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EPA Issues “National Port Strategy Assessment: Reducing Air Pollution and Greenhouse Gases at U.S. Ports”

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On September 22, 2016, EPA issued a report titled “National Port Strategy Assessment: Reducing Air Pollution and Greenhouse Gases at U.S. Ports” (the “Assessment”).[1] According to EPA, the Assessment supports the goal of EPA’s “Ports Initiative”[2] to reduce air pollution and greenhouse gases through collaboration among industry, government, and communities. Notably, EPA urges state and local governments, ports and port operators, Tribes, communities and other stakeholders to use the Assessment to inform their priorities and port-related decision making, and to achieve more emission reductions across the United States.

Industry stakeholders should closely monitor developments that come on the heels of the Assessment. It bears watching, for example, whether state and local governments will take action – and what kind of action (voluntary measures, or command and control regulations) – to reduce port-related emissions.

Key Findings

Recognizing the vital role ports play in the United States economy – and that ports are set to expand significantly to meet economic and infrastructure demands going forward – EPA developed this national scale assessment to examine current and future emissions from various diesel sources operating in port areas and to consider potential strategies to reduce emissions from port-related trucks, locomotives, cargo handling equipment, harbor craft, and ocean-going vessels.

Key findings in the Assessment include:

- **Port-related diesel emissions, especially $PM_{2.5}$, NOx and air toxics, impact public health. Port related diesel emissions, such as CO_2 and black carbon, also contribute to climate change.**
    - The Assessment provides “options to inform voluntary, place-based actions that may be taken by federal, state, and local governments, Tribes, ports, communities, and other stakeholders to reduce these impacts and enhance public health and the

environmental protection."

- **Progress is already happening, but more emission reductions are possible.**

    - EPA's technology standards and fuel sulfur limits are expected to significantly reduce emissions as new diesel trucks, locomotives, cargo handling equipment and ships enter the fleet, and some stakeholders have also adopted voluntary strategies to reduce emissions such as those advocated in the Assessment. EPA hopes the Assessment "will encourage more areas to adopt and incentivize such voluntary programs."

- **Emissions can be reduced with effective strategies that are currently available.**

    - EPA claims that currently available strategies, including electrification, can be used to reduce emissions. The Assessment provides the following table of such strategies:

Table 1-1. Examples of Strategy Scenarios Assessed

Sector	Scenario Description
Drayage Trucks	Replace older diesel trucks with trucks that meet cleaner EPA standards a hybrid electric vehicles.
Rail	Replace older line-haul locomotive engines with cleaner technologies, ir electric locomotives.
	Improve fuel economy.
	Replace older switcher locomotive engines with cleaner technologies and Set (GenSet) technology.
Cargo Handling Equipment	Replace older yard truck, crane, and container handling equipment with technologies, including electric technologies.
Harbor Craft	Replace or repower older tugs and ferries with cleaner technologies, includ electric vessels.
Ocean-going Vessels	Switch to lower sulfur fuel levels that are below EPA's regulatory standa liquified natural gas for certain vessel types.
	Utilize shore power to reduce hoteling of container, passenger, and reefe
	Apply Advanced Marine Emission Control Systems for container and tanke

- **Older, dirtier diesel vehicle equipment should be replaced first.**

    - EPA claims that because it will be many years before older trucks and equipment turn over to newer technology, accelerating the replacement of such older vehicles and replacing them with cleaner technology is a good option, yielding benefits as set forth in the following table:

Table 1-2. Examples of Effective Port Strategies to Reduce NOx and PM2.5 Emissions

Strategy Scenario	Percent reduction from BAU [Busi Usual]

	NOx		PM2.	
	2020	2030	2020	
Replace older drayage trucks	19-48%	48-60%	43-62%	
Replace older switcher locomotives	16-34%	17-43%	22-44%	
Replace older CHE	17-39%	13-25%	18-37%	
Replace or repower harbor craft	10-24%	25-38%	13-41%	
Reduce OGV hoteling emissions with shore power [footnote omitted]	4-9%	7-16%	3-8%	

- **CO_2 continues to increase, but effective strategies are available.**
    - EPA claims that port-related CO_2 emissions will increase due to increases in economic trade, but that most of EPA's existing regulations do not address CO_2 for port mobile sources. The Assessment evaluates voluntary replacement of diesel vehicles with zero emissions and other advanced technologies, concluding as follows:

Table 1-3. Examples of Effective Port Strategies to Reduce CO_2 Emissions

Strategy Scenario	Percent reduction from CO2	
	2030	20
Replace older drayage trucks with plug-in hybrid electric trucks	0-4%	6-1
Replace older locomotives with electric locomotives, GenSets, and fuel efficiency	3-6%	11-2
Replace older CHE with electric technologies	7-18%	27-4
Reduce OGV hoteling emissions with shore power [footnote omitted]	2-5%	4-1

- **Reduction potential varies across mobile source sectors.**
    - The Assessment concludes that that scenarios targeting land-side operations (*e.g.*, drayage trucks, locomotives, and cargo handling equipment) are generally expected to result in greater emission reductions than those scenarios targeting water-side operations (*e.g.*, harbor craft and ocean-going vessels).
- **Effective strategies are available for every type and size port.**
    - EPA conducted a stratification analysis assessing the effectiveness of different strategies for ports of different types: container, bulk, and passenger; and sizes: large and small. The analysis shows that not all strategies will have the same results at all ports. Therefore, the Assessment concludes that stakeholders should "consider what combination of strategies should be used to reduce emissions for a particular port area, depending upon the type of activity at a port."
- **More focus is needed to reduce port-related emissions.**
    - EPA states that its assessment shows how more investment in reducing port-related emissions via voluntary place-based programs can make a difference and that many of the strategies discussed in the Assessment are eligible for existing federal funding sources, such as EPA's Diesel Emissions Reduction Act grant program.

After the National Port Strategy Assessment: What's Next?

EPA already supports voluntary efforts to reduce diesel emissions through its Clean Diesel Campaign and SmartWay program. It remains to be seen whether the Assessment will lead state and local governments to promote their own voluntary initiatives or mandatory regulations, and what other developments, if any, will take place as a result of EPA's assessment.

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[1] Available at: https://www.epa.gov/sites/production/files/2016-09/documents/420r16011.pdf.

[2] Available at: https://www.epa.gov/ports-initiative.

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