M. Coates
18-4-4

DIESEL TECHNOLOGY FORUM

Statement of the Diesel Technology Forum
On the Matter of
Board Item 18-4-4: Public Meeting to Consider California's Beneficiary Mitigation Plan for the Volkswagen Environmental Mitigation Trust

May 25, 2018
Sacramento, CA

I am Michael Coates of Mightycomm here today representing the Diesel Technology Forum, a not-for-profit educational organization representing manufacturers and suppliers of advanced diesel engines, fuels and emissions control technologies.

Thank you for the opportunity to comment on the Beneficiary Mitigation Plan ("Plan") for nitrogen oxide ("NOx") emissions reduction.

We have provided several materials for the Board's consideration in addition to the written comments submitted previously.

This plan should be about mitigating NOx emissions in the most cost-effective, fastest way possible. But as it currently stands, the most cost-effective projects that will deliver the most emission reductions, including those for disadvantaged communities, are slated to receive the least funding under the proposed Plan.

Fully 71 percent of total emission reduction benefits in the proposed plan will be derived from a single category (Internal Combustion Engine – Freight & Marine) that will receive only 14 percent of funds.

- 6,750 of the anticipated 10,150 tons of NOx reduced through projects outlined in the Plan will be derived from these marine and switch locomotive projects.

The most cost effective near-term NOx reduction technologies are not zero emissions technologies but advanced internal combustion engine technologies. Our recent joint research with the Environmental Defense Fund finds that the most cost-effective upgrades make the biggest health impacts:

- Upgrading a single switcher locomotive to the latest Tier 4 diesel technology reduces nine tons of NOx a year, equivalent to replacing 29 older trucks or removing 8,000 cars from the road for a single year all at a cost of only $15,000 per ton of NOx removed.

Some clean diesel options are 200 times or more cost-effective at reducing NOx than other alternative fuel strategies. And these options are available now, not five to 10 years or longer from now.

But these are not the favored options in the current plan.

Under this proposed spending plan, communities located near freight corridors such as those along the I-710 freeway and congested urban areas or in the central valley will have to continue to wait for air quality improvement. Accelerating the retirement of the oldest and largest engines and the turnover to the newest version of diesel technology will deliver proven clean air benefits. And these options don't depend on installing new infrastructure or hope for aligning consumer purchasing decisions with new technology availability.

This proposal is out of step with what Californians really want by misplacing a higher value on its vision for the future than the ability to attain proven NOx reductions now in the near-term.

A recent public opinion poll conducted among 2,000 Californians across the State confirms that seven out of 10 Californians are not willing to sacrifice what makes sense in the present energy environment entirely for the future prospect of a better one.

They are not willing to sacrifice proven near-term technologies for what could be in the future; there is no reason that they can't have both with some reallocation of funds in this program.

California has pushed hard to reduce emissions from diesel engines to near-zero and the Board should be congratulated for these efforts. It's now time to get these technologies out in the field and generate substantial benefits particularly for those communities most in need of emission reduction benefits.

Thank you for the opportunity to provide these comments.

Fox&Hounds
KEEPING TABS ON CALIFORNIA BUSINESS AND POLITICS

423 million new opportunities for clean air now

By Allen Schaeffer
Executive Director of the Diesel Technology Forum
Wednesday, April 19th, 2017

Governor Brown's pet transportation bill that was just approved sealed the deal for higher diesel fuel taxes and required some horse trading with truckers seeking stability in fleet vehicle requirements for the future. It's a familiar path in California – one with mixed results.

The state that leads the nation in electric car registrations last year ranked 47th of 50 for adoption of the latest in low-emission commercial truck technology. Around 23 percent of the largest tractor-trailer size commercial trucks in California are of the newest and cleanest generation, compared with a national average of 30 percent. Only Alaska, Maine, Arizona and Kentucky rank lower.

The high population of older vehicles is significant because California's federal ozone non-attainment status – while improving – still falls consistently short. The primary culprit cited by clean air regulators is nitrogen oxide (NOx) emissions from these older diesel trucks which regulators say must be drastically reduced to meet ozone standards.

