

**APPENDIX E**

**COMPARISON OF PLAN TO PORT OF LOS ANGELES  
NO NET INCREASE MEASURES**

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## **APPENDIX E**

### **COMPARISON OF ARB EMISSION REDUCTION PLAN STRATEGIES AND THE PORT OF LOS ANGELES NO NET INCREASE (NNI) REPORT**

In June 2005, the Port of Los Angeles released a No Net Increase (NNI) Report, which outlined 68 existing and potential strategies to mitigate emissions from growth in port operations. Although this report was not formally approved or implemented, many stakeholders have referenced the NNI strategies in their comments on ARB's Emission Reduction Plan. For that reason, we include a comparison of the strategies in each document.

The following five tables show the ARB plan strategies and the comparable NNI strategies for each of the five sectors associated with ports or the distribution of international cargo throughout California – ships, harbor craft, cargo handling equipment, trucks, and locomotives. The tables are meant for general comparison purposes only. The comparable strategies, in many cases, are not identical in scope. The ARB plan includes environmental goals beyond achieving 2001 emission levels, and therefore its strategies are often broader and more far-reaching than the comparable NNI measures.

Table E-1  
ARB Emission Reduction Plan Strategies and Comparable NNI Strategies  
Ships

<b>Ships</b>	
<b>ARB Emission Reduction Plan Strategies</b>	<b>Comparable No Net Increase (NNI) Strategies</b>
Actions Taken Since 2001	
Vessel Speed Reduction Agreement	OGV2 Vessel Speed Reduction MOU
U.S. EPA Main Engine Emission Standards	OGV1 New Engine Standards for Ships
U.S. EPA Non Road Diesel Fuel Requirements	No Comparable NNI Strategy
Implementation Possible By 2010	
ARB Rule for Ship Auxiliary Engine Fuel	OGV4 Auxiliary Engine Fuel Improvement Program OGV8 Cleaner Fuels for Ship Auxiliary Engines OGV11 Expanded Auxiliary Engine Fuel Improvement Program
Cleaner Marine Fuels	OGV9 Main Engine Fuel Improvement Program OGV12 Expanded Main Engine Fuel Improvement Program
Emulsified Fuels	OGV7 Low Emission Main Propulsion Engines
Expanded Vessel Speed Reduction Programs	OGV15 Expanded Vessel Speed Reduction Program
Install Engines in New Vessels that Exceed IMO Standards	OGV7 Low Emission Main Propulsion Engines
Dedicate the Cleanest Vessels to California Service	OGV6 Reroute Cleanest Ships
Shore Based Electrical Power	OGV3 Alternative Maritime Power OGV13 Additional Auxiliary Engine Reductions for Frequent Callers
Implementation Possible By 2015	
Extensive Retrofit of Existing Engines	OGV14 Retrofit/Repower Requirements for Infrequent Callers OGV13 Additional Auxiliary Engine Reductions for Frequent Callers
Highly Effective Emission Controls on Main Engines and Auxiliary Engines	OGV5 New Engine Standards for Category 3 Marine Engines OGV7 Low Emission Main Propulsion Engines
Sulfur Emission Control Area (SECA)	OGV10 Sulfur Emission Control Area SECA (EPA, ARB)
Expanded Use of Cleanest Vessels In California Service	OGV6 Reroute Cleanest Ships
Expanded Shore Power and Alternative Controls	OGV16 Expanded Alternative Maritime Power
Implementation Possible By 2020	
Full Use of the Cleanest Vessels in California Service	OGV6 Reroute Cleanest Ships OGV7 Low Emission Main Propulsion Engines
Maximum Use of Shore Power or Alternative Controls	OGV16 Expanded Alternative Maritime Power OGV17 Additional In-Use Measures for Ships

Table E-2  
 ARB Emission Reduction Plan Strategies and Comparable NNI Strategies  
 Commercial Harbor Craft

