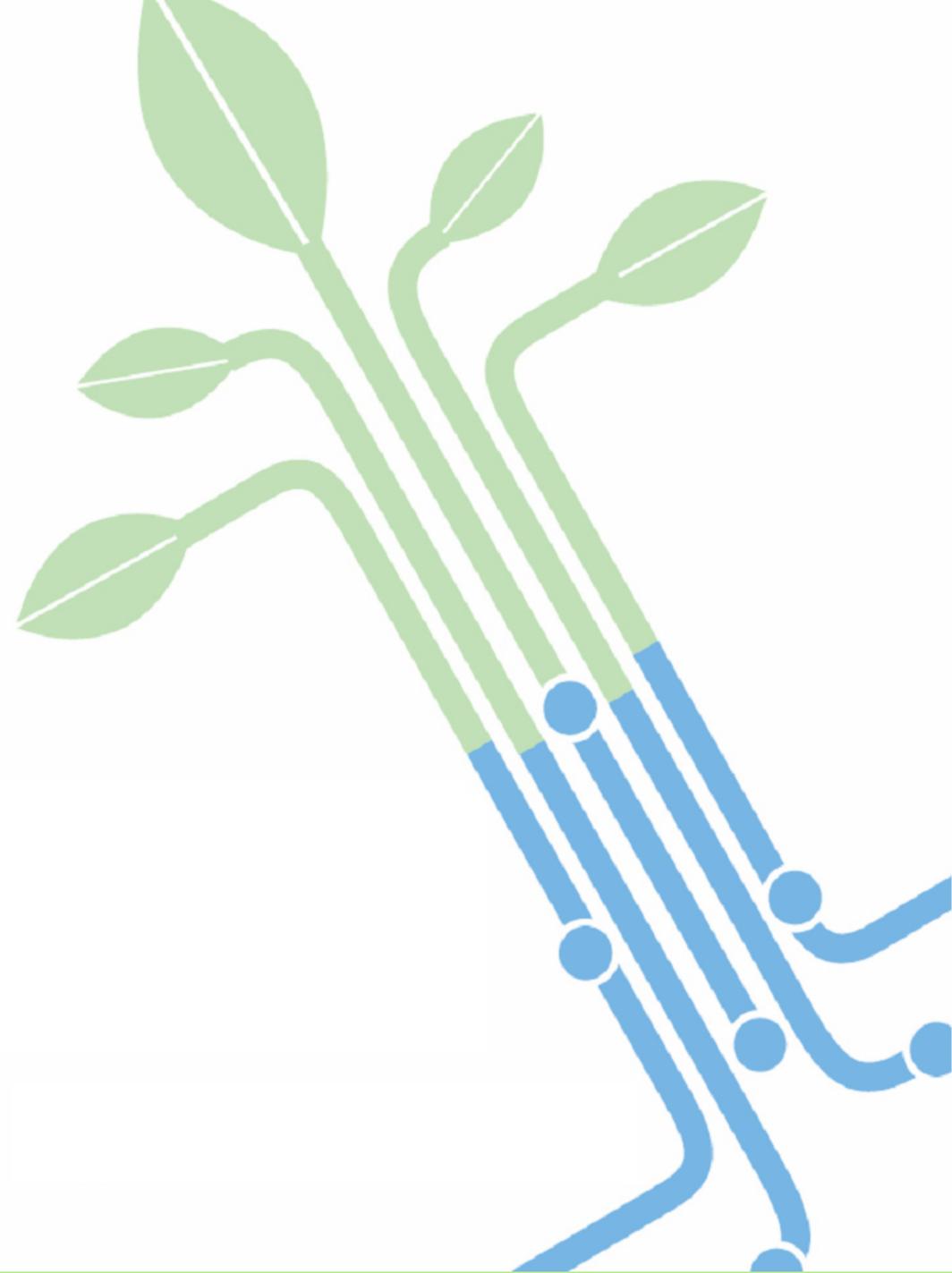


# Saving Traction Power at MTA

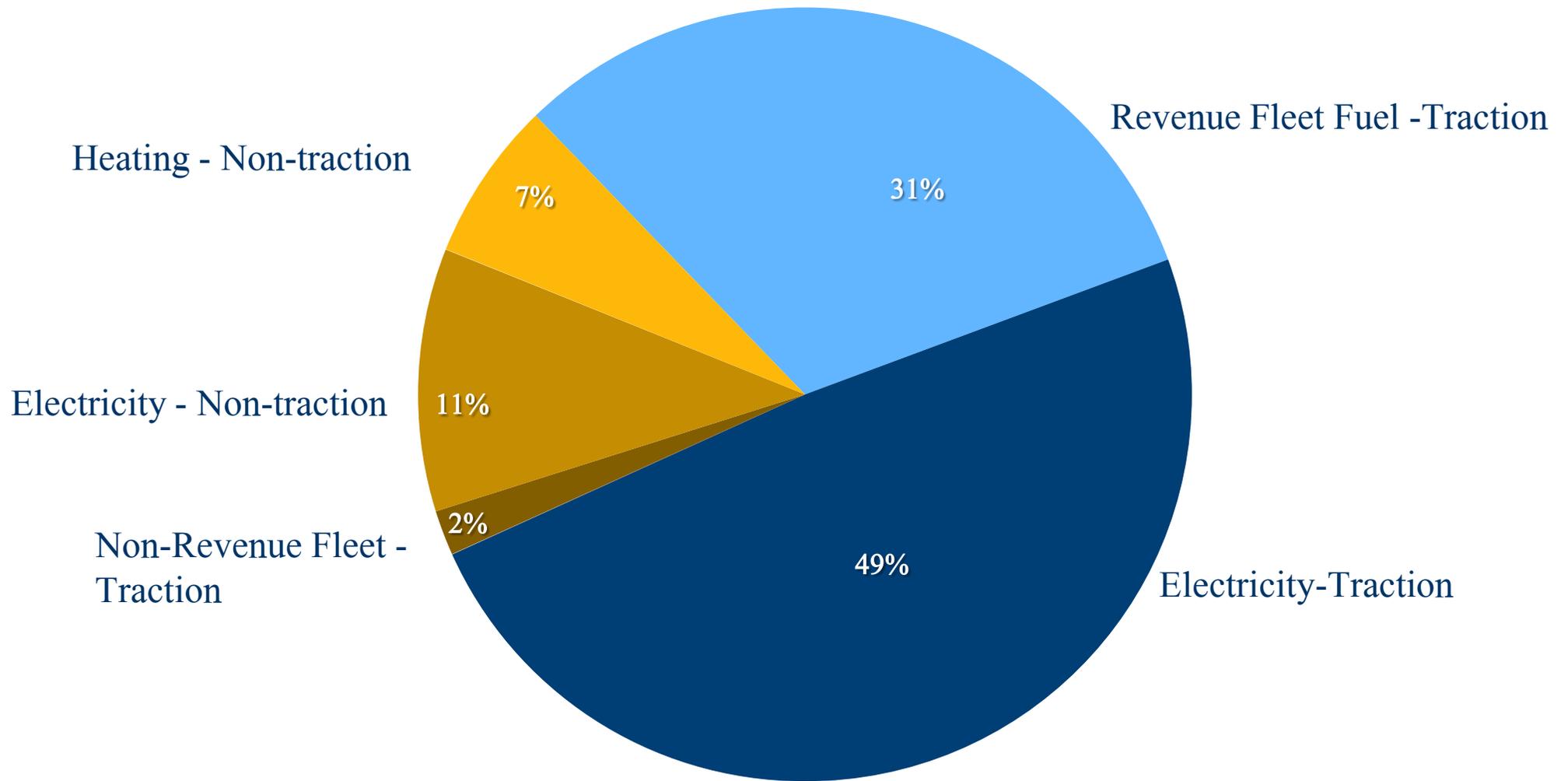
APTA Sustainability  
Workshop

August 2, 2011