Several factors likely contribute to the low penetration of new technology vehicles. The most notable is a set of California Air Resources Board rules that require all trucks registered in the state be 2011 model year or newer by 2023. Diesel engines power well over 90 percent of the fleet with the newest versions having 90 percent fewer emissions than older models.

Now there's a golden opportunity for California to take immediate and meaningful steps to reduce NOx emissions in the form of $423 million from the VW Environmental Mitigation Trust.

This means, for about the next six years, many older, higher-emitting trucks – though still perfectly legal –will traverse California's roads, delivering the daily goods and services needed by Californians. Some of the oldest trucks have 60 times the emissions of a new diesel truck, but all support the livelihood of thousands of independent truckers and small businesses.

Now there's a golden opportunity for California to take immediate and meaningful steps to address the very issue it so often espouses – reducing these NOx emissions. The new opportunity comes in the form of $423 million from the Environmental Mitigation Trust included in "Appendix D" of the Volkswagen emissions settlement. It's important to note that Trust funds are for offsetting emissions generated from the operation of the VW vehicles in violation, not to advance other technology agendas.

Some clean diesel options are 200 times or more cost-effective at reducing NOx than other alternative fuel strategies.

Applying settlement funds to accelerate the repowering of the very largest and oldest trucks or industrial marine and locomotive engines with new technology would yield immediate and significant NOx benefits, and do so at the lowest cost per ton. Some clean diesel options are 200 times or more cost-effective at reducing NOx than other alternative fuel strategies. Communities located near freight corridors such as those along the I-710 freeway and congested urban areas with the highest ozone levels bear the largest burden. They shouldn't have to wait for cleaner air when these cleaner trucks are available right now.

State air regulators have said the fastest reductions in NOx emissions in 2035 won't come from power plants or even the electrification of passenger vehicles, but rather from the turnover of older commercial trucks powered with the latest clean diesel engines. It's a proven strategy, as evidenced by the Ports of Los Angeles and Long Beach Clean Truck Programs that moved truckers to newer technology so quickly that port pollution was reduced by 70 percent in only one year.

As for California's vision of future electrification, it is well funded thanks to an additional, exclusive $800 million from another part of the VW settlement to be paid out over the next 10 years. But those investments won't pay significant clean air dividends for decades, especially along freight corridors. In contrast, the newest and cleanest diesel engines, trucks and machines are on dealer lots today.

Accelerating the turnover of older commercial diesel trucks and heavy-duty rail and marine engines to newer models is a proven strategy to mitigate NOx emissions. California policymakers know that. It's what they've been saying for years.

It's a strategy that can yield more clean air for the dollar and deliver it faster to more people. Now it's time to get it done.

(Allen Schaeffer is the Executive Director of the Diesel Technology Forum, a non-profit organization located in Frederick, MD, that is dedicated to raising awareness about the importance of diesel engines, fuel and technology. For more information visit www.dieselforum.org.)

DIESEL TECHNOLOGY FORUM

THE SACRAMENTO BEE

Clean diesel

http://www.sacbee.com/opinion/letters-to-the-editor/article169466622.html
August 26, 2017

Re "What California should really do with cap-and-trade windfall," Editorials, Aug. 23): The Sacramento Bee editorial board's endorsement of carbon cap-and-trade funds for transportation is diminished by antiquated perceptions of diesel technology. The California Air Resources Board recognizes new diesel as a proven carbon and NOx reduction solution. While manufacturers explore and develop advanced technologies and biofuels, diesel drives California's economy. Exotic freight solutions may come to market, eventually. Today, no other technology competes with new diesel in biofuel capabilities, efficiency, power, low emissions and reliability. In 2010, diesel trucks became 95 percent cleaner. Older models, however, make up 85 percent of California's fleet of commercial trucks. Upgrading old trucks with near-zero-emission models is smart. Clean diesel is a big part of the solution for California, today and tomorrow.

TOM FULKS, DIESEL TECHNOLOGY FORUM, SACRAMENTO

What California should really do with cap-and-trade windfall

BY THE EDITORIAL BOARD
AUGUST 23, 2017 6:02 PM
http://www.sacbee.com/opinion/editorials/article169011037.html

Starting with Thursday's Senate budget subcommittee hearing, lawmakers can use a $1.4 billion cap-and-trade windfall to bring about important change in the lives and lungs of Californians, or they can squander it. Lawmakers last month approved legislation extending the cap-and-trade program through 2030. Seeing that cap and trade will be a part of California for years to come, traders bought and sold permits to pollute at the August auction, delivering this most recent infusion to state coffers, a record haul.

