



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 estimated 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 Plano, Texas, 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. See Republic Services 2024 [Sustainability Report](#) for more information on this GHG estimated emissions reduction target and our methodology.

Plano, TX

Reducing Criteria Pollutant and Greenhouse Gas Estimated Emissions Through Electrification

In Plano, Republic Services retired four diesel solid waste collection vehicles from model year 2008, 3 to 4 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 emissions reduction 3 to 4 years sooner than would have occurred otherwise. Table 1 summarizes the estimated emission reductions resulting from implementation of the Plano electrification project.²

Table 1: Plano – Estimated Emissions Reduction Benefits Throughout Project Period³

Units Retired	Baseline Fuel	Replacement Fuel	Diesel Reduced (gal)	NOx Reduced (U.S. tons)	PM2.5 Reduced (U.S. tons)	HC Reduced (U.S. tons)	CO Reduced (U.S. tons)	CO2 Reduced (U.S. tons)
4	Diesel	Electric	50,815	1.38	0.006	0.039	0.176	572

Appendix A: Diesel Emission Quantifier Tool Inputs

Table 4: DEQ Inputs – Plano Electrification Project

Input	2168-3402	2729-3402	3073-3402	3074-3402
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	2008	2008	2008	2008
Remaining Useful Life	3	4	3	3
Fuel Type	ULSD	ULSD	ULSD	ULSD
Fuel Cons. (gal/year)	1,887	577	5,903	8,379
VMT (mi/year)	15,772	8,541	11,908	23,441
Idling (hr/year)	52	18	21	40
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.

Budget Period starting 7/1/2024 and ending 8/31/2028.
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