

APPENDIX C: Locomotives

A. Equipment Project Specifications

Locomotives

<p>Eligible Equipment</p>	<p>Diesel-powered freight locomotives with no or minimal emissions control technology (i.e., uncontrolled, or meeting Tier 0 or Tier 1 standards).</p> <p>Equipment owner must demonstrate:</p> <ul style="list-style-type: none"> • Continuous operation in California for the past 2 years. • At least 50 percent operation within trade corridor(s) for the past 2 years. • Estimated diesel fuel usage greater than 20,000 gallons per year.
<p>Option (1): Switcher Locomotive</p> <p>Requirements</p>	<p>Partial funding for the lower of 50% or \$750,000 per locomotive to replace, rebuild, or repower an uncontrolled, Tier 0 or Tier 1 switcher locomotive with a new generator-set that achieves emissions of 3.0 g/bhp-hr or less for NOx, and 0.1 g/bhp-hr or less for PM, or an alternative technology with equivalent emission levels using U.S. EPA engine certification levels with ARB verification. Eligible locomotive costs include a new chassis, a new or rebuilt engine, and mechanical/electrical systems components necessary for safe operation.</p> <p>Equipment owner shall:</p> <ul style="list-style-type: none"> • Commit to 15 years of 100% operation within the trade corridors; periodic out-of-state maintenance may be permitted if outlined in the contract between the local agency and equipment owner. • Scrap or ban old engine/locomotive from California operation. • Install an active GPS unit on both old (if not scrapped) and new equipment, fund data collection, and report location data. • Agree to equipment inspections. • Comply with record-keeping, reporting, and audit requirements. • Sign a legally binding contract with the local agency including project milestone and completion deadlines. • Properly maintain upgraded equipment in good operating condition and according to manufacturer's recommendations. • Demonstrate proof of equipment warranty and comprehensive insurance on upgraded equipment. • (For UP and BNSF) Demonstrate how the railroad intends to comply with 1998 agreement for the South Coast Air Basin by submitting a compliance plan to ARB prior to application for bond funding in the Los Angeles/Inland Empire corridor.

Locomotives (continued)

<p>Option (2): Line-Haul Locomotive</p> <p>Requirements</p>	<p>Partial funding for the lower of 50% or \$1 million per locomotive to replace or rebuild an uncontrolled, Tier 0 or Tier 1 line haul locomotive with a new Tier 2 or lower-emission engine. Eligible locomotive costs include a new chassis, a new or rebuilt engine, and mechanical/electrical systems components necessary for safe operation.</p> <p>Equipment owner shall:</p> <ul style="list-style-type: none"> • Commit to 15 years of 100% California-only operation. This new intrastate line-haul locomotive shall use California ARB diesel fuel. Periodic out-of-state maintenance may be permitted if outlined in the contract between the local agency and equipment owner. • Commit to at least 50% of operation in trade corridors for duration of contract term. • Scrap or ban old engine/locomotive from California operation. • Install an active GPS unit on both old (if not scrapped) and new equipment, fund data collection, and report location data. • Agree to equipment inspections. • Comply with record-keeping, reporting, and audit requirements. • Sign a legally binding contract with the local agency including project milestone and completion deadlines. • Properly maintain upgraded equipment in good operating condition and according to manufacturer's recommendations. • Demonstrate proof of equipment warranty and comprehensive insurance on upgraded equipment. • (For UP and BNSF) Demonstrate how the railroad intends to comply with the 1998 agreement for the South Coast Air Basin by submitting a compliance plan to ARB prior to application for bond funding in the Los Angeles/Inland Empire corridor.
<p>Project Cost Assumptions</p>	<ul style="list-style-type: none"> • Estimated total cost of new switcher generator-set is ~\$1.5 million. • Estimated total cost of an eligible Tier 2 locomotive is ~\$2.0-2.5 million.
<p>Excluded Funding Components</p>	<ul style="list-style-type: none"> • Auto start/stop devices required by regulation or agreements. • GPS units and monitoring and reporting costs. • Remote Control Locomotive (RCL) units.

B. Major Milestones for Project Completion

- Equipment order.
- Equipment acquisition/installation.
- Submittal of invoice to local agency for reimbursement.
- 1st reporting milestone 6 months after equipment project completion.

C. Recordkeeping Requirements

Equipment owners shall retain, at minimum, all documents, invoices, and correspondence associated with the application, award, contract, monitoring, enforcement, and reporting requirements at least two years after equipment project contact term or three years after final payment, whichever is later. Records shall be readily available and accessible to the local agency, ARB, or designee upon request for the purposes of ongoing evaluations or auditing.

D. Annual Reporting Requirements

Equipment owners shall be responsible for annual reporting to the local agency that includes, but is not limited to:

- Contact information (owner name, company, address, phone).
- Build number, date, builder, builder model.
- Date of equipment installation.
- Locomotive type and name of home rail yard.
- Report of Megawatt-hours of operation.
- Representative profile data to determine engine duty cycle.
- Certification of California-only operation.
- Summary of maintenance performed (including location) and inspections conducted.
- GPS data in a usable format.
- Certification and documentation of at least 50% of travel in trade corridors.
- Certification that the bond-funded project was used in accordance with signed contract and that all information submitted is true and accurate.
- Other information as requested by ARB or the local agency.

