

National Clean Diesel Campaign



Projects, Programs and Funding



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Office of Transportation and Air Quality



National Association of Regional Councils

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Presentation Overview

- Overview of NCDC
- Technology Verification
- Why Diesel Retrofits?
- Program Successes
- Funding Opportunities

National Clean Diesel Campaign- 2 Components

- Regulations
 - Heavy-Duty Highway New Engines
 - Nonroad New Engines
- Voluntary Program to address existing diesel fleet
 - Clean Construction USA
 - Clean Ports USA
 - Clean Agriculture USA
 - Clean School Bus USA
 - Clean Freight (SmartWay Transport)

Regulatory Strategy

Standards for NEW Diesel Engines

Diesel engines in all mobile source applications-

- *Regulations adopted; now focused on implementation*



Heavy-duty trucks & buses



Nonroad Machines

- *Rulemakings underway for:*



Locomotives



Marine Vessels



Ocean-going Ships

- **Current Regulations**
 - Very large public health and environmental benefits will result:
 - By 2030, PM reduced by ~250,000 tons/year, NOx by ~4 million tons/year
 - Annual benefits expected to exceed \$150 billion versus costs of approximately \$7 billion

NCDC's Voluntary Programs for Existing Engines

- Goal: *reduce emissions from the legacy fleet of over 11 million diesel engines by 2014*
- Focus on five sectors:
 - School Buses
 - Ports
 - Construction
 - Agriculture
 - Freight
- Program activities:
 - Technology verification
 - Providing technical and policy analysis
 - Coalition-building and outreach
 - Establishing projects through grant competitions

Sector-Based Programs

- **Clean School Bus USA**
 - Aims to modernize 100% of the nation's school bus fleet by 2010
- **Clean Ports USA**
 - Encourages port authorities and terminal operators to reduce emissions and provide economic incentives to operate more efficiently
- **Clean Construction USA**
 - Encourages reducing emissions from major public and private construction projects in non-attainment areas
- **SmartWay Transport Partnership**
 - Challenges freight companies to improve the environmental performance of their fleets
- **Clean Air Agriculture (newest sector)**
 - Promotes biofuels/renewables & retrofit in farming communities in non-attainment areas in partnership with USDA

What is a Retrofit Technology?

- Retrofit technology can be: *any change to an engine system above and beyond what is required by EPA regulations that improves the engine's emission performance:*
 - Catalyst or filter
 - Engine upgrade
 - Early engine replacement
 - Use of cleaner fuels or additives
 - Idling control equipment
 - Combination of above
- Technology Costs/Benefits
 - Aftertreatment (DOC, DPF) \$500 - \$8000
 - 20-90% PM reduction
 - Crankcase filtration ~ \$500
 - 5-10% PM reduction
- NCDC's website maintains a list of manufacturers and verified technology

Technology Verification

- EPA has a rigorous testing program for evaluating technologies
- EPA works with technology vendors, engine manufacturers, MECA
- Memorandum of Agreement between EPA and CARB
 - Collaboration with Texas
- Retrofit technologies to reduce PM and NOx emissions currently verified by EPA & CARB:
 - DPFs, DOCs, Crankcase Filtration, Emulsified Fuel, Biodiesel, EGR and SCR systems.
- Information about EPA's Verification program:
<http://www.epa.gov/otaq/retrofit/retroverifiedlist.htm>

Why Diesel Retrofit?

Protecting Public Health

- Current clean diesel programs will reduce more than 20,000 tons of PM
- These reductions will provide nearly \$5 billion in health benefits
- The public can have high exposures to diesel emissions, such as children and school buses or urban construction sites

Why Diesel Retrofit?

