

RYPOS

Transport Refrigeration Emissions Profile

Fleetco

Wayne Benson, National Account Manager | Sustainability
Rypos, Inc.

TO: Jane Smith, Director, ESG
CC: Rodney Jones, Fleet Manager

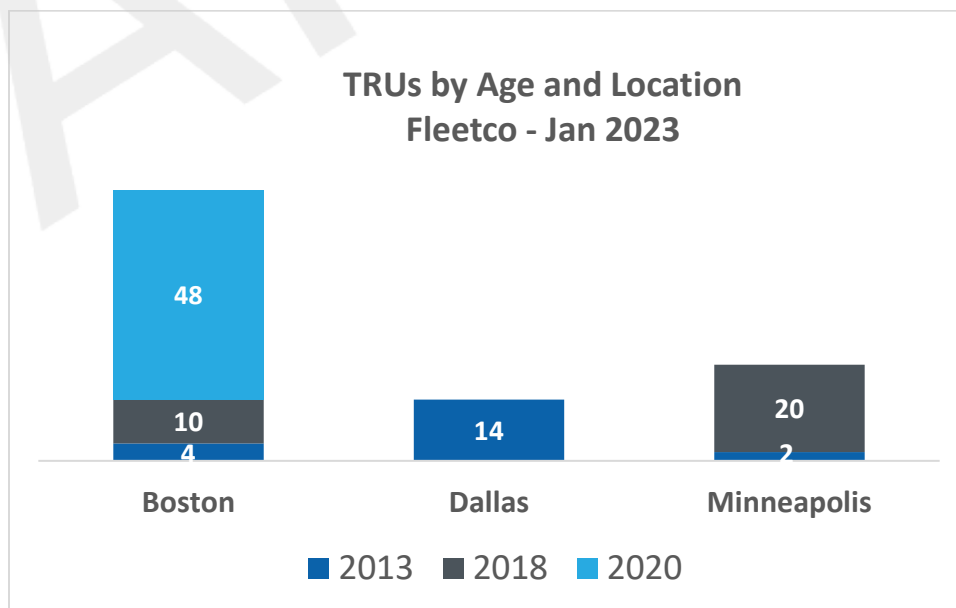
Thank you for your interest in Rypos Diesel Particulate Filters for Transport Refrigeration Fleet. After receiving your fleet data including reefer make, model, engine year, estimated annual operating hours and location, we were able to estimate your current particulate matter, total hydrocarbon and carbon monoxide emissions. In order for you to account for these emissions reductions for your ESG goals, we represent these emissions in CO₂equivalent units or CO₂e. This total does not include the CO₂, NOx and other emissions that occur from diesel engine operation.

Background

While Rypos has been manufacturing diesel particulate filters for transport refrigeration units for decades, the vast majority of TRUs in North America, both inside and outside of California emit 10 to 20 times more particulate matter per horsepower-hour than the typical Class 8 tractor engine. Particulate matter and its main component, black carbon, is classified as a short-lived climate super pollutant, second only to CO₂ in its contribution to global warming, and is a major contributor to negative health outcomes in marginalized communities. Mitigating these emissions has marketable benefits that can increase market share and profit margins, while helping meet your environmental and social goals.

