

Carl Moyer Program 2008 Revision to Guidelines

Public Workshop
Sacramento, California and Webcast
November 7, 2007



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Today's Agenda

- Introductory Presentation
 - Background
 - Schedule
 - Interaction with Proposition 1B Bond
 - Program Administration
- Source category presentations
 - On-road categories
 - Off-road equipment replacement
 - Off-road categories and agricultural sources
 - Marine and locomotive categories

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Carl Moyer Program Guidelines

- Statute requires ARB to adopt guidelines
- Guidelines set minimum requirements
 - Administrative procedures
 - Project criteria for source categories
 - Cost-effectiveness criteria
 - Reporting requirements
- Comprehensive update and expansion adopted in 2005



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2008 Guideline Revisions

Main Objectives

- Incorporate lessons learned
 - 2005 Guidelines
 - Program evaluations and audits
- Simplify/streamline program administration
- Increase program efficiency and oversight
- Add off-road equipment replacement
- Reflect new ARB regulations
- Coordinate with Proposition 1B bond
- Update emission factors

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Schedule

- Two previous workshops
- Work group meetings ongoing
 - Program Administration
 - Off-Road Equipment Replacement
- Advisory group meetings
- Proposed guidelines released – Feb 8, 2008
- Board hearing – March 27, 2008
- For more information, visit ARB's website:
www.arb.ca.gov/msprog/moyer/moyer.htm



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Advisory Group

- Focus on policy issues not resolved at workshops
- ARB Member Sandra Berg will lead
- Meeting schedule
 - 1st meeting on Dec 10 in Sacramento to review guideline changes and identify policy issues
 - 2nd meeting on Jan 9 in El Monte to discuss prioritized issues identified at 1st meeting

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\$1B Goods Movement Bond

- Voter-approved Proposition 1B
 - \$1B for emission reductions for activities related to movement of freight along California's trade corridors and not required by law or regulation
- Legislature appropriates funds to ARB as part of annual State Budget
 - \$250M appropriated for FY 2007/08
 - Local public agencies apply for project funding
- Draft Guidelines to Board in Jan 2008

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\$1B Goods Movement Bond

Corridor Descriptions

Trade Corridor	Boundary
LA/Inland Empire	South Coast Air Basin
	Port Hueneme
Central Valley	San Joaquin Valley Air Basin
	Sacramento Federal Non-Attainment Area
Bay Area	S.F. Bay Area Air Basin
San Diego/Border	San Diego Air District
	Imperial Air District

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\$1B Goods Movement Bond

Source Category Targets

\$400 million	Heavy-duty diesel trucks serving seaports and intermodal rail yards
\$340 million	Other heavy-duty diesel trucks, plus any truck stop electrification
\$100 million	Shore power for cargo ships, plus cargo handling equipment
\$100 million	Diesel freight locomotives
\$60 million	Commercial harbor craft

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\$1B Goods Movement Bond and Carl Moyer Program Interaction

- Goal: Minimize competition between the two programs
 - Clearly delineate what's eligible for Bond funding versus Carl Moyer Program funding
 - Align project funding limits

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General Changes and Program Administration

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General Criteria

Project Eligibility

- Modify baseline project cost approach
 - Use fixed % of project cost instead of rebuild cost
- Retain current minimum project life

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General Criteria

Cost-Effectiveness Calculations

- Increase cap to \$16,000 per weighted ton
 - Based on changes to consumer price index
 - Continue NOx + ROG + 20*PM weighting
 - Propose not including exposure in calculation
- Adjust discount rate used to calculate annualized cost, if necessary
 - Propose 4 or 5% (will finalize after reviewing 4th quarter 2007 data)

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Program Administration

Background

- Local air districts would like more flexibility and fewer reporting requirements
- California Department of Finance (DoF) and Bureau of State Audits recommend increased specificity and oversight
- Our goal:
 - Streamline program administrative requirements
 - Address DoF recommendations
 - Maintain program integrity and transparency

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Program Administration

ARB-District Work Group Concepts

- Allow cumulative progress tracking
- Reduced admin and reporting for districts that need less oversight
- Simplify how districts receive annual funding allocation from ARB
- Additional time for Annual & Final Reports
- Define district general costs and principles for calculating earned interest, indirect costs, admin funds, travel/per diem