Cost Effective Emissions Reductions

- Diesel retrofits can provide a benefit-to-cost ratio of up to 13:1
- Nonroad retrofits can be some of the most cost effective
 - For example, a typical bulldozer emits as much particulate matter as 500 cars
- Diesel retrofits costs can average \$5,630/ton of NO_x reduced.*
 - Median cost for traffic signalization estimated at \$20,100/ton of NO_x/HC.**
 - Median cost for park and ride lots estimated at \$43,000/ton of NO_x/HC**
- For particulate matter, diesel retrofits can range from \$11,000 - \$70,000/ton of PM

* From the Texas Emissions Reduction Plan's 2004 Biennial Report to the Legislature

** Transportation Research Board Special Report 264 "Congestion Mitigation and Air Quality Improvement Program: Assessing 10 Years of Experience"

Why Diesel Retrofit?

Broad Stakeholder Support

- Industry, government, community and environmental groups agree- cleaning up diesel emissions is important.

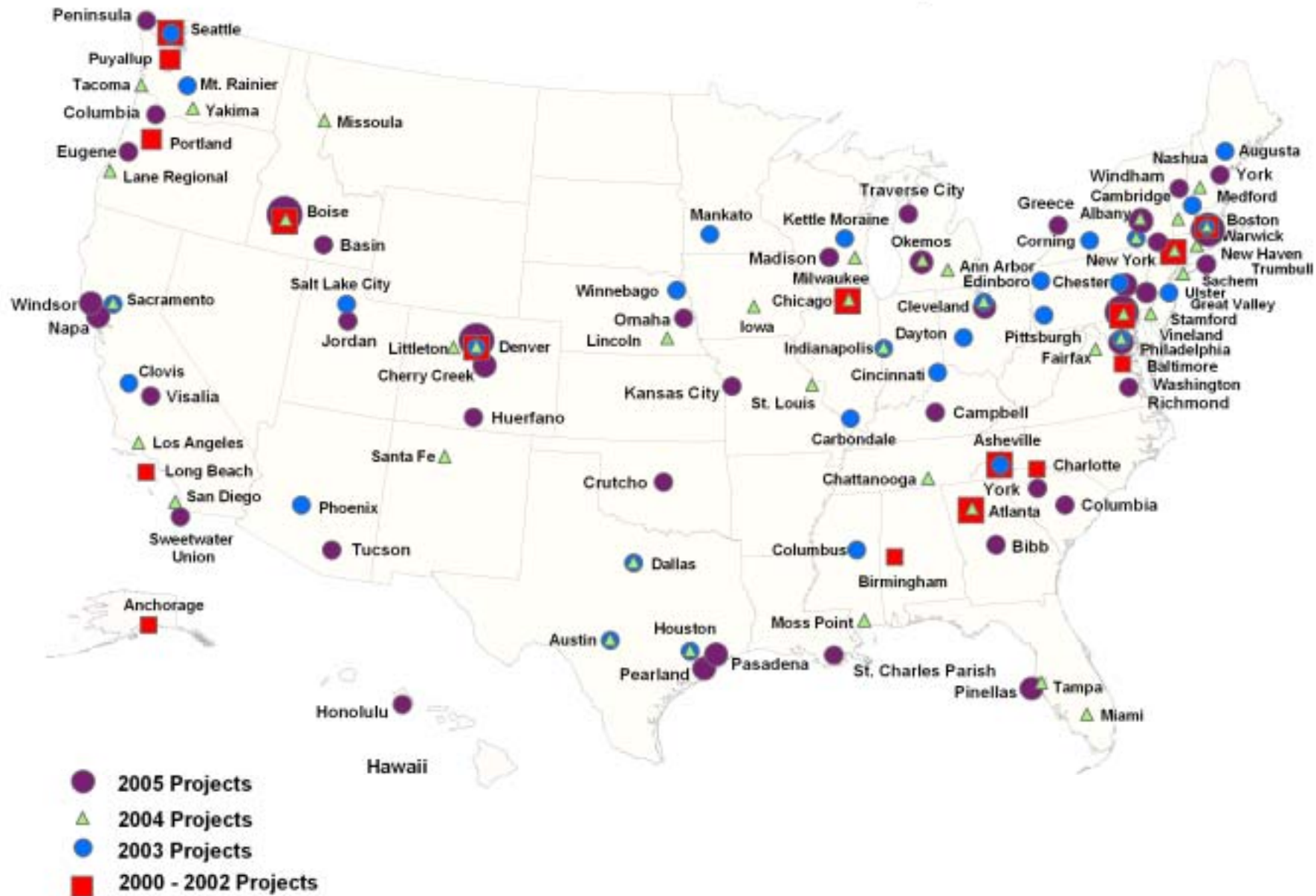
Implementation Advantages

- Diesel retrofits can be implemented quickly
- Plenty of retrofit experience to capitalize on
 - Technical assistance at the national, regional and often local level
- Resources and leveraged funds available