<b>Commercial Harbor Craft</b>	
<b>ARB Emission Reduction Plan Strategies</b>	<b>Comparable No Net Increase (NNI) Strategies</b>
Actions Taken Since 2001	
Incentives for Cleaner Engines	HC4 Dredging Activities HC5 TAC Harbor Craft Measures
Low Sulfur Diesel Fuel Rule	HC2 Clean Fuels for Harbor Craft HC3 Early Implementation of Ultra Low Sulfur Diesel
Implementation Possible By 2010	
ARB Rule to Clean Up Existing Engines - Cleaner Engines - Cleaner Fuels - Add-On Emission Control Devices	HC5 TAC Harbor Craft Measures HC6 New Engine Standards for Category 1 and 2 Marine Engines HC7 Emulsified Fuels HC8 In-Use Harbor Craft Emission Reduction Measure HC9 Repower Existing Harbor Craft HC10 Retrofit Existing Harbor Craft
Shore Based Electrical Power	HC11 AMP-Ready Staging Areas
Implementation Possible By 2015	
New Engine Emission Standards	HC6 New Engine Standards for Category 1 and 2 Marine Engines
Pre-2001 Actions	
U.S. EPA Standards for Harbor Craft (adopted in 1999)	HC1 New Engine Standards for Harbor Craft

Table E-3  
ARB Emission Reduction Plan Strategies and Comparable NNI Strategies  
Cargo Handling Equipment

<b>Cargo Handling Equipment</b>	
<b>ARB Emission Reduction Plan Strategies</b>	<b>Comparable No Net Increase (NNI) Strategies</b>
Actions Taken Since 2001	
Low Sulfur Diesel Fuel Rule	CHE2 Yard Tractor Modernization and ULSD Programs (2005 only for ULSD) CHE3 Early Implementation of ULSD for CHE other than yard tractors (2005 only)
EPA Tier 4 Emission Standards for New Off-road Engines	CHE1 Emission Standards for Heavy-Duty Nonroad Diesel Engines
Stationary Diesel Engine Rule	No Comparable NNI Strategy
Portable Equipment Rule	HC4 Dredging Activities (portable engines)
Incentives for Cleaner Fuels	CHE4 Alternative Fuel yard Tractor Resolution (new leases) CHE5 Emulsified Fuels CHE6 TAC Measures – cleaner fuels, retrofits and repowers of existing equipment
Implementation Possible By 2010	
ARB Rule for Diesel Cargo Handling Equipment	CHE2 Yard Tractor Modernization and ULSD Programs (2005 and 2006 ony) CHE6 TAC Measures – cleaner fuels, retrofits and repowers of existing equipment CHE7 Expanded Yard Tractor Modernization CHE8 Enhanced CHE Modernization other than yard tractor CHE9 Cargo Handling Equipment at Ports and Intermodal Rail Yards
ARB Rule for Gas Industrial Equipment	No Comparable NNI Strategy
Implementation Possible By 2015	
Upgrade to 85 Percent Diesel PM Control or Better	CHE7 Expanded Yard Tractor Modernization CHE8 Enhanced CHE Modernization other than yard tractor
Implementation Possible By 2020	
Zero or Near-Zero Emission Equipment	No Comparable NNI Strategy

Table E-4  
ARB Emission Reduction Plan Strategies and Comparable NNI Strategies  
Trucks