The cap-and-trade auction delivered $640 million, on top of the $840 million already in the bank and not yet earmarked, to be doled out in the final weeks of this legislative session. It's like Christmas in August. In past years, lawmakers earmarked 60 percent of cap-and-trade money to the voter-approved high-speed rail, housing near transportation hubs, inner-city rail and low-carbon transit. The $1.4 billion is the remainder we're talking about. Sen. Bob Wieckowski, D-Fremont, who chairs the budget subcommittee,

wants to aim high by using some of the money to electrify commuter rail, a worthy effort in the fight against climate change.

"The investment needs to have a big impact," Wieckowski told an editorial board member. He's right. Alas, some legislators have lesser ideas.

Legislators have requested $10.5 million to open three fire stations in Contra Costa County; $1.5 million to turn Sonoma State Hospital into a park; $20 million for Delta wetlands restoration; $20 million to make farm irrigation more efficient; an unspecified sum for farmworker housing; $50 million for transportation in Inglewood, presumably to help people come and go from a sports arena to be developed later; and an amount to be determined to provide free shuttle rides in downtown San Diego using, what else, electric vehicles. Altogether, legislators' wishes released Wednesday totaled $3.6 billion, almost three times what's available. If only Santa Claus existed, we'd endorse them all. We want the Delta restored, whatever that means, and we encourage greater efficiency in agricultural irrigation. But cap-and-trade revenue is not free. We pay for it directly through 11 cents per gallon of gasoline, and indirectly through charges that corporate polluters pass to consumers. Rather than squander $1.4 billion on shiny environmentally correct objects, legislators should target the money where it would count most: transportation.

Cars, trucks, buses, trains and other modes of transportation remain the largest source of greenhouse gas emissions in the state. California long has issued rebates to people who buy zero-emission vehicles. That program has run out of money. It ought to be restarted and aimed at helping working people buy lower cost electric vehicles. Diesel engines are especially harmful, creating smog, damaging lungs and emitting greenhouse gas. Why not set a goal of ending diesel pollution by, say, 2030? The state already provides incentives for diesel engine owners to go green. If anything, that program should receive more money. Diesel-powered school buses should be exchanged for electric buses.

While they're at it, legislators should find ways to encourage companies that directly or indirectly benefit from cap and trade to build or expand zero-emission auto, truck and bus factories in California. We don't endorse the sort of corporate welfare lavished by Nevada on Tesla to build its battery factory outside Reno. But California workers pay for cap and trade, and policymakers ought to find reasonable ways to favor companies that employ California workers. Critics of cap and trade anticipate a boondoggle. Brown and legislators who support cap and trade have a great opportunity to prove that a green economy works, but only if they don't blow it on narrow pork projects.

The Fresno Bee

Letter to the Editor:
Put Valley first in line for Volkswagen settlement funds

By Tom Fulks, February 21, 2018

Last year, 46 percent of San Joaquin Valley voters we polled said they believe Sacramento's air pollution reduction strategies are slanted against Central Valley's air quality in favor of California's coastal areas.

Thankfully, California will soon have $423 million to pursue nitrogen oxide (NOx) emission reduction solutions. As Sacramento decides how to spend these funds, the Central Valley should be a priority.

The Volkswagen settlement offers a golden ticket for immediate, meaningful steps to reduce NOx emissions. But an approach focused only on electrification, as some propose, asks Californians to bet on clean air benefits from technologies not yet widely available or not available at all. The net result: communities must wait five, 10 or 15 years for cleaner air.

Applying California's Volkswagen settlement funds to repower Central Valley's older trucks and equipment with the latest clean diesel technology will yield immediate, significant NOx benefits for our communities, and do so at the lowest cost per ton. No other technology competes with new, clean diesel's efficiency, power, performance, and ability to reduce NOx emissions.

