Republic Services Criteria Pollutant and Greenhouse Gas Reduction Initiatives

Republic has embarked on a variety of initiatives to reduce criteria pollutant emissions (NOx and PM2.5) and achieve a 35% reduction in Scope 1 and Scope 2 greenhouse gas (GHG) emissions by 2030.[1] To achieve these goals, Republic Services has implemented energy efficiency improvements and renewable energy projects aimed at reducing emissions from its landfills, buildings and waste collection fleet.

To drive measurable reductions in criteria pollutants and GHG emissions from its waste collection fleet, in select markets, Republic has implemented an early retirement approach for diesel vehicles, replacing them with battery-electric alternatives. This early retirement initiative accelerates emissions reduction beyond standard turnover cycles and prioritizes retiring the fleet's oldest, highest-emitting vehicles with cleaner and more efficient technologies that have recently been commercialized.

This strategy demonstrates the operational and sustainability benefits of transitioning to battery-electric solid waste collection vehicles. Beyond immediate emissions reduction, it establishes a scalable framework for expanding similar deployments and supports Republic's emission reduction goals within its fleet-emissions inventory. The initiative in Atlanta, Georgia, provides a practical model for both site-level expansion and systemwide application across our fleet of more than 18,000 vehicles.

[1] *2017 baseline year.*

Atlanta, GA

Reducing Criteria Pollutant and Greenhouse Gas Estimated Emissions Through Electrification

In Atlanta, Republic Services retired four diesel solid waste collection vehicles from from model years ranging from 1995 to 2009, 3 to 5 years before the end of their useful life, and replaced them with battery-electric solid waste collection vehicles. Early retirement and replacement resulted in criteria pollutant and GHG estimated emission reductions 3 to 5 years sooner than would have occurred otherwise. Table 1 summarizes the estimated emission reductions resulting from implementation of the Atlanta electrification project.[2]

Table 1: Atlanta – Estimated Emission Reduction Benefits Throughout Project Period[3]

Units Retired	Baseline Fuel	Replacement Fuel	Diesel Reduced (gal)	NOx Reduced (tons)	PM2.5 Reduced (tons)	HC Reduced (tons)	CO Reduced (tons)	CO2 Reduced (tons)
4	Diesel	Electric	54,112	1.91	0.018	0.064	0.281	609

Appendix A: Diesel Emission Quantifier Tool Inputs

Table 4: DEQ Inputs – Atlanta Electricification Project

Input	1286-4800	3027-4800	3110-4800	3189-4800
Type	On-road	On-road	On-road	On-road
Fleet	Refuse Hauler	Refuse Hauler	Refuse Hauler	Refuse Hauler
Class	Class 8	Class 8	Class 8	Class 8
Engine MY	2009	2009	2009	1995
Remaining Useful Life	4	5	4	3
Fuel Type	ULSD	ULSD	ULSD	ULSD
Fuel Cons. (gal/year)	1,969	5,320	4,036	1,164
VMT (mi/year)	4,966	22,264	17,038	2,593
Idling (hr/year)	138	372	283	81
Upgrade Year	2026	2026	2026	2026
Upgrade Type	Vehicle Replacement – All-Electric	Vehicle Replacement – All-Electric	Vehicle Replacement – All-Electric	Vehicle Replacement – All-Electric

[2] All emissions reductions calculations were performed using the U.S. Environmental Protection Agency's Diesel Emissions Quantifier (DEQ) Tool. The output file from the DEQ tool, including the data inputs, is included as Appendix A.

[3] DEQ Tool assumes 100% reduction in CO2 emissions and does not account for emissions associated with power generation.

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