

## Each Trip on the MTA Keeps More Than 10 Pounds of Carbon Out of the Air

### Agency's Energy Efficiency Greatly Helped by NYPA and NYSERDA

MTA Chairman Joseph J. Lhota today marked Earth Day by announcing that every trip made on an MTA train, subway or bus prevents an average of more than 10 pounds of carbon from entering the atmosphere. That's the same amount of carbon released by burning 3½ pounds of coal, or the amount removed from the air by nine trees in a month. The MTA's efficiency is made possible with significant support from the New York Power Authority (NYPA) and New York State Energy Research & Development Authority (NYSERDA).

Two-thirds of all New Yorkers live and work in the region served by the MTA, and as a result, New York State has the lowest per person energy consumption and greenhouse gas emissions in the nation. This distinction results from pedestrian-friendly land-use patterns that are made possible by the MTA's safe and reliable public transportation. It has related economic advantages, like a low impact on New Yorkers from rising gas prices.

And as the MTA itself becomes more energy efficient, it helps the whole region become even greener. Thanks to a series of energy efficient technologies put in place with help from NYPA and NYSERDA, the MTA is doing just that.

- The largest energy efficiency project that the MTA has ever undertaken with NYPA is underway in Grand Central Terminal. Equipment that heats, cools and ventilates Grand Central is being upgraded to save \$3 million a year and to reduce Metro-North Railroad's annual carbon emissions by 10,000 tons.
- MTA subway work sites are now being lit by advanced technology light-emitting diodes (LEDs) portable light bank developed by a Long Island-based company, Autronic Plastics. The LEDs use 85 watts of power, and replace incandescent bulbs previously used to light track work sites that use 375 watts. With 4,000 LED units in use, the MTA will reduce its electricity consumption by at least 1.04 megawatts per year, saving at least \$500,000 annually. Development of the technology was funded by an award of \$150,000 from NYSERDA.
- In partnership with NYPA, MTA Bridges and Tunnels is replacing the mercury vapor necklace lights on four iconic suspension bridges (the Verrazano-Narrows Bridge, Robert F. Kennedy Bridge, the Throgs Neck Bridge and the Bronx-Whitestone Bridge) with high efficiency LEDs, reducing electricity costs by 73%. And the 832 lights at the Brooklyn-Battery Tunnel were replaced with high-efficiency lighting, saving 500,000 kilowatts a year or \$55,000 annually.
- The LIRR is nearing completion on a \$25 million train car wash facility in Babylon that will filter, recondition and reuse more than 70% of its wash water. Supplemental solar power energy panels will save an estimated \$6,700 a year on utility costs.

### MTA Trains and Buses Mean Less Carbon Dioxide

The MTA today released a four-page report that detailed how the MTA's public transportation operations help New Yorkers avoid releasing carbon and other greenhouse gases into the atmosphere. While the MTA emits just over 2 million metric tons of carbon dioxide equivalents annually, its operations allow the region to avoid emitting close to 20 million tons of greenhouse gases thanks to three factors.

- **Mode Shift:** When people choose to ride an energy efficient train or bus instead of driving a single-occupancy car, they are preventing tailpipe emissions from entering the atmosphere.
- **Congestion Relief:** Because many New Yorkers choose to ride trains and buses run by the MTA, those drivers who remain have an easier time navigating the region's roadways, meaning less traffic and fewer idling tailpipes.
- **Land-Use:** High capacity transportation promotes densely built-up cities and town centers. These places use less energy to heat and cool and encourage occupants to make trips by walking and bicycling, which further supports carbon reduction.

Using a formula created by the American Public Transportation Association and figures independently audited and verified by The Climate Registry, the MTA calculated its carbon savings based on the factors above, and determined that the average per-trip carbon savings afforded the New York region is 10.39 pounds. This varies by length of trip and mode of transportation used.

"The MTA may very well be the most powerful engine of sustainable economic growth in our entire nation," said MTA Chairman Joseph J. Lhota. "We move more than eight and a half million people by transit every single day, which translates into about 700,000 cars kept out of our city's central business district every day. But just because we make New York the most sustainable state in the U.S., that doesn't mean we can ignore our own environmental impact, which is why I am so delighted to be receiving such significant help from our partners at NYPA and NYSERDA."

"I applaud the NY MTA for being a frontrunner among public transit agencies in comprehensively measuring its own carbon emissions and the carbon emissions it saves the community it serves," said APTA President and CEO Michael Melaniphy. "This report clearly shows the critical role that public transportation plays in protecting our environment and making our country more energy efficient."

### Greening an Icon

Deep below Grand Central Terminal's gleaming marble Concourse and high above its constellation ceiling is a myriad of pumps, chillers, fans, compressors, cooling towers, meters and miles of high-pressure steam pipes, many of them a century old. Many of these systems are being replaced throughout the 48-acre Terminal that extends seven stories above ground and 150 feet below sea level.

