

Northeast Diesel Collaborative

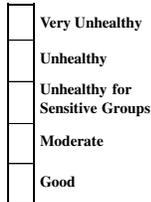
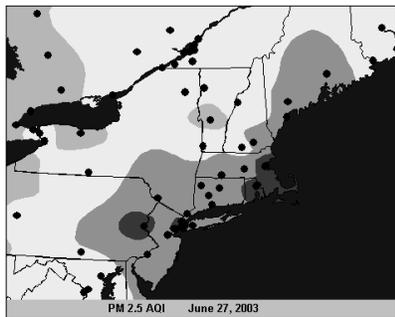
Strategies for Reducing Diesel Emissions from Nonroad Engines

Faster Freight - Cleaner Air
New York, NY
July 8, 2008

Regional Air Quality

- 82 counties in CT, MA, NH, NJ, NY, and RI do not meet the federal ozone standard
- 25 counties in CT, NJ, and NY—with more than 21 million people—do not meet the standard for fine particles; other urban areas barely meet the standard
- All six New England states have childhood asthma rates above 10%; areas of NYC near 15%; Puerto Rico 30%

Unhealthy Levels of PM_{2.5}



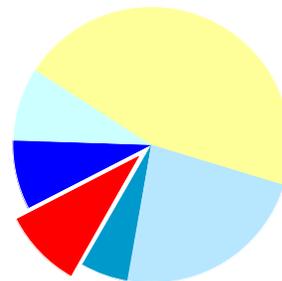
Clean Air Strategies

- Problem requires federal, state, and regional efforts to reduce PM_{2.5} and NO_x
- Agencies focused on range of strategies for stationary and mobile sources
- Examples: new federal engine and fuel standards, low-sulfur heating oil standard, comprehensive state diesel plans, and Northeast Diesel Collaborative

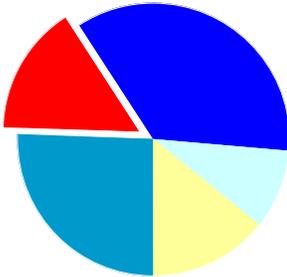
Why Focus on Nonroad?



Source of PM Emissions in NE



Source of NOx Emissions in NE



Additional Context

- Analysis for one state shows 75% reduction in PM by 2020 and 62% reduction by 2015 *with existing federal and state initiatives only (including projected growth)*
- Focus for additional reductions likely to be marine, locomotive, and construction sectors, as turnover and existing programs achieve goals in highway and some nonroad

Twin Peaks: US and CA Regulations

- Tighter federal standards for new diesel engines and fuel, beginning with highway in 2007, nonroad in 2008
- PM and NOx standards for nonroad phase in 2008-15
 - Hp < 25 in 2008
 - 25 ≤ hp < 75 in 2013
 - 75 ≤ hp < 175 in 2012-13
 - 175 ≤ hp < 750 in 2011-13
 - Hp > 750 in 2011-15

CA Regulations

- CA has separate rules for cargo-handling equipment, portable equipment, and off-road vehicles, all requiring replacement & retrofits
- NESCAUM has reviewed the rules and deemed it feasible for other states to adopt the CHE because of manageable number of engines and locales
- NESCAUM does not consider it feasible to adopt CA rules for portable equipment or off-road vehicles, because of extensive registration and tracking requirements (esp. fleet averaging in off-road rule)

Northeast State Policies

- NJ state law requires retrofits on school buses, garbage trucks, transit buses, and publicly owned on-road and non-road vehicles
 - provides 100% funding (app. \$140 m over 10 years)
- NY state law requires best available retrofit technology on state-owned or contracted heavy duty diesel vehicles
 - anticipated funding through CMAQ
- CT & RI have state diesel plans and new state laws promoting school bus retrofits
 - CT appropriated \$10 m; RI law specifies CMAQ
- MA state diesel plan is under development
 - MA allocated \$22.5 m to retrofit all school and transit buses

State Policies

- CT & MA transportation agencies require retrofits in highway construction projects; both states also require retrofits in some public works construction projects needing permits
- Six of the 8 states have anti-idling regulations
- MA Executive Order requires increasing % of biofuels in state vehicles
- ME DOT funds the incremental cost of biodiesel for public transportation fleets



Local Policies

- NYC has local laws requiring emission controls on construction equipment, garbage and recycling trucks, sightseeing buses, school buses
- Five NY counties signed agreement with federal & state agencies to reduce diesel emissions via retrofits, clean fuels, idle reduction, fuel-efficient vehicles
- Chelsea, MA, passed resolution to retrofit city vehicles



Regulatory Activity

- Environmental organizations are pushing state laws or Executive Orders in CT, MA, NJ, RI to require retrofits on all state-owned or contracted heavy-duty diesel vehicles or construction equipment (the wording varies)
- Focus has been PM reduction via retrofits, but requiring NOx reduction is also likely as retrofit technology improves

Key Strategy: Contract Specs

- NE states focused on analyzing nonroad fleets
- Retrofits of construction equipment focus of regulation at state and local level, with different contract specs emerging in DOTs, etc.
- NEDC developed a model contract spec for adoption by municipalities and large private institutions/organizations

Key Features

- Technical standard for retrofitting onroad, nonroad, and generators tracks with federal standards for new engines, to ensure product availability (example: 20% PM reduction required for nonroad until 1/1/13, when standard becomes 85% reduction)
- Spec recommends adoption for projects of \$2 million+ in urban areas
- Spec recommends that project developer fully pay for retrofits, as mitigation for air quality impacts of construction

About Costs

- Contractor on large hospital project says total cost of retrofits to date is <1/1000 (<\$125,000) (see northeastdiesel.org/workshop-040708.htm)
- State DOT says cost for major highway project is 0.015% of total budget
- Granted, costs will rise with DPF technology, but still small part of budget for large projects

What You Can Do

- Retrofit vehicles, CHE, generators, etc.
- Use ULSD in all engines
- Reduce idling
- Adopt the contract spec for construction projects or permits

More Information



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