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Program Administration

Remaining Concepts to be Discussed

- Procedures for ARB/district interactions
 - Recapture and reallocation of unexpended funds
 - Protocol for addressing non-performing districts
- District/engine owner interactions
 - Minimum application and contract requirements
 - Project annual reporting
 - District audits of projects



Program Administration

District Audits

- ARB will audit at least 10% of funds each year
- Risk matrix to determine districts to audit
- Minimum audit frequency
 - Large districts: at least once every 4 years
 - Medium districts: at least once every 6 years
 - Small districts: at least once every 8 years
- ARB will post list of districts to be audited each year

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Program Administration

Best Practices

- Examples of best practices
 - Delegate limited project approval/contracting authority to APCO to streamline process
 - Obligate funds expeditiously
 - Increase outreach
 - Consolidate inspections where practical
 - Maximize program transparency
- ARB-District Work Group refining best practices list

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Contacts

General Guideline questions:

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Discussion

- Webcast communication information
 - Please email questions and comments to: coastalrm@calepa.ca.gov



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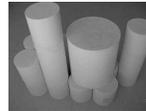
On-Road Projects

- On-Road Heavy Duty Trucks
- On-Road Fleet Modernization
- Light-Duty Vehicles

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On-Road Heavy-Duty Vehicles



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On-Road Heavy-Duty Topics

- Streamline incremental costs
- On-road repower projects
- Model Year 2010 engines
- Reflashable engines
- Use of mileage for cost-effectiveness calculations
- Impact of \$1B Goods Movement Bond
- Idling reductions
- TRUs

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Incremental Cost¹

On-Road Heavy-Duty Vehicles

Project	Eligible for Carl Moyer Funding
New Vehicle Purchase	25 percent
Vehicle Repower	80 percent
Retrofit	100 percent

¹APU and TRU funding amounts are not represented by this slide.

- Projects also subject to a \$16,000 per weighted ton of emissions reduced cost-effectiveness

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On-Road Repower Projects

- Replacement on-road engine
 - 1.2 g/bhp-hr NOx and 0.01 g/bhp-hr PM
 - Mechanical to electronic repowers will remain case-by-case with approval by ARB
 - Reflash all reflashable engines



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Emission Level for Calculation

- Engines that are certified to a FEL NOx or NOx + NMHC level that is equal to or lower than the required standard may be eligible for use in vehicle repower projects.

Emission Level to be Used in Calculation for FEL Engines

Engine Model Year	Eligibility Level – FEL on EO	Cost-Effectiveness Calculation Use
2007 – 2009	≤ 1.2	2006 Emission Factor

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Model Year 2010

- Next change in emission standard
 - 0.2 g NOx per bhp-hr
- Clarification on what determines the MY used in a project
 - Signing of Contract by 12/31/2009
 - Vehicle Delivery by 6/30/2010



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Reflashable Engines in a Fleet

- To receive funding all reflashable engines in a fleet are required to be reflashed
 - Require owner certification that all reflashable engines be reflashed within 60 days of payment
 - List of reflashable engines
 - <http://www.arb.ca.gov/msprog/hdsoftware/hdsoftware.htm>

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Use of Mileage for Cost-Effectiveness Calculation

- On-road calculations should be based on mileage
- Fuel based calculation use limited
 - Documentation of previous 2 years fuel usage and average annual mileage
 - Records submitted with application
 - Fuel-based calculation show minimum 30% more cost-effective than mileage calculation

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\$1B Goods Movement Bond

- Alignment with Bond could result in further changes to project criteria
- Example: Draft Bond proposal includes a \$5,000 per retrofit funding cap

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Idle Reduction

- Must be surplus to the idling regulation
- Heavy-duty trucks model years 2006 and earlier – retrofits eligible
- Heavy-duty trucks model years 2007 and newer
 - Zero emission technologies eligible
 - Advanced TSE - funding amounts determined case-by-case

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Transport Refrigeration Units

- Must be surplus to the TRU ATCM
- Funding opportunities for ULETRU
- Funding for new purchases or repowers may exist on a case-by-case basis
 - Zero emission
 - Alternative technologies

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On-Road Fleet Modernization

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Reasons for Proposed Revisions

- Districts and public feedbacks
- Proposed fleet rules
 - Port trucks, private fleet
 - Require 2007 trucks by 2013
- Other incentive programs
 - Proposition 1B, Port Authorities
 - Truck replacement projects
- Other factors
 - Increase eligibility pool