The environmental benefits gained by a clean diesel strategy will affect more Californians than one focused on costly alternatives that may never arrive in meaningful numbers.

TOM FULKS, DIESEL TECHNOLOGY FORUM, LOS GATOS

Link to article: *http://www.fresnobee.com/opinion/letters-to-the-editor/article201424389.html*

The Modesto Bee

Letter to the Editor:
California must target trucks to clean up the air

By Tom Fulks, March 19, 2018

For decades, Central Valley communities have been promised first-in-line status when it comes to emission reduction strategies. So why, then, with $423 million in unexpected funding coming to the state from the Volkswagen Environmental Mitigation Trust settlement, does the California Air Resources Board ignore proven, available and cost-effective technologies that could maximize clean air benefits for the Central Valley?

As-is, ARB plans to purchase a small fleet of all-electric school and transit buses. This strategy will do the least to reduce emissions for the Central Valley because it ignores the largest source of emissions in California – heavy-duty trucks – as well as more cost-effective technology options.

A better bet for the Central Valley? Using California's settlement funds to repower trucks and equipment with the latest clean diesel technology would do the most to maximize emission reductions immediately.

Want to know more? Visit https://www.dieselforum.org/vwfund

TOM FULKS, DIESEL TECHNOLOGY FORUM

Link to article: *http://www.modbee.com/opinion/letters-to-the-editor/article205911984.html*

CLOVIS ROUNDUP

Letter to the Editor:
Does ARB Care About Reducing Emissions?

By Tom Fulks, March 21, 2018

The Air Resources Board (ARB) just issued its draft plan for spending California's $423 million from the Volkswagen settlement. The settlement dictates this money must be used to maximize emission reductions, NOT promote a particular technology. ARB's plans? Spend most of the funds to purchase a few, expensive, all-electric trucks and buses. Central Valley residents will be left with a large number of older, higher-emitting trucks on the road.

When it comes to cost-effective replacements that prioritize emission reductions, nothing beats clean diesel. This technology is available TODAY and at a MUCH lower price-point than alternatives. The U.S. Department of Transportation and the Clean Air Task Force agree that more emissions can be reduced by investing in clean diesel. Why can't ARB?

Want to know more? Visit www.dieselforum.org/vwfund

Tom Fulks, Diesel Technology Forum

Link to article: *http://www.clovisroundup.com/letter-to-the-editor-does-arb-care-about-reducing-emissions/*

The Bakersfield Californian

A MEMBER OF THE TBC MEDIA FAMILY

Letter to the Editor: CARB's misplaced approach

By Tom Fulks, May 17, 2018

Steven Mayer pointed out in his May 15 article "Feds, state provide millions to clean up diesel trucks, tractors — but is it enough?" that funding for newer heavy-duty trucks in California is insufficient to achieve "the magnitude of emissions reductions required for attainment."

The world looks to California on environmental policy. So how shameful is it that our state is among the bottom five when it comes to the adoption of the latest clean commercial vehicle technologies?

California's fleet of trucks and buses is much older than in 46 other states. The relative age of these vehicles translates into a higher-than-average amount of tailpipe emissions from big-rigs and buses on our roads.

Replacing these older trucks and buses with anything new – clean diesel, natural gas, EV, gasoline – will reduce emissions. But, a greater number of these old vehicles can be replaced using new clean diesel, meaning more emissions can be eliminated in total.

Unfortunately, the California Air Resources Board has chosen to invest California's $423 million from the Volkswagen settlement in the most expensive bus and truck technologies, replacing the fewest number of trucks and buses and leaving lots of emissions on the table.

San Joaquin Valley residents would be better served if CARB prioritized clean diesel replacements for older, heavy-duty trucks. These are the largest source of emissions in California, and no other technology competes with the latest generation of diesel technology in efficiency, power, performance, and the ability to cheaply reduce NOx emissions.