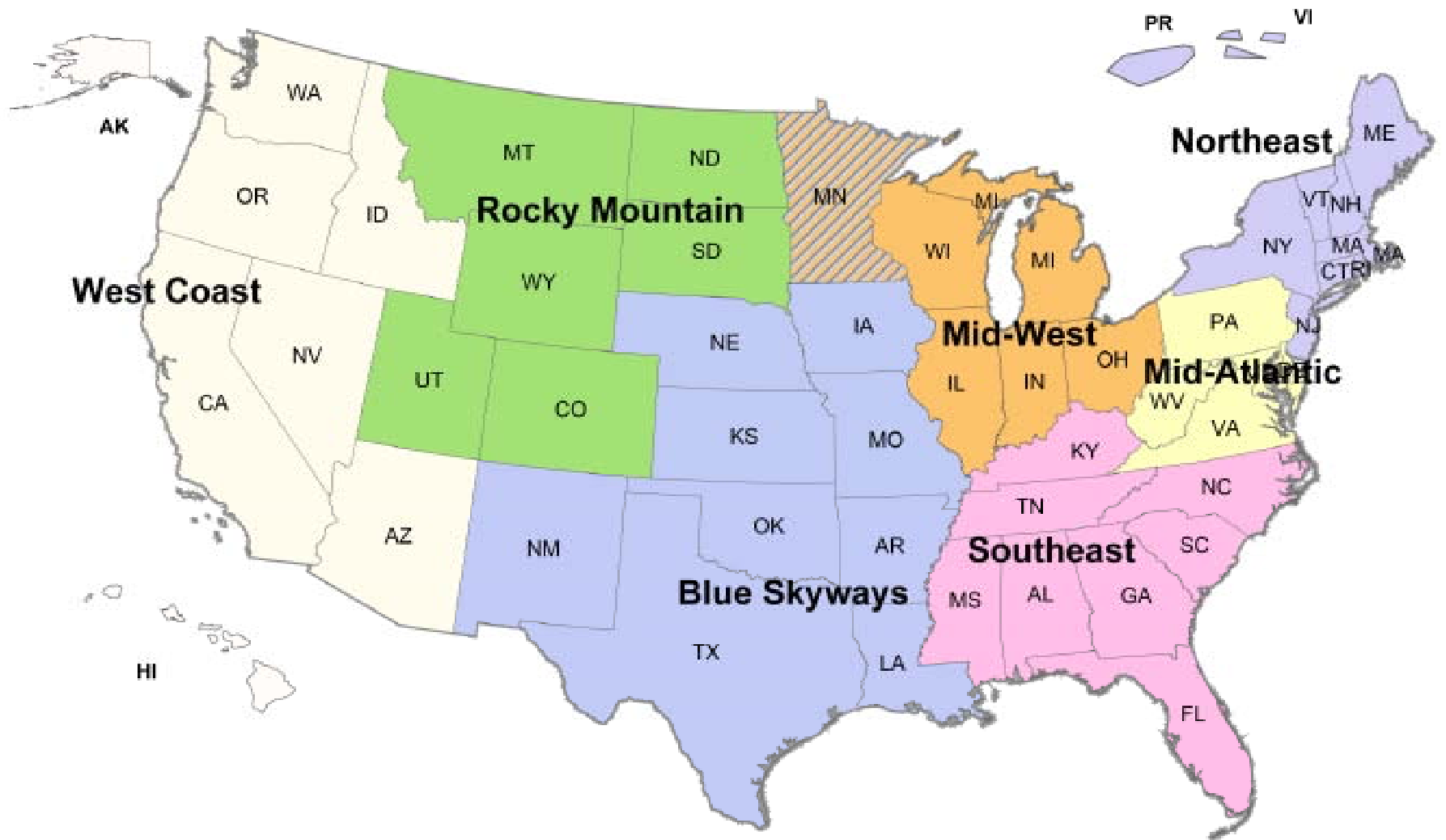
Program Successes

- Over 600 Partners
- 20 States (and DC) using ULSD early
- Over 200,000 engines are being retrofitted
- 17 emissions control technologies verified
- Partners have contributed significant resources
 - Over 2 external dollars for every 1 federal dollar invested
 - States have established programs with funding > \$400M
- Specifically,
 - As a result of Clean School Bus USA:
 - Over 2 million children in 150 school districts are riding approx. 20,000 cleaner buses
 - As a result of SmartWay Transport:
 - 53 idle reduction projects are in place along major interstate corridors (I-95, I-40, I-5, I-35, I-10, I-85)
 - 322 Total Partners
 - 229 Trucking Carriers, 8 Rail Carriers, 27 Shippers, 7 Shipper-Carriers, 14 Logistics, 37 Affiliates
 - Representing nearly 5 percent of the trucking industry, with over 300,000 tractors and 500,000 trailers traveling over 14 billion miles per year

EPA Funded Retrofit Projects (as of 2/22/2006)



Regional Clean Diesel Collaboratives



Federal Funding

National Clean Diesel Campaign

- 2005 National Clean Diesel Campaign Grants
 - \$7.5 M for Clean School Bus. 37 grants awarded.
 - 172 applications (up from 103 in 2003) from 36 states
 - Requested \$50 million
 - \$1.1 for ports & construction. 10 grants awarded.
 - 25 applications from 16 states
 - Requested \$4 million
- 2005 SmartWay Transportation
 - \$5 M for idle reduction demonstration projects. 5 grants awarded.
- FY06 budget
 - \$5 Million for National Clean Diesel Campaign
 - \$7 Million for Clean School Bus grants