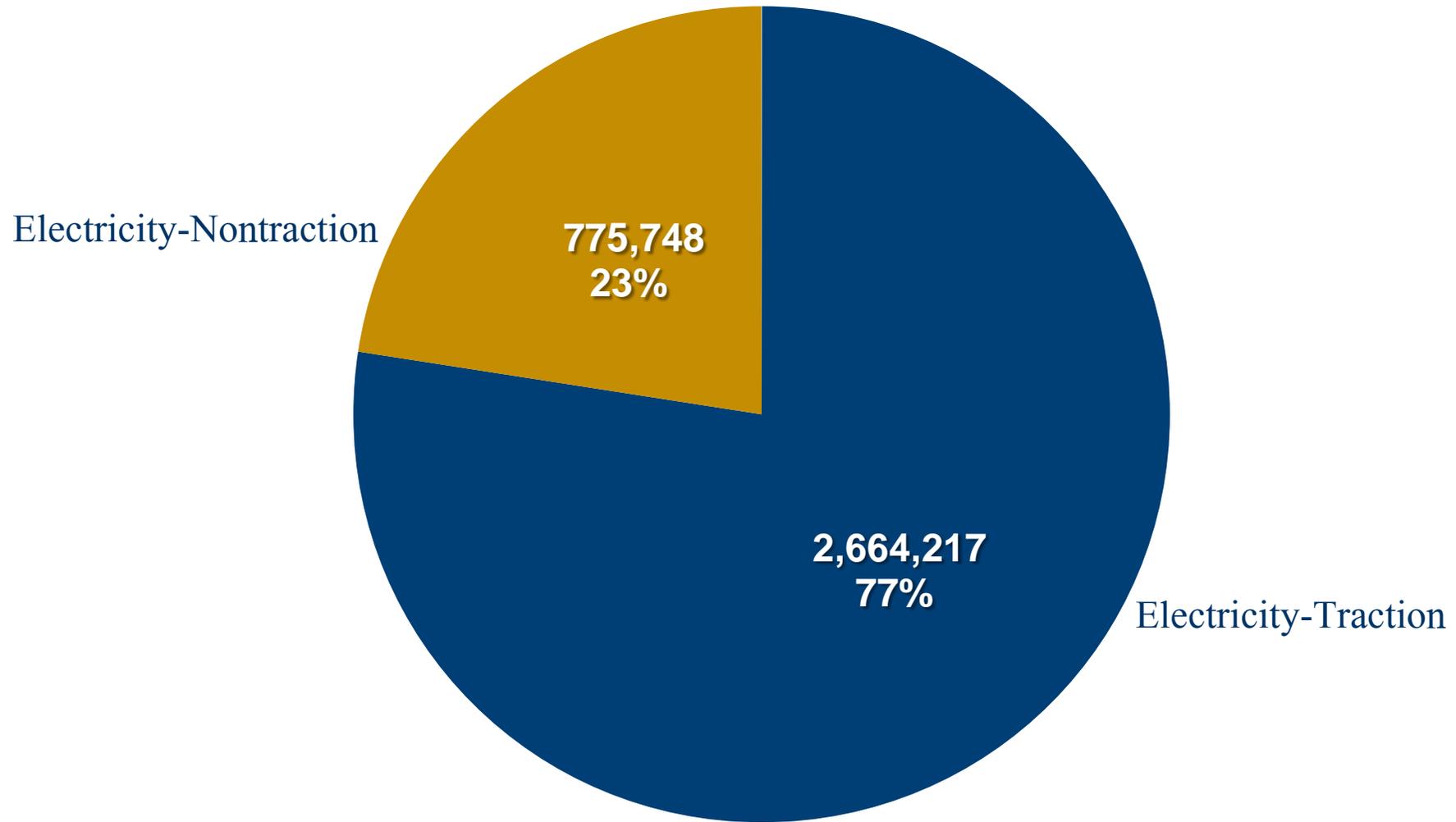
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[www.mta.info/sustainability](http://www.mta.info/sustainability)