Five steam-absorption chillers, now about two decades old, are being replaced by four new electrical centrifugal chillers, which have higher capacity and greater efficiency, thereby reducing the amount of steam that has to be purchased. Associated hardware – pumps, cooling towers, motors, etc. – also will be upgraded in various locations from the subbasement to the roof. The effort to upgrade this equipment, being managed, designed and implemented by NYPA and MTA Metro-North Railroad, will cut the Terminal's energy consumption by 30%, saving an estimated \$3 million annually.

and avoiding the release of 10,000 tons of carbon per year.

The upfront costs of the new, energy-efficient equipment will be borne by NYPA and be repaid annually over about 11 years by Metro-North with the money it saves as the result of a reduction in energy use. Installation began this month and will be completed by the end of 2013.

"This upgrade is the latest in a series of innovative energy efficiency projects that the Power Authority and MTA have partnered on in an effort to lower utility bills and operating costs, bringing New York closer to a clean energy economy," said Gil C. Quiniones, president and chief executive officer, NYPA. "Initiatives like the one we have spearheaded at Grand Central underscore the emphasis that Governor Cuomo is giving to energy efficiency improvements at facilities around the state."

### **Track Work Lights for a New Century**

Every weekend and every night, especially during FASTRACK efforts, New York City Transit track workers head into the subway system to repair, replace and rehabilitate sections of track in the tunnels under New York City. To do this in dark tunnels, they need lots of light. Since the beginning of subway maintenance in the early part of the last century, that light has been provided by portable banks of relatively dim incandescent light bulbs that gobble up lots of power. The bulbs are fragile and prone to failure and breakage in this demanding work environment.

Now, thanks to innovation by a Long Island company and made possible with funding from NYSERDA, those lights are being replaced by high-efficiency light emitting diodes. Autronic Plastics, Inc., of Westbury, L.I., developed lamp banks that consist of two arrays of white VDC LEDs mounted on an aluminum alloy heat sink. The LEDs are hard-wired to an integrated power supply unit, which performs a DC to DC conversion, taking a 600 VDC input from connectors attached to the third rail of the subway system and converting this to power to illuminate the LEDs.

Each LED portable lamp bank provides energy savings of up to 10% per kilowatt hour, and consumes just 85 watts compared with the 375 watts consumed by the old incandescent bulbs.

"With a simple switch from incandescent to LED lights, the MTA is taking a giant step toward energy savings, safety and reliability," said Francis J. Murray Jr., President and CEO of NYSERDA. "NYSERDA is pleased to join the MTA and NYPA in helping to bring greater energy efficiency to the New York City Subway and brighter working conditions to its maintenance staff."

By switching over to 4,000 LED lamp banks, the MTA will reduce its electricity consumption by an estimated 1.04 megawatts per year or more. This could result in saving at least \$500,000 a year in electricity costs.

"Aside from their significant reduction in energy consumption, these new LED banks reduce heat transfer at the work site and since they are much more durable and longer lasting, the equipment is more maintenance free than ever," said Thomas F. Prendergast, President of MTA New York City Transit. "This is a great example of how the new energy-efficient technologies can make our work place, transit system and City better places."

### **Bridges and Tunnels**

In April 2008, MTA Bridges and Tunnels began the process of replacing old 100-watt mercury vapor lights on its four iconic suspension bridges with high efficiency, LED fixtures. The new energy efficient lights, which reduce electric costs by 73%, are now operating at the Verrazano-Narrows Bridge, Robert F. Kennedy Bridge, and just in time for Earth Day 2012, at the Throgs Neck Bridge, where crews have just finished replacing 142 necklace lights. The old lights remain only at the Bronx-Whitestone Bridge, and those too will be changed beginning in 2014.

In addition to the necklace light project, MTA Bridges and Tunnels has replaced 832 lighting fixtures at the Brooklyn-Battery Tunnel, including 202 occupancy sensors, with high-efficiency lighting. This initiative is estimated to save 500,000 kilowatt hours annually, or about \$55,000 a year. The new sensors were placed throughout the tunnel's administration and ventilation buildings, which allows lights to operate at 50% output until motion is detected and illumination is raised to 100%. A similar project is now underway at the Queens Midtown Tunnel.

Both of these projects were done in partnership with NYPA's high efficiency lighting program (HELP).

### **LIRR Car Wash**

This spring, the LIRR will open a \$25 million facility in Babylon that will clean the exteriors of 180 train cars every day. The facility will wash trains using a mixture of fresh water and recycled water. The facility will filter, recondition and reuse more than 70% of its wash water. With the recycle system, the LIRR can potentially save in the tens of thousands of gallons of water per day.

Supplemental solar power energy panels will help operate the electrical lighting and heating for the Trainwash Equipment Building, saving the LIRR an estimated \$6,700 a year on utility costs.

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