<b>Trucks</b>	
<b>ARB Emission Reduction Plan Strategies</b>	<b>Comparable No Net Increase (NNI) Strategies</b>
Actions Taken Since 2001	
2007 New Truck Emission Standards	HDV2 2007 On-Road Standards for Heavy-Duty Diesel Vehicles HDV16 On-Board Diagnostics for Heavy-Duty Trucks
Vehicle Replacement Incentives	HDV3 Gateway Cities Truck Modernization Program
Low Sulfur Diesel Fuel	HDV5 Ultra-Low Sulfur Diesel Fuel (15 ppm) HDV12 Early ULSD Implementation (through June 2006)
Smoke Inspections for Trucks in Communities	HDV6 Heavy-Duty Vehicle Inspection HDV7 Periodic Smoke Inspection Program HDV8 Augment Highway Inspections with Community-Based Inspections
Truck Idling Limits	HDV9 Reduced Truck Idling HDV19 Idling Reduction Measures HDV18 Electrified Truck Spaces
Community Reporting of Violators	No Comparable NNI Strategy
Clean Transport Refrigeration Units	HDV17 Transportation Refrigeration Units
Low NOx Software Upgrade Rule	HDV4 Engine Software Upgrade (or Low NOx Software Upgrade)
Implementation Possible By 2010	
Port Truck Modernization - Retire and Replace - Repower - Retrofit	HDV10 Expanded Truck Modernization Program HDV13 Retrofit with Diesel Oxidation Catalysts HDV14 Retrofit with Diesel Particulate Filters HDV15 PM In-Use Emission Control
Enhanced Enforcement of Truck Idling Limits	No Comparable NNI Strategy
ARB International Trucks Rule	HDV11 California Standards and Fleet Modernization for Mexican Trucks
ARB Private Truck Fleets Rule	HDV 10 Expanded Truck Modernization Program
Implementation Possible By 2015	
Continued Port Truck Modernization	See 2010 NNI comparable strategies for Port Truck Modernization above
Pre-2001 Actions	
2004 New Truck Emission Standards (adopted 2000)	HDV1 2004 On-Road Standards for Heavy-Duty Diesel Vehicles

Table E-5  
ARB Emission Reduction Plan Strategies and Comparable NNI Strategies  
Locomotives

<b>Locomotives</b>	
<b>ARB Emission Reduction Plan Strategies</b>	<b>Comparable No Net Increase (NNI) Strategies</b>
Actions Taken Since 2001	
Low Sulfur Diesel Fuel Rule	R2 ARB Diesel Fuel Used by Intrastate Locomotives R3 Standards for Nonroad Diesel Fuel
2005 Statewide Railroad Agreement	R10 Idling Controls for Switcher and Line Haul Locomotives R11 Efficiency Improvement on In-Use Class 1 Rail Equipment
Idle Enforcement Training	R10 Idling Controls for Switcher and Line Haul Locomotives
Implementation Possible By 2010	
Upgrade Engines in Switcher Locomotives	R5 PHL Switcher Locomotive Modernization and ULSD Programs R6 Ultra-Low Emission Switcher Locomotives: PHL R7 Ultra-Low Emission Switcher and Line Haul Locomotives: Class 1
Retrofit Diesel PM Control Devices on Existing Engines	R7 Ultra-Low Emission Switcher and Line Haul Locomotives: Class 1
Use of Alternative Fuels	R7 Ultra-Low Emission Switcher and Line Haul Locomotives: Class 1 R9 ARB Diesel Fuel for Class 1 Railroad Locomotives
Implementation Possible By 2015	
More Stringent National Requirements <ul style="list-style-type: none"> <li>- Tier 3 Emission Standards</li> <li>- On-board Diagnostics (OBD)</li> <li>- Rebuild Tier 0, Tier 1, and Tier 2 Engines to More Stringent Emission Standards</li> <li>- Idle Limiting Devices on New and Rebuilt Engines</li> </ul>	R8 Tier 3 Standards for New and Remanufactured Locomotives and Engines
Concentrate Tier 3 Locomotives in California	R7 Ultra-Low Emission Switcher and Line Haul Locomotives: Class 1
Implementation Possible By 2020	
Continuation of 2015 Strategies	See "By 2015" NNI strategies above
Pre-2001 Actions	
Engine Standards for Locomotives (adopted 1998)	R1 Tier 0, 1, and 2 Engine Standards
1998 Memorandum of Understanding for South Coast Air Basin	R4 MOU in the South Coast Air Basin (1998)

\* NNI strategy R12, "*Electrification of the Alameda Corridor*," is not explicitly included in the ARB Emission Reduction Plan.