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Proposed Changes

- Vehicles model year
- Vehicles eligibility
- Funding
- Payment
- Eliminate tiered transactions, PM retrofits
- Regional program for small districts
- Concept for optional truck leasing

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Vehicles Model Year

- Proposed old vehicle requirements:
 - 1990 MY or older (no change)
 - Owned & registered in CA for the last 2 years
- Proposed new vehicle requirements:
 - 2007 MY emission standards
 - PM emission standard of 0.01 g/bhp-hr
 - Anticipate requirements of port truck and private fleet rules

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Vehicles Eligibility

- Same as current and with alignment to port trucks & private fleet
 - Fleet rules adoption imminent – additional restrictions
 - Avoid wasting district resources
- Other sources of funding available
 - Proposition 1B (\$1 billion - \$250 million FY 07/08)
 - \$400 million for port trucks
 - \$340 million for other commercial cargo trucks
 - Port Authorities (\$200 million over 5 years for port trucks)

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Vehicles Eligibility (cont'd)

- Glider kit vehicles now eligible
- FEL engines now eligible
 - 2007+ MY emission standards
 - FEL level \leq 1.2 g/bhp-hr
 - Use 2006 MY emission factors for NOx, ROG
 - Use 2007 MY emission factor for PM
- Must re-flash remaining trucks in fleet prior to funding

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Funding

- Maximum funding amount – may also consider alignment with \$1B Goods Movement Bond
 - 50% of N.A.D.A. value for used trucks, or
 - 50% of the invoice price for new trucks
- Alignment with Bond could result in further changes to project criteria
- Example: Draft Bond proposal includes a \$20,000 - \$50,000 per vehicle funding cap

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Payment

- Payment timing
 - '05 Moyer: vehicle scrapped before payment
 - Propose: payment made at vehicle delivery
 - District must have MOU w/ dealer, salvage yard
 - District required to ensure vehicle is destroyed

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Deleted Criteria

- Tiered transactions
 - Combination of two transactions
 - Complex. No tiered transactions have been implemented
- DECS retrofit requirement
 - Currently require retrofit for replacement truck
 - Requiring 2007 MY – eliminates need to require retrofit ('07 MY trucks already have OEM PM trap)

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Regional District Program

- Currently, each district must submit its own fleet modernization program for ARB approval
- Regional district program (combine resources)
 - Multidistrict program allowed
 - Must still submit regional program for approval
 - One program signed on by all districts in region
 - Allow a large district administer regional program
 - Need to work out funding/admin procedures

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Truck Leasing Concept

- Purpose: lower the initial capital cost and provide opportunity for increased participation
- Proposed concepts (voluntary for districts)
 - Grants used to assist with lease payments
 - Option to purchase truck at end of lease
 - Possible implementation mechanisms
 - Requesting comments

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Light-Duty Vehicles

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Light-Duty Vehicles

- Proposed chapter and appendix changes
 - Consider ASM tests for LEV replacement vehicles
 - Update default emission reductions, emission rates, and VMT using EMFAC2007 and add TSI
 - Redefine fleet average emissions: 1990-yr of ret
 - Limit the Yr 2/3 methodology for calculating high emitting vehicle emissions to ASM pass/fail stds

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Source Category Contacts

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Off-Road Equipment Replacement



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Program Overview

- Replace old, high polluting equipment with newer, cleaner equipment
- Retires equipment earlier than through normal attrition
- Category approached cautiously because:
 - Replacement occurs on its own
 - Best value of state funds

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General Criteria



- Diesel or LSI equipment greater than or equal to 25 HP (19kW)
- Projects eligible up to a maximum percent of total purchase costs
 - Range of 50-80 percent being considered
- Retrofits eligible up to 100 percent of total costs
- Project life based on the remaining useful life of the old equipment

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Existing (Old) Equipment Requirements

- Must have an uncontrolled engine
- Must have been owned and operated in California for the previous two years
- Must be fully functional
- Documentation of annual usage for the previous two years

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Replacement (New) Equipment Requirements

- Must have an engine meeting the current Model Year California emission standard
- Must perform the same job as the old equipment
- Power and drive train warranty required, if available
- ARB-verified retrofit is required, if available

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Existing (Old) Equipment Destruction

- Old equipment and engine must be destroyed and rendered useless
- Destruction may occur at
 - District approved salvage yard
 - Other facility in conjunction with a salvage inspection

