Guidelines state that pre-inspections are not required if the existing equipment was previously funded by the Proposition 1B Program within two years of the project application date. (Chapter IV. Local Agency Project Implementation, Section A.10. Project Implementation Requirements, Equipment project pre-inspections, pg.90. 2010 Guidelines: pp.82-83. 2008 Guidelines: pp.68-69)
    - Local agencies must conduct and document project post-inspections on all funded projects. (Chapter IV. Local Agency Project Implementation, Section A.16. Project Implementation Requirements, Equipment project post-inspections, pg.99. 2010 Guidelines: pp.90-91. 2008 Guidelines: pp.77-80)
    - The Project Specifications provide detailed requirements on timing and data verification for post-inspections. (Appendix A, Project Specifications for Heavy Duty Diesel Trucks, pg.A-15. 2010 Guidelines: pp.A-16, A-17. 2008 Guidelines: pp.77-80)

- For both pre- and post-inspections, the Guidelines specify the items that must be verified during the inspection to ensure that program information is consistent with actual equipment (e.g., odometer readings, VINs, serial numbers, filter retrofits, etc.) (see references noted above).

PERMANENT

Integrity Element Background

Emission reductions used to meet air quality attainment requirements must be permanent. Provided below are details on how the Guidelines ensure that funded projects achieve emission reductions for the life of the project in the geographic area specified in the contract, and that these projects are monitored during the project life.

Proposition 1B Program Truck Requirements

To ensure that emission reductions are permanent, the Guidelines require that old equipment be scrapped (permanently removed from service) for truck repower and replacement projects. Local agencies are responsible for ensuring that scrappage occurs and the Guidelines specify the applicable procedures and documentation requirements to verify scrapped engines. By comparing data from the pre-inspection with information provided after scrappage, local agencies confirm that the correct engine was destroyed. To further ensure that emission reductions are permanent, the Guidelines require ARB and local agencies to conduct ongoing project evaluations.

To verify that emission reductions are occurring in the geographic area of interest, the Guidelines require recordkeeping and reporting for local agencies and equipment owners, during the entire project life.

Applicable References in Proposition 1B Guidelines – "Permanent" Element

1. Scrap Requirements
    - Local agencies shall ensure that old equipment is scrapped and they must obtain digital documentation to verify the scrappage, including photos of the destroyed engine. Engine blocks shall be punctured and physically destroyed in such a manner to eliminate the possibility of future operation. Dismantlers are required to be licensed by the Department of Motor Vehicles (DMV). (Chapter IV. Local Agency Project Implementation, Section A.14. Project Implementation Requirements, Equipment project scrap requirements, pp.97-98. 2010 Guidelines: pp.88-89. 2008 Guidelines: pp.73-75)

- The Guidelines contain details on scrappage time frames and documentation requirements. For both repower and replacement projects, the dismantler shall provide proof of scrappage to the local agency. For replacement projects, the dismantler shall also provide a copy of the form submitted to DMV to permanently remove the vehicle from service (REG 488C, REG 42). (Appendix A, Project Specifications for Heavy Duty Diesel Trucks, pp.A-13, A-14. 2010 Guidelines: pp.A-13 to A-15. 2008 Guidelines: pp.73-75)
- Local agencies shall be responsible for collecting all necessary information prior to scrap/disposal activities (e.g., during pre-inspection). All information collected and recorded must be readily accessible to verify that scrap and disposal procedures were conducted for the appropriate engine. (Chapter IV. Local Agency Project Implementation, Section A.14. Project Implementation Requirements, Equipment project scrap requirements, pp.97-98. 2010 Guidelines: pp.88-89. 2008 Guidelines: pp.73-75)

2. Evaluations to Ensure Scrappage Occurs
    - ARB staff must conduct ongoing evaluations of local agency projects, including a review of project records to ensure consistency with emission reduction goals. (Chapter II. ARB Program Administration, Section F.4. Ongoing evaluations, pg.48. 2010 Guidelines: pp.45-46. 2008 Guidelines: pp.35-36)
    - Local agencies must evaluate projects on an ongoing basis to meet accountability requirements. Evaluation efforts include a variety of measures (e.g., site inspections; reviews of reports, records, activity logs, etc.). (Chapter IV. Local Agency Project Implementation, Section D. Ongoing Local Agency Evaluation of Equipment Projects, pg.107. 2010 Guidelines: pg.96. 2008 Guidelines: pg.86)

3. Recordkeeping and Reporting to Verify Emission Reductions in Geographic Area of Interest
    - Equipment owners must comply with recordkeeping, reporting, and Program review or fiscal audit requirements, for the duration of the project life. The Guidelines also specify recordkeeping requirements that extend beyond the duration of the project. (Appendix A, Project Specifications for Heavy Duty Diesel Trucks, pp.A-1, A-16. 2010 Guidelines: pp.A-2, A-18. 2008 Guidelines: pp.A-1 to A-4 and B-1 to B-6)
    - Equipment owners must submit annual reports that include certification of the required California-based VMT and certification that at least 50 percent of travel occurred within the four trade corridors. (Appendix A, Project Specifications for Heavy Duty Diesel Trucks, pg.A-17. 2010 Guidelines: pg.A-18. 2008 Guidelines: pp.A-4, B-6)
    - Local agencies must submit status reports for all projects (quarterly, semi-annually, after project completion). (Chapter IV. Local Agency Project Implementation, Section E. Local Agency Reporting Requirements pp.107-109. 2010 Guidelines: pp.96-98. 2008 Guidelines: pp.86-89)