Tom Fulks, Diesel Technology Forum, Morro Bay

Link to article: *http://www.bakersfield.com/opinion/letters-to-editor/letter-to-the-editor-carb-s-misplaced-approach/article_17082b82-592c-11e8-a9e2-6bab0bc7890c.html*

The most cost-effective upgrades make the biggest health impact

New Tier 4 engines for tug boats reduce NOx emissions by 91%

The $2.9 billion VW Environmental Mitigation Trust provides funding to upgrade older vehicles and equipment to rapidly reduce nitrogen oxide (NOx) emissions, which contribute to hazardous smog pollution. Upgrading just one of the oldest, dirtiest tug boats is like taking tens of thousands of passenger vehicles off the road per year, bringing substantial health benefits to at-risk communities. With states now deciding how to invest these funds, repowering these older vessels with cleaner Tier 4 engines is a game-changer for delivering immediate and cost-effective air quality benefits.

Upgrading an old tug boat with new Tier 4 engines removes

30 tons of NOx/year[1]

This is equivalent to

Replacing **96** drayage trucks[2]

OR

Removing **26,667** cars for 1 year[3]

Upgrading old engines means cleaner air for all

EPA estimates that by 2020, only 3% of tug boats will be replaced with cleaner Tier 4 engines. The VW Environmental Mitigation Trust provides a rare opportunity to retire the oldest diesel engines still in operation, which can last 50 years or longer. Tier 4 or Tier 3 engines will deliver cleaner, healthier air faster to at-risk communities. These new engines also improve fuel efficiency, which reduces CO_2 and black carbon emissions, two important greenhouse gas pollutants.

Tug projects are a better value

Tier 4 engines

1 ton of NOx reduction costs

Other projects $30,000[4]

Tier 4 tug engines $5,000[1]

EDF ENVIRONMENTAL DEFENSE FUND
Finding the ways that work

DIESEL TECHNOLOGY FORUM

1. Ramboll, 2018, Emission reductions and cost effectiveness for marine and locomotive projects
2. EPA, 2016, National Port Strategy Assessment
3. Tier 2 car driven 15,000 miles per year
4. FHWA, 2015 CMAQ Cost-Effectiveness Report

The most cost-effective upgrades make the biggest health impact

New Tier 4 engines for switchers reduce NOx emissions by 95%

The $2.9 billion VW Environmental Mitigation Trust provides funding to upgrade older vehicles and equipment to rapidly reduce nitrogen oxide (NOx) emissions, which contribute to hazardous smog pollution. Upgrading just one of the oldest, dirtiest switchers is like taking tens of thousands of passenger vehicles off the road per year, bringing substantial health benefits to at-risk communities. With states now deciding how to invest these funds, repowering these older switchers with cleaner Tier 4 engines is a game-changer for delivering immediate and cost-effective air quality benefits.

Upgrading an old switcher with new Tier 4 engines removes

9 tons of NOx/year[1]

This is equivalent to

Replacing **29**[2] older trucks

OR

Removing **8,000** cars for 1 year[3]

Upgrading old engines means cleaner air for all

EPA estimates that by 2020, only 5% of switcher engines will be replaced with cleaner Tier 4 engines. The VW Environmental Mitigation Trust provides a rare opportunity to retire the oldest diesel engines still in operation, which can last 70 years or longer. Tier 4 engines will deliver cleaner, healthier air faster to at-risk communities. These new engines also improve fuel efficiency, which reduces CO_2 and black carbon emissions, two important greenhouse gas pollutants.

Switcher projects are a better value

1 ton of NOx reduction costs

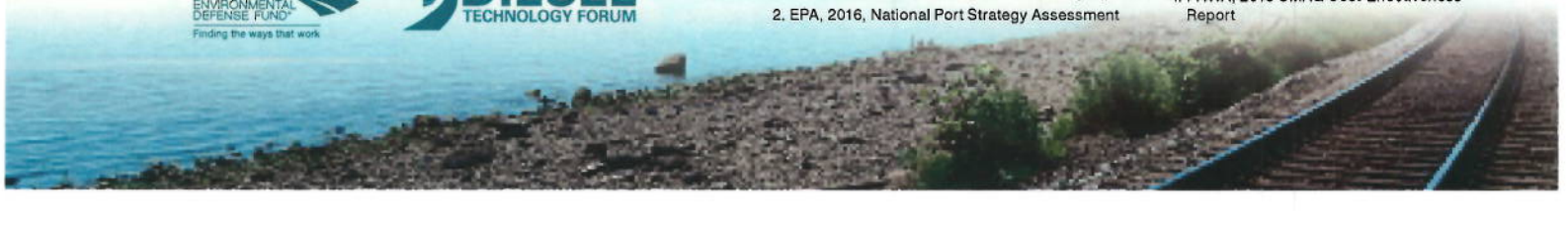
Other projects
$30,000[4]