# GHG Emissions



# Electricity Use (MWH)



# Internal Application Process

MTA Agency	Project	Description	Estimated Energy Savings Per Year (MWH)	Cost (in millions \$)	Federal Request	Local Match	Lifetime (years)	Total Energy Savings	Cost / Lifetime Energy Savings	Savings in CO2 (Metric Tons)	Cost / CO2 Savings	Buy America (Y/N)	In the Capital Program (Y/N)	Source of Local Match	
1	NYCT DOS	3rd Rail and Yard Remote Switch Heaters	Install remote control 3rd rail and switch heaters, allowing heaters to be turned on and off as needed rather than seasonally.	27,500	17.20			20	550,000	31	202,975	85			
2	NYCT DOB and MTA Bus	Rapid Roll-Up Doors	Install a total of 124 rapid roll-up doors in 11 Bus Depots, resulting in fuel saving by minimizing heat loss and electrical savings with high efficiency controls.	37,387	8.70	7.83	0.87	15	560,802	16	206,962	42			
3	NYCT DOS	Subway Car Light-Weighting & Energy Efficiency	Replacement of 470 air brake system compressors on R44 and R46 subway fleets, reducing car weight and increasing energy efficiency through the use of AC compressor motors.	2,043	20.70			30	61,290	338	22,619	915			
4	LIRR	Aluminum 3rd Rail	Integrate the use of aluminum 3rd into the LIRR 3rd rail replacement schedule, lowering electrical resistance and loss and correcting voltage imbalances. Install 12.5 miles of aluminum 3rd rail in 2009/10.	625	6.60	5.94	0.66	50	31,250	211	11,533	572			
5	MNR	Harlem & Hudson Line Power Improvements	Installation of 5 new substations along the upper Harlem Line to correct low voltage and power loss conditions.	3,155	25.00	22.50	2.50	50	157,750	158	58,217	429			
6	NYCT DOB	Hydrogen Bus Fueling Station	Install a hydrogen generation/compression/storage system to fuel two Hydrogen Fuel Cell buses (provided by others) at a Regional Bus location TBD.	177	3.50	3.15	0.35	12			2,124	1,648			
7	MNR	Bridge 23 Substation	Installation of a new substation in Mount Vernon that will be capable of capturing regenerative braking energy from the catenary system of the New Haven Line and transmit it back into the electrical grid.	1,639	8.00	7.20	0.80	50	81,950	98	30,243	265			

# The Problem: Frozen Third Rails



- Ice on third rail prevents contact with the shoe
- Results in stalled trains & service disruptions



MONTE CARLO

Please beware of gaps

# The Solution: Remote 3<sup>rd</sup> Rail Heaters

- Remotely monitor and operate heaters based on actual weather conditions
- Minimizes electricity use and eliminates wasted energy



# TIGGER Funding

	PROPOSAL	AWARD
<b>Federal \$</b>	\$3.17M	\$2M
<b>Local Match</b>	\$9.83M	\$6.2M
<b>Total Project Cost</b>	\$13M	\$8.2M
<b>Control Points</b>	543	342
<b>Estimated Energy Savings (Annual)</b>	36,000 MWh	22,600 MWh
<b>Estimated Dollar Savings (Annual)</b>	\$2.2M	\$1.4M

# Thank you!

