

Port Authority of NY & NJ Air Quality Mitigation Needs

updated: 3-1-2018

State	Mitigation Project	Overall goal for the use of funds	Project Description	Scope	Total Project Cost	# Units	Cost Per Unit	Settlement Funds (%)
NJ	Zero Emission Vehicles (ZEV)	Reduce NO(x) and PM pollution from Port-related trucking activities; address Ironbound EJ concerns	75% of the cost of new all-electric replacement drayage truck	Financial assistant to replace diesel trucks with all-electric replacement	\$8,000,000	20	\$400,000	75
NJ	DERA Option Truck Replacement Program (NJ)	Reduce NO(x) and PM pollution from Port-related trucking activities; address Ironbound EJ concerns	50% of the cost of a replacement drayage truck powered by a 2011 model year or newer certified engine. Not to exceed \$25,000.	Financial assistance to replace trucks with engines that are 2006 and older.	\$75,000,000	1500	\$50,000	50
NJ	Capture Control System (NJ)	Reduce NO(x) and PM pollution from Port-related shipping activities with capture and control technology.	Deploy on-shore, mobile Marine Exhaust Treatment Systems (METS) with 91% capture efficiency; combined reductions of 90% for NOx, PM.	Purchase one METS on-shore mobile system for use at Port Newark Public Berth	\$3,700,000	1	\$3,700,000	dependent on DERA
NJ	Ferry Repowering (NJ)	Reduce NO(x) and PM emissions associated with ferry operations by replacing boat engines with newer models that will produce 80% less NO(x) and consume 25% less fuel.	Provide financial assistance to ferry operator to replace their Tier 1 Ferry boat engines with Tier 3. The improved technology of Tier 3 engines will reduce fuel consumption nitrous oxide emissions by no less than 80%.		\$2,500,000	6	\$416,667	40%
NJ	Aviation GSE: Scale Up (NJ- PA)	Reduce NO(x) and PM emissions associated with airport ground support equipment (GSE) operations by replacing conventional or diesel powered GSE with electric GSE and charging stations that will significantly reduce on-airport emissions.	Provide financial assistance for large- scale airport ground support equipment (GSE) electrification at EWR. Only 10% of the fleet across all Port Authority airports is currently electrified.	Purchase and installation of 23 PA-owned charging stations to support the conversion of 53 GSE to electric. Charging stations would cost approximately \$1.75m at a 100% reimbursement rate.	\$1,750,000	23	\$76,087	100%
NJ	Aviation GSE: Scale Up (NJ- Tenants)	Reduce NO(x) and PM emissions associated with airport ground support equipment (GSE) operations by replacing conventional or diesel powered GSE with electric GSE and charging stations that will significantly reduce on-airport emissions.	Provide financial assistance for large- scale airport ground support equipment (GSE) electrification at EWR. Only 10% of the fleet across all Port Authority airports is currently electrified.	Purchase and installation of 36 tenant- owned charging stations to support the conversion of 71 GSE to electric. Charging stations would cost approximately \$2m and be reimbursed for \$1.5m at the 75% reimbursement rate. Purchase of 124 tenant-owned electric GSE at an estimated cost of \$8m to be reimbursed for \$6m at the 75% reimbursement rate.	\$10,000,000	160	\$62,500	75%

NJ	Aviation GSE: Phase 1 Incentive Program (NJ-PA)	Reduce NO(x) and PM emissions associated with airport ground support equipment (GSE) operations by replacing conventional or diesel powered GSE with electric GSE and charging stations that will significantly reduce on-airport emissions.	Provide financial assistance for an airport ground support equipment (GSE) electrification incentive program at EWR. PA-owned charging stations would be reimbursed at 100% and tenant-owned charging stations and GSE would be offered a 25% incentive. Only 10% of the fleet across all Port Authority airports is currently electrified.	Purchase and installation of up to 23 PA-owned charging stations at JFK and SWF to support the conversion of up to 53 GSE to electric. Charging stations would cost approximately \$1.75m at a 100% reimbursement rate. Note that the ultimate number of charging stations and GSE depends upon the level of tenant participation in the incentive program.	\$1,750,000	23	\$76,087	100%
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NJ	Shore Power System (NJ- Cape Liberty)		This project will install the land-side electrical infrastructure necessary for cruise vessels calling to hook up to "shore power" while docked for passenger loading/unloading so that they will not need to operate onboard diesel generators.	Shore power system that enables compatible vessel's main and auxiliary engines to remain off while at berth for the Cape Liberty Cruise Port. Emission reductions are based on 91 calls in 2017.	\$15,000,000	1	\$15,000,000	100%
NJ	Electric Cargo-Handling Equipment (NJ)	Replace diesel with electric cargo-handling equipment	Replace tenant owned cargo handling equipment at a Port Authority facility in New Jersey with electric yard tractors and associated charging infrastructure.	Tenant will be incentivized for up to 75% of the cost to replace or repower electric cargo-handling equipment.	\$20,000,000	50	\$400,000	75%

Settlement Funds Requested (\$/unit)	Settlement Funds Requested (\$/Total)	Eligibility Category (Appendix #)	Summary of Emissions Benefits	Year 1 Cost Effectiveness (\$/ton of NOx reduction)	Approximate Asset Life (years):	Lifetime Cost Effectiveness (\$/ton NOx reduction)	Notes
\$300,000	\$6,000,000	D-2 1(e)2	8.74 tons/year of NO _x reduction	\$915,331.81	10		
\$25,000	\$37,500,000	D-2 10	Maximum of 883.1 tons/year of NOx reduction	\$84,928.09	Varies		
Non-federal match TBD	Non-federal match TBD	D-2 10	Approximately 34.65 tons/year of NOx reduction and 0.62 tons/year of PM reduction.	\$34,579.44	20	\$1,728.97	
\$166,667	\$1,000,000	D-2 4(d)	Combined 80% reduction for NOx and PM, plus 80% for CO2	\$100,000	20	\$5,000	
\$76,087	\$1,750,000	D-2 7(e)	Approximately 25 tons/year of NOx reduction.	See below. The cost effectiveness calculation is for both programs combined, given that the PA-owned chargers would support tenant- owned vehicles that would be purchased at the 75% reimbursement rate, below.			
\$46,875	\$7,500,000	D-2 7(d)	Approximately 35 tons/year of NOx reduction	\$ 195,833.33	12	\$16,319.44	

			Up to approximately 25 tons/year of NOx reduction.	See below. The cost effectiveness calculation is for both programs combined, given that the PA-owned chargers would support tenant- owned vehicles that would be purchased at the 75% reimbursement rate, below.			
\$76,087	\$1,750,000	D-2 7(e)					*Emissions benefits and costs depend on level of tenant participation in incentive program

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\$15,000,000	\$15,000,000	D-2 5 (c)	Approximately 100.39 tons of NOx reduction	\$149,417.27	20-update		No commitment from cruise ship operator as of 1-30-2017
\$300,000	\$15,000,000	D-2 8 (d)	Maximum of 2.78 tons/year of NOx reduction	\$143,884.89 - update	10-update		