Tier 4 switcher engines
$15,000[1]

1. Ramboll, 2018, Emission reductions and cost effectiveness for marine and locomotive projects
2. EPA, 2016, National Port Strategy Assessment
3. Tier 2 car driven 15,000 miles per year
4. FHWA, 2015 CMAQ Cost-Effectiveness Report

EDF ENVIRONMENTAL DEFENSE FUND
Finding the ways that work

DIESEL TECHNOLOGY FORUM



Tug and Switcher Engine Upgrades Offer Most Cost-Effective Option for VW Funds, Research Shows

New Research Demonstrates the Significant Emission Reduction and Cost-Saving Benefits of Clean Diesel Large Engine Upgrades

March 8, 2018 (WASHINGTON) – Clean diesel technology upgrades for large tug and switcher locomotive engines cost only $4,379 to $15,201 per ton of nitrogen oxides (NOx), compared to more than $30,000 per ton of NOx for many other diesel emission reduction projects.

The Diesel Technology Forum (DTF) and the Environmental Defense Fund (EDF) today released a report documenting the significant emission reduction benefits that can be gained by replacing older engines in tug boats and switcher locomotives with the latest clean diesel models. Funds from Volkswagen's (VW) $2.9 billion environmental trust, established to mitigate for the excess emissions resulting from defeat devices on 590,000 diesel vehicles, can be used to help pay the cost of repowering these and other old diesel engines.

The joint research estimates that replacing older engines in a typical tug boat with the latest clean diesel model that meets the latest emissions milestones can eliminate on average 14.9 tons of NOx emissions per year. A similar activity for switchers can reduce NOx emissions by 9.0 tons per year.

DTF and EDF's research confirms that upgrading tug and switcher engines to the latest clean diesel technology offers the most cost-effective option for reducing diesel emissions. Replacing tugboat engines with clean diesel technology costs on average $4,379 per ton of NOx eliminated, while upgrading a switcher engine costs $15,201 per ton.

"The substantial reductions possible with clean diesel replacements offer great news for communities near ports and rail yards. These areas are often among those most vulnerable to smog-forming compounds like NOx, so residents there stand to reap the greatest benefits," said Allen Schaeffer, DTF Executive Director. "While engine replacement projects are costly, the return on the investment on a dollar-per-ton of emissions reduced makes these projects a compelling choice. States looking to maximize cost-effective investments to reduce NOx emissions should prioritize clean diesel upgrades for tug and switcher engines."

"Many tugs and switchers operate in ports that fail to meet federal health-based air quality standards," said Dr. Elena Craft, EDF Senior Health Scientist. "Repowering older tug and switcher engines can deliver cleaner, healthier air faster to at-risk communities near ports. These new engines also help reduce carbon dioxide emissions and black carbon, two important climate pollutants."

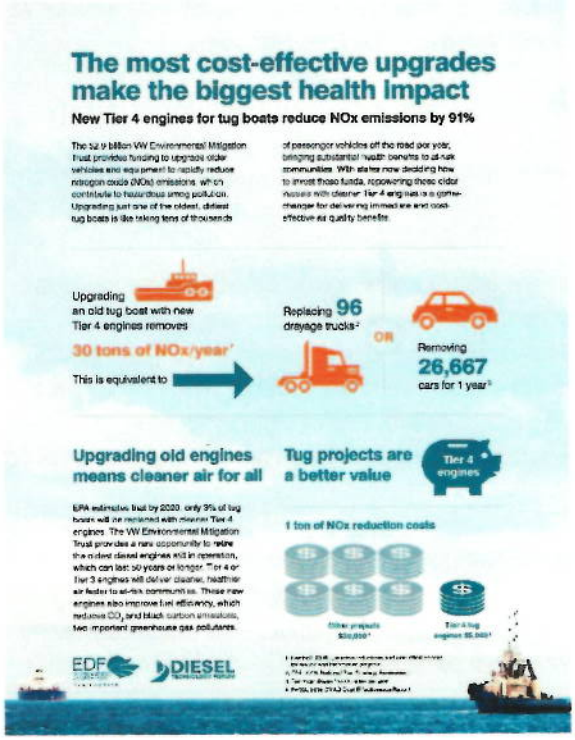
Starting in 2015, new clean diesel engines used in marine applications and switcher locomotives in the United States were required to meet Tier 4 emissions standards. Relative to previous generations of technology, the latest clean diesel technologies can reduce emissions, including NOx and fine particle emissions (PM2.5), by 88 percent to 95 percent. While the latest clean diesel technologies are ready and available to reduce emissions, the U.S. Environmental Protection Agency estimates that by 2020, unless action is taken, only 5 percent of the switch locomotive and 3 percent of the marine workboat fleets will be powered by these clean technologies.