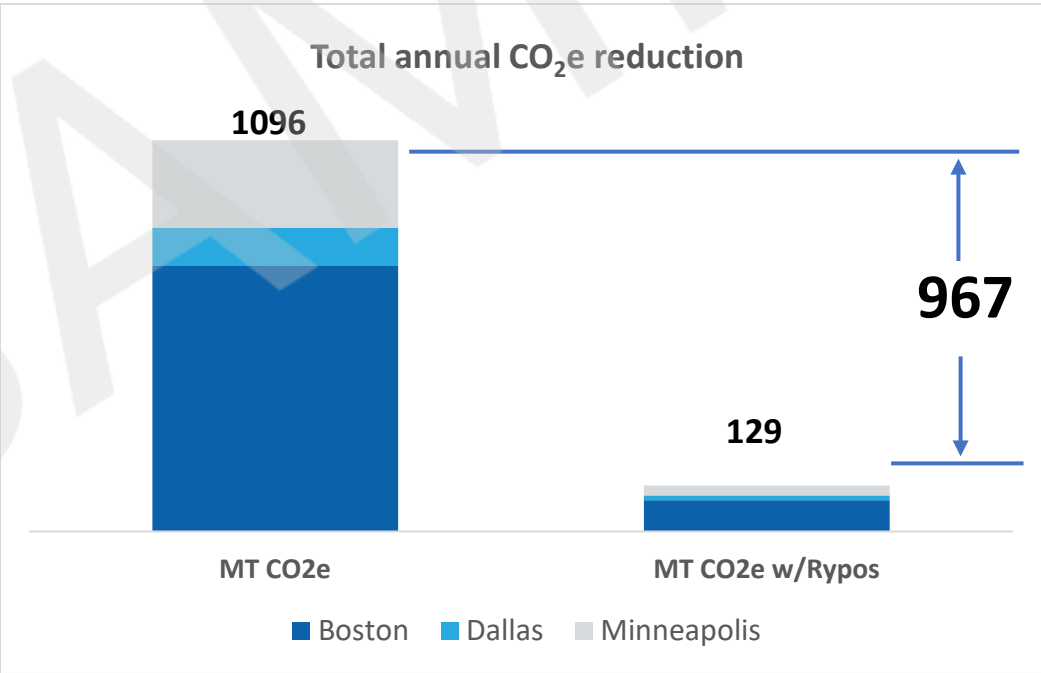
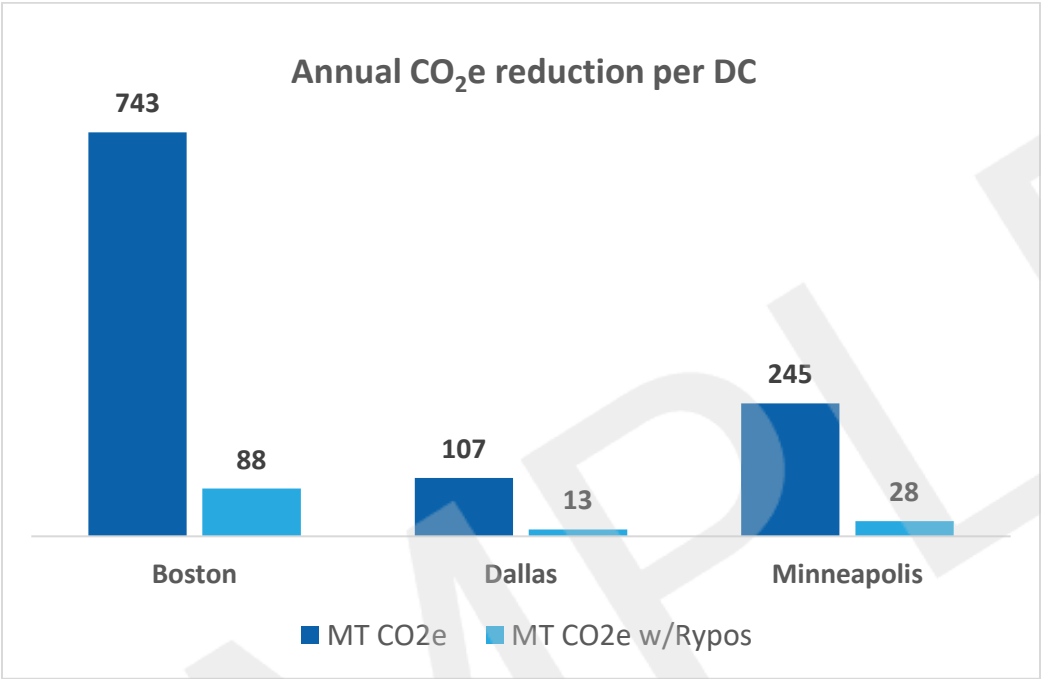
Fleetco Fleet

Fleetco presented Rypos with a fleet of **98** TRUs across **3** distribution centers. These units included model year **2013, 2018 and 2020** and included a mix of Carrier and Thermo King units. There were **0** units excluded due to age or reefer configuration.



Fleetco Emissions

Particulate matter emissions from all TRUs are currently estimated at **600,400 grams/year** based on engine OEM published data and Fleetco’s estimate annual runtime. Installation of Rypos ULETRU diesel particulate filters can reduce these emissions to **62,440 grams/year**. Converting these emissions to CO₂e and adding the estimated CO₂e emissions from total hydrocarbon emissions and carbon monoxide, it is estimated that Fleetco could reduce CO₂e by close to **1,000 metric tons annually**.



Summary

Equipping all TRUs in the Fleetco fleet with Rypos DPFs will reduce CO₂e emissions by 967 metric tons annually. These reductions will continue until the reefer is placed permanently out of service which could be 10 to 20 years down the road, whether in Fleetco's fleet or another company's fleet. Over the life of the equipment, Rypos diesel particulate filters could prevent over **10,000 metric tons of CO₂e** emissions for this fleet of 98 transport refrigeration units.

Fleetco's customers want to do business with environmentally responsible companies and Fleetco's employees like to know that their employer is doing good for the environment. By reducing local pollution, Fleetco is improving the lives of people in their communities and taking an important step to mitigating the worst outcomes of the climate crisis. Reducing SLCP emissions is a critical parallel path to decarbonization and Rypos ULETRU diesel particulate filters are a proven technology requiring no operator intervention beyond basic maintenance for the life of the equipment.