 - Funding will be distributed through EPA's Regional Clean Diesel Collaborative network
- FY07 budget
 - President requested \$50 million to support clean diesel activity

Future Federal Funding:

Energy and Transportation Bills Overview

Energy Bill –

- **Diesel Emission Reduction Program**
 - \$200 million authorized annually over 5 years
 - President's budget request includes \$50M
 - House Level includes \$26 million

Transportation Bill –

- **Congestion Mitigation and Air Quality (CMAQ)**
 - Priority for diesel retrofits
 - \$1.6 billion per year for 6 years

Clean Diesel Collaboratives

Collaboratives carry out the EPA National Clean Diesel Campaign's mission regionally.

- **Northeast Diesel Collaborative-** CT, MA, ME, NH, NJ, NY, PR, RI, VI, VT
<http://www.northeastdiesel.org/>
- **Mid-Atlantic Diesel Collaborative-** DC, DE, MD, PA, VA, WV
<http://www.dieselmidatlantic.org>
- **Southeast Diesel Collaborative-** AL, FL, GA, KY, MS, NC, SC, TN
<http://www.southeastdiesel.org>
- **Midwest Clean Diesel Initiative-** IL, IN, MI, MN, OH, WI
<http://www.epa.gov/midwestcleandiesel/>
- **Blue Skyways Collaborative-** AR, IA, KS, LA, MN, MO, NE, NM, OK, TX
<http://www.censara.org/presentations.asp>
http://www.epa.gov/region6/6xa/blue_skies_collaborative.htm
- **Rocky Mountain Clean Diesel Collaborative** is in the works- CO, MT, ND, SD, UT, WY
- **West Coast Collaborative-** AK, AZ, CA, HI, ID, NV, OR, WA, Canada and Mexico
<http://www.westcoastcollaborative.org>

For More Information

Visit EPA's National Clean Diesel Campaign
Website

www.epa.gov/cleandiesel



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