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Administrative Requirements

- ARB approval of district program policies and guidelines
- Required inspections
 - Pre-inspection of old equipment
 - Post-inspection of new equipment
 - Salvage inspection of old equipment

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In-Use Off-Road Diesel Vehicle Regulation

- Large fleets- Limited funding
- Medium fleets- Funding until February 28, 2010, then limited
- Small fleets
 - Funding for NOx reductions
 - PM reductions up until February 28, 2012
- Fleets in captive NOx attainment areas
 - Funding for NOx reductions
 - Limited funding for PM reductions
- SOON program- fleets meeting the 2014 and 2017 targets early

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Cargo Handling Equipment at Ports and Intermodal Rail Yards

- Early compliance dates
- Limited funding due to high initial investment by fleets

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Off-Road Large Spark-Ignition Equipment Regulation

- Large, medium, and non-forklift fleets-funding available if already meeting the 2011 fleet average targets until January 1, 2010
- Eligible for funding-
 - Certain ag crop preparation fleets
 - Equipment not subject to the regulation
 - Small fleets

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Senate Bill 467

- Requires ARB to establish criteria for replacement with zero-emission technology
- Proposed criteria applicable
- Potential differences
 - Longer project life
 - Additional emission benefits

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Off-Road Categories and Agricultural Sources

- Off-Road Compression Ignition Equipment
- Large Spark Ignition Equipment
- Agricultural Sources
- Agricultural Assistance Program

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Off-Road Compression Ignition Equipment



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Off-Road CI Topics

- Repowers
- Retrofits
- Regulations
- Additional Updates

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Repowers

- Off-road In-Use Diesel Vehicle Regulation
 - Engines must be Tier 2 or better for final compliance
- Tier 1 repowers ineligible for funding
- Exceptions
 - Fleets meeting the small fleet definition
 - Fleets defined as captive attainment area fleets
 - Equipment specifically exempted from the rule
 - Equipment not subject to the rule
- Remove \$6,000/weighted ton cost effectiveness cap

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Repowers

Incremental Cost

Project	Eligible for Carl Moyer Funding
Tier 1 repower	75 percent
Tier 2 repower	80 percent
Tier 3 repower	85 percent

- Projects also subject to a \$16,000 per weighted ton of emissions reduced cost-effectiveness

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Retrofit

- Highest level ARB verified retrofit available on all projects
- Eligible for funding up to the cost effectiveness limit
- Retrofits eligible for 100 percent of funding

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ARB Regulations

- In-Use Off-Road Diesel Vehicle Regulation
- Cargo Handling Equipment at Ports and Intermodal Rail Yards

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Additional Updates

- Fuel usage allowed case-by-case
 - Two years of historical fuel usage documentation specific to the funded equipment



Off-Road Large Spark Ignition Equipment



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Off-Road LSI Topics

- New Electric Purchase
- Retrofits
- Case-by-Case
- Regulations
- Additional Updates

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New Purchase Projects

- Purchase electric equipment greater than 19 kW
- More stringent cost effectiveness caps for electric forklifts removed
- Reimbursement of up to 30% for a new electric purchase
- Default project life 10 years

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Retrofit Projects

- Must be highest level ARB verified retrofit available
- 100% of cost may be paid, including installation and hour meter, if none exists
- Default project life 3 years

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Case-by-Case Projects

- Zero-emission other than electric equipment
- LSI equipment certified to lower optional standards
- Less than or equal to one liter engines

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Off-Road LSI Rule Eligible Projects

- Projects eligible for funding of early or extra emission reductions
- In-use fleets/equipment not subject to the rule
 - Fleets of 3 or less
 - Aerial lifts, turf and ice care, mining and construction, industrial equipment
 - Ag Crop Preparation Services
 - Pre-1990 forklift
 - Non-forklift equipment

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Agricultural Sources



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Agricultural Sources Topics

- Repowers
- Electric motor projects
- Non-engine agricultural use projects
- Eligible funding

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Agricultural Sources Repower Projects

- Minimum one year project life for engines subject to Stationary Diesel In-Use Ag. Engine ATCM
- Retain three year project life for engines not subject to the ATCM
- Removed sunset date for non-certified spark-ignited engine repower projects; eligible on case-by-case basis

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Agricultural Sources Electric Motor Projects