Transport Refrigeration Fleet Data provided by Fleetco

Trailer Number	VIN	Location	Equipment type	Make	Model	Model/Engine year	Est Annual Run Hours	DPF installed?
000001	1GRAA962XDB000001	Boston	Refrigerated Trailer	Carrier	X2	2013	1500	No
000002	1GRAA962XDB000002	Boston	Refrigerated Trailer	Carrier	X2	2013	1500	No
000003	1GRAA962XDB000003	Boston	Refrigerated Trailer	Carrier	X2	2013	1500	No
000004	1GRAA962XDB000004	Boston	Refrigerated Trailer	Carrier	X2	2013	1500	No
000005	1GRAA962XDB000005	Minneapolis	Refrigerated Trailer	Carrier	X2	2013	1500	No
000006	1GRAA962XDB000006	Minneapolis	Refrigerated Trailer	Carrier	X2	2013	1500	No
000007	1GRAA962XDB000007	Dallas	Refrigerated Trailer	Carrier	X2	2013	1500	No
000008	1GRAA962XDB000008	Dallas	Refrigerated Trailer	Carrier	X2	2013	1500	No
000009	1GRAA962XDB000009	Dallas	Refrigerated Trailer	Carrier	X2	2013	1500	No
000010	1GRAA962XDB000010	Dallas	Refrigerated Trailer	Carrier	X2	2013	1500	No
000011	1GRAA962XDB000011	Dallas	Refrigerated Trailer	Carrier	X2	2013	1500	No
000012	1GRAA962XDB000012	Dallas	Refrigerated Trailer	Carrier	X2	2013	1500	No
000013	1GRAA962XDB000013	Dallas	Refrigerated Trailer	Carrier	X2	2013	1500	No
000014	1GRAA962XDB000014	Dallas	Refrigerated Trailer	Carrier	X2	2013	1500	No
000015	1GRAA962XDB000015	Dallas	Refrigerated Trailer	Carrier	X2	2013	1500	No
000016	1GRAA962XDB000016	Dallas	Refrigerated Trailer	Carrier	X2	2013	1500	No
000017	1GRAA962XDB000017	Dallas	Refrigerated Trailer	Carrier	X2	2013	1500	No
000018	1GRAA962XDB000018	Dallas	Refrigerated Trailer	Carrier	X2	2013	1500	No
000019	1GRAA962XDB000019	Dallas	Refrigerated Trailer	Carrier	X2	2013	1500	No
000020	1GRAA962XDB000020	Dallas	Refrigerated Trailer	Carrier	X2	2013	1500	No
000021	1GRAA062XKB000001	Boston	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000022	1GRAA062XKB000002	Boston	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000023	1GRAA062XKB000003	Boston	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000024	1GRAA062XKB000004	Boston	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000025	1GRAA062XKB000005	Boston	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000026	1GRAA062XKB000006	Boston	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000027	1GRAA062XKB000007	Boston	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000028	1GRAA062XKB000008	Boston	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000029	1GRAA062XKB000009	Boston	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000030	1GRAA062XKB000010	Boston	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000031	1GRAA062XKB000011	Minneapolis	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000032	1GRAA062XKB000012	Minneapolis	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000033	1GRAA062XKB000013	Minneapolis	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000034	1GRAA062XKB000014	Minneapolis	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000035	1GRAA062XKB000015	Minneapolis	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000036	1GRAA062XKB000016	Minneapolis	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000037	1GRAA062XKB000017	Minneapolis	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000038	1GRAA062XKB000018	Minneapolis	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000039	1GRAA062XKB000019	Minneapolis	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000040	1GRAA062XKB000020	Minneapolis	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000041	1GRAA062XKB000021	Minneapolis	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000042	1GRAA062XKB000022	Minneapolis	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000043	1GRAA062XKB000023	Minneapolis	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000044	1GRAA062XKB000024	Minneapolis	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000045	1GRAA062XKB000025	Minneapolis	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000046	1GRAA062XKB000026	Minneapolis	Refrigerated Trailer	Thermo King	C-600	2018	2000	No
000047	1GRAA062XKB000027	Minneapolis	Refrigerated Trailer	Thermo King	C-600	2018	2000	No

Fleetco Q2 2023 Emissions Report

Rypos equipped TRU Fleet Statistics

	2013	2018	2020	Total
Boston	4	10	48	62
Dallas	14			14
Minneapolis	2	20		22
Grand Total	20	30	48	98

Emissions reduction from installed ULETRUs for the second quarter 2023

	Before	After	Savings
PM (kg)	145	15	130
THC (kg)	2,894	590	2,303
CO (kg)	1,871	425	1,446
CO₂e (MT)	265	31	234

Cumulative emissions reduction 2023

	2023 Q1	2023 Q2	2023 Q3	2024 Q4	2023 Total
PM (kg)	0	130			130
THC (kg)	0	2,303			2,303
CO (kg)	0	1,446			1,446
CO₂e (MT)	0	234			234