E. Ongoing Evaluations and Audits

Equipment owners shall agree to ongoing equipment project evaluations and equipment project audits by the local agency, ARB, or authorized designees. ARB and local agency audit requirements and provisions are found in Chapter II.E.5.

F. Application Information

Equipment owners shall provide the following information and documentation in addition to the requirements described in Chapter IV and other information ARB or local agencies may request on the equipment project applications.

1. General contact information

This section applies to all equipment project options listed below.

- Organization/agency/company name
- Railroad Class (1, 2, or 3)
- Mailing address
- Primary contact name and phone number
- Person with equipment contract signing authority (Owner)
- Small business information
 - Number of locomotives
 - Number of employees
 - Annual gross income

2. Option (1): switcher locomotive

a) Current equipment and activity information

- Switcher data
 - Locomotive type (traditional switcher, alternative technology switcher)
 - Build number, date
 - Builder, builder model
 - Locomotive make, model, model year, serial number, roster number
 - Engine data (per engine)
 - Modifications (roots blown, turbo-charged, other)
 - Control level (uncontrolled, Tier 0, 1)
 - Engine family, make and type, model, engine year
 - Serial number
 - Horsepower, number of cylinders
 - Fuel type
 - Electronic monitoring unit device type and model (if equipped)
- Switcher documentation
 - Documentation of current ownership
- Activity data for the past 2 years
 - Annual fuel consumption (gallons of fuel)
 - Annual megawatt hours of operation
 - Profile of locomotive duty cycle (i.e., idle time, throttle notch settings per increment of time for each engine)
- Activity documentation for past 2 years
 - Documentation of at least 50% of operation in corridors may be required
 - Documentation of fuel consumption may be requested
 - Documentation of megawatt hours of operation may be requested

b) Proposed equipment project information

- New switcher data
 - Locomotive type (traditional switcher, alternative technology switcher)
 - Builder
 - Locomotive make and model year
 - Engine data (per engine)
 - Modifications (roots blown, turbo-charged, other)
 - Emission rate certified by U.S. EPA & verified by ARB (PM, NOx in g/bhp-hr)
 - Engine family, make and engine year
 - Horsepower, number of cylinders
 - Fuel type
 - Electronic monitoring device unit type and a description or sample of the type/format of reportable data
- Itemized cost information for eligible expenses (verifiable quote)
 - Locomotive, engine, or generator set (as applicable)
 - Other equipment/materials
- Predicted activity data with new equipment
 - Estimated annual fuel consumption (gallons of fuel)
 - Estimated annual megawatt hours of operation

- Estimated profile of locomotive duty cycle (i.e., idle time, throttle notch settings per increment of time for each engine)
- Equipment project funding demonstration
 - Total project cost
 - Program dollars requested
 - Funding sources and amounts of other funding (private, local, other State, federal)
 - Documentation of match funding availability

3. Option (2): line-haul locomotive

a) Current equipment and activity information

- Line-haul data
 - Locomotive type
 - Build number, date
 - Builder, builder model
 - Locomotive make, model, model year, serial number, roster number
 - Engine data (per engine)
 - Modifications (roots blown, turbo-charged, other)
 - Control level (uncontrolled, Tier 0, 1)
 - Engine family, make and type, model, engine year
 - Serial number
 - Horsepower, number of cylinders
 - Fuel type
 - Electronic monitoring unit device type and model (if equipped)
- Line-haul documentation
 - Documentation of current ownership
- Activity data for the past 2 years
 - Annual fuel consumption (gallons of fuel)
 - Annual megawatt hours of operation
 - Profile of locomotive duty cycle (i.e., idle time, throttle notch settings per increment of time for each engine)
- Activity documentation for past 2 years
 - Documentation of at least 50% of travel in corridors may be required
 - Documentation of fuel consumption may be requested
 - Documentation of megawatt hours of operation may be requested

b) Proposed equipment project information

- New line-haul data
 - Locomotive type
 - Builder
 - Locomotive make and model year
 - Engine data (per engine)
 - Modifications (roots blown, turbo-charged, other)
 - Control level (must be certified to Tier 2 emission levels or lower)
 - Engine family, make and engine year
 - Horsepower, number of cylinders
 - Fuel type
 - Electronic monitoring device unit type and a description or sample of the type/format of reportable data
 - Itemized cost information for eligible expenses (verifiable quote)
 - Locomotive or engine (as applicable)
 - Other equipment/materials
 - Predicted activity data with new equipment
 - Estimated annual fuel consumption (gallons of fuel)
 - Estimated annual megawatt hours of operation
 - Estimated profile of locomotive duty cycle (i.e., idle time, throttle notch settings per increment of time for each engine)
 - Equipment project funding demonstration
 - Total project cost
 - Program dollars requested
 - Funding sources and amounts of other funding (private, local, other State, federal)
- Documentation of match funding availability