- Eligibility of peripheral equipment
 - Reduced voltage starting technology
 - Variable frequency drives



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Agricultural Sources Non-Engine Projects

- Funding allowed for non-engine agricultural source projects on a case-by-case basis

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Agricultural Sources Eligible Funding Amounts

- Based on percentage of total costs
- Reimbursement of up to
 - 85 percent for Tier 3 repowers
 - 20 percent for new electric motor purchases



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Agricultural Assistance Program



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Agricultural Assistance Program Updates

- Align with updates to Administration and Agricultural Sources chapters in proposed Guidelines
- Exceptions
 - Eligibility deadlines
 - Cost-effectiveness of total reductions
 - Emission reductions not surplus



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Marine Vessels



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Marine Vessel Topics

- Engine Repower Project Criteria
- Other Potential Marine Engine Projects
- Shore Power Project Criteria



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Marine Vessel Project Criteria Engine Repower – General

- Repower with cleanest available engine
- Maximum allowable repower costs:
 - Tier 2 repower: 80 percent
 - Tier 3 repower: 85 percent
- Define allowable repower costs
- Require hour-based calculations if hour meter is installed



Marine Vessel Project Criteria

Engine Repower – Impact of Harbor Craft Rule

- Moyer projects must be surplus to ARB In-Use Harbor Craft Regulation
 - Board consideration November 15, 2007
 - Targets ferries, excursion vessels, tug boats, and tow boats
 - Requires actions to reduce emissions (typically repower to cleanest available engine)
 - Hour meter required for all vessels
 - Engines receiving rule compliance extension ineligible for funding

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Marine Vessel Project Criteria

Other Potential Marine Engine Projects

- Retrofit device
 - Eligible once technology is verified
- Engine remanufacture kit
 - Eligible once technology is certified for NOx, ROG, and PM emissions

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Marine Vessel Project Criteria

Shore Power – Funding Eligibility

- Eligible costs may include:
 - Transformer (shore-side or ship-side)
 - Necessary ship retrofits
 - Labor for vessel connection & disconnection
- Ineligible costs include:
 - Electrical infrastructure costs (unless local match \$)
 - Electricity costs
 - Routine maintenance

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Marine Vessel Project Criteria

Shore Power – Eligible Costs

- Maximum allowable shore power costs:
 - Berth-side Transformer: 50 percent
 - On-Vessel Transformer: 50 percent
 - Other Ship Retrofits: 100 percent
- Cost-effectiveness calculations must include all public and local match funding

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Marine Vessel Project Criteria

Shore Power - General

- Berth shore-power availability required for ship-side retrofit and/or transformer projects
- Hourly usage commitment must be demonstrated and included in project contract

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Marine Vessel Project Criteria

Shore Power – Impact of Shore Power Rule

- Moyer projects must be surplus to ARB Shore Power Regulation
 - To be considered by Board in Dec 2007
 - Proposal requires fleets plug-in for 50 percent of visits by 2014 and 80 percent by 2020
 - Covers container, passenger, and reefer vessels
 - Applies to Ports of Los Angeles, Long Beach, Oakland, San Francisco, and Hueneme
- Project life may not extend beyond 2014 unless surplus to rule

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Locomotives



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Locomotive Topics

- Alt. Technology Switcher Project Criteria
- Idle-Limiting Device Project Criteria
- Other Potential Projects



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Locomotive Topics

Alt. Technology Switcher – General Criteria

- Must use cleanest available engine
- Maximum allowable funding amount based on railroad size:
 - Class 1 Railroad: 50 percent
 - Class 3 Railroad: 85 percent

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Locomotive Topics

Other Project Criteria

- Idle-Limiting Device (ILD)
 - Class 1 railroads not eligible for funding due to Statewide MOU
 - Maximum allowable ILD cost = 50 percent
- U.S. EPA-Certified remanufacture kit or engine repower
 - Maximum allowable cost:
 - 75 percent for Tier 0
 - 80 percent for Tier 1
 - 85 percent for Tier 2

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Locomotive Topics

Other Potential Projects

- Retrofit device
 - Eligible once technology is verified
 - ARB verification evaluations are in progress

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Marine and Locomotive Projects

Interaction with Prop 1B Bond

- Draft marine vessel and locomotive project criteria could change
 - Eligibility of projects within goods movement corridors
 - Maximum eligible funding amounts
 - Other project criteria

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