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## ROADMAP TO THE FUTURE OF ELECTRIC TAXIS

In his January 2013 State of the City Address, Mayor Michael R. Bloomberg called for a one-third electric taxi fleet by 2020. To achieve that goal, he commissioned the Long-Term Electric Taxi Task Force to bring together many of the stakeholders who could provide insight into what it would take to reach this pinnacle. The task force was comprised of Con Edison, Empire Clean Cities, the Mayor's Office of Long-Term Planning and Sustainability (OLTPS), the Metropolitan Taxicab Board of Trade, Natural Resource Defense Council, New York Power Authority, New York State Energy Research and Development Authority, New York Taxi Workers Alliance, NYC Department of City Planning, NYC Department of Transportation, the NYC Taxi and Limousine Commission (TLC), the Port Authority of New York and New Jersey, and the Real Estate Board of New York.

A research team culled from staff at the TLC and the Mayor's Office of Long-Term Planning and Sustainability (OLTPS) supported the task force's work and assembled a culminating report, available on the TLC's web site at [www.nyc.gov/taxi](http://www.nyc.gov/taxi).

"The benefits of electric taxicabs – which would each remove the equivalent emissions of eight New Yorkers' personal vehicles – are plain to see," said TLC Commissioner and Chair David Yassky. "The goal of a one-third all-electric taxicab fleet is both reachable and practical, and this insightful report will help us light the way."

"Electrifying New York City's taxi fleet is achievable through collaboration between industry, the utility and government, and the development of new charging infrastructure," said Sergej Mahnovski, New York City Director of Sustainability. "By examining the city's built environment, the taxi industry and electric vehicle trends, this report is a roadmap for how New York and other cities can make their taxis cleaner and greener."

### Highlights of the report include:

- The task force researched infrastructure, vehicle, and taxi operational patterns and found:
  - **Electrifying One Third of the Taxi Fleet Would Have a Significant Positive Environmental Impact.** Replacing one third of the taxi fleet with electric vehicles (EVs) would reduce overall CO<sub>2</sub>e emissions from the taxi fleet by 18%. It would take the replacement of about 35,000 private vehicles with EVs to realize this level of reduction in CO<sub>2</sub>e emissions. Electric vehicles also offer promising opportunities to improve the resiliency of the fleet, provide fuel price predictability, and contribute to energy security goals.

- **Electric vehicle technology has improved significantly in recent years and will likely continue to improve in the future.** Assuming vehicle and battery prices decline as rapidly as is projected by some industry experts and that the federal EV tax credit remains in place, by 2017 the total cost of ownership (TCO) of an EV taxi could be below the TCO for a comparable non-EV taxi.
- **A Large Quick Charger Network Would Be Necessary to Support a One-Third EV Taxi Fleet.** Modeling suggests that a network of 350 50kW quick chargers would be needed to ensure that drivers in a one-third electric taxi fleet would have access to chargers when they need them. With an electric vehicle with a 35kWh battery, the average electric taxi driver would spend a total of about forty minutes per shift charging.
- **Constructing and Operating this Quick Charger Network Would Be Expensive, but It Has Significant Revenue Potential.** Potential revenue sources include charging fees for EV taxi drivers and other EV drivers, advertising, and profits from vending. Clustering chargers in groups would provide an opportunity to provide amenities, such as bathrooms and restaurants, for drivers to use while charging.
- **NYC has the Grid Capacity to Accommodate a 350-Quick Charger Network.** Based on taxi service areas, fleet garage locations, and driver residence locations, most chargers would need to be located in Manhattan and Western Queens. They could be located inside parking garages, curbside, or in surface parking lots.
- The task force makes several recommendations to the City. These recommendations include:
  - Issuing a request for information (RFI) to vehicle manufacturers to learn more about what types of vehicles they have in the pipeline that may be suitable as EV taxis.
  - Exploring additional vehicle and infrastructure pilot programs that would provide more information on what technologies would work well in the taxi industry.
  - Exploring the feasibility of using EVs in other industries, such as the for-hire vehicle industry or Boro Taxi fleet, in which a greener fleet would have a significant air quality and carbon impact.
  - Considering modifying TLC rules to provide a regulatory setting that makes electric vehicles more attractive.
  - Pursuing a partnership with Con Edison to undertake the detailed analysis necessary to determine feasibility of curbside quick charging.
  - Seeking funding sources to begin to build out a charger network that could serve taxis, private users, and other fleets. It could pursue policy tools, such as tax abatement, for property owners that make quick chargers available.