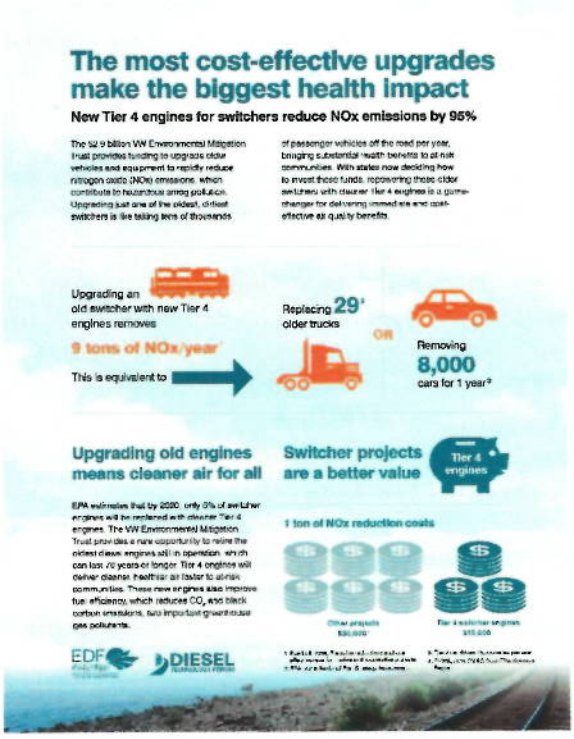
"Right now, state governments have an opportunity to get more of these clean technologies out in the field to deliver immediate emission reductions for communities near port operations," said Schaeffer. "The recent settlement with VW established an environmental remediation program that will soon provide $2.9 billion to states for the sole purpose of reducing NOx emissions. Policymakers looking to reduce emissions quickly for communities near ports and rail lines should consider these highly cost-effective clean diesel solutions."

Learn more at https://ww.dieselforum.org/largeengineupgrades and https://www.dieselforum.org/vwfund.

Benefit Analysis, NOx Reductions for Large Engines				
	Parts & Labor Cost (total)	NOx Reduction (tons/year)	Cost Effectiveness	
			Full Cost ($/ton)	*40% Cost ($/ton)*
Tug	$1,400,000	14.9	$4,379	$1,752
Switcher	$2,600,000	9.0	$15,201	$6,080

Source data available here.





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The Diesel Technology Forum *is a non-profit organization dedicated to raising awareness about the importance of diesel engines, fuel and technology. Forum members are leaders in clean diesel technology and represent the three key elements of the modern clean-diesel system: advanced engines, vehicles and equipment, cleaner diesel fuel and emissions-control systems. For more information, visit www.dieselforum.org. For the latest insights and information from the leaders in clean diesel technology, join us on Facebook, follow us on Twitter @DieselTechForum, or YouTube @DieselTechForum and connect with us on LinkedIn. Get it all by subscribing to our newsletter Diesel Direct for a weekly wrap-up of clean diesel news, policy analysis and more direct to your inbox.*

Environmental Defense Fund *(edf.org), a leading international nonprofit organization, creates transformational solutions to the most serious environmental problems. EDF links science, economics, law, and innovative private-sector partnerships. Connect with us on Twitter, Facebook, and our Energy Exchange blog.*