NYMTC Municipal Action Forum April 30, 2019
Electric Vehicles: Under the Hood and In the Marketplace
At the Putnam County Emergency Services Center, Carmel, NY,

Executive Summary

On April 30, 2019, NYMTC hosted a Municipal Action Forum at the Putnam County Emergency Services Center in Carmel. This briefing for municipal and school board leaders was designed to provide the latest intelligence for municipalities on the technology and economics of electric vehicles that most matter in their local operations. Participants were able to see an electric school bus directly and meet with a representative of Proterra, the largest US based manufacturer of electric transit buses.

After an energetic welcome by County Executive MaryEllen Odell, expert briefings were provided by:

- Seth Leitman, MPA, Program Manager, Drive Electric Hudson Valley, “Electric Vehicles: Under the Hood and In the Marketplace”
- John Markowitz, PE, CEM, Manager, EVolveNY, NY Power Authority, “New York’s Commitment to Charging Infrastructure “
- Judah Aber, MA, Principal, EB Consulting, “Electric Transit Buses: How to Procure and Finance.”
- Tevin C.S. Grant, Esq., Executive Director, Electric School Bus Campaign and Evolv-Electric. “Electric School Buses: Capturing the Opportunity”
- Melissa Everett, Ph.D., Executive Director, Sustainable Hudson Valley, “Educating your Community and Stakeholders About Electric Vehicles.”

Forum topics included fleet cars for general and specialized uses, special applications such as law enforcement, light trucks, transit and school buses, and charging infrastructure rollouts taking place now. Presentations also covered economic trends; financing strategies and State incentives, and strategies for community engagement.
“ELECTRIC VEHICLES: UNDER THE HOOD AND IN THE MARKETPLACE”
BY SETH LEITMAN, MS, PROGRAM MANAGER, DRIVE ELECTRIC HUDSON VALLEY,
A PROGRAM OF SUSTAINABLE HUDSON VALLEY

PRESENTATION SUMMARY: Seth opened the program remarking on how far the industry had come since working with NYMTC in 2000 to lease 100 electric Th!nk vehicles to commuters. Today, with the EV market growing and battery prices falling sharply, Bloomberg New Energy Finance predicts that EV will be cost competitive with conventional cars to buy within 6 years while costing less to operate. Already, he said, certain electric vehicles make good sense for muni fleets in terms of range, price and operating costs: The VW eGolf, Chevy Bolt and Volt (discontinued but available used), Ford Focus EV, Tesla Model 3 (range and speed advantage for police), Kia Soul and Optima, Prius Prime, and BMW i3. He identified trends shaping the landscape for EV procurement:

• fast tech progress;
• more and more automakers involved;
• new types of options such as the used EV market; and
• breakthroughs “always on the horizon” leading to real dilemmas about investing now vs later.

Seth went on to discuss light duty trucks, vans, special purpose cars like police vehicles and more. He noted that commitments of large users like New York City and FedEx both validate and advance the market. He reviewed incentives from the NYS Department of Environmental Conservation, NYMTC, NYPA and NYSERDA. He reported on several strategies municipalities are using to build out charging infrastructure and electrify fleets. For charging, these include designing and installing networks of chargers directly, or partnering with service providers at scale. Fleets can be electrified most cost-effectively with group purchasing, and local dealerships may be ripe to get involved.

SETH LEITMAN, M.S. (“The Green Living Guy”) is a leading online media presence for green living and electric transportation. PR Newswire ranks his website #2 worldwide for Green Living. At the New York State Energy Research and Development Authority (NYSERDA), he was the Project Manager for the Clean Fuel Bus Program that provided over $100 million in funding throughout the state. In 2000, Seth joined the New York Power Authority (NYPA) where he created the NYPA/TH!NK Clean Commute Program which leased 100 electric vehicles and became one of the largest public / private partnerships of its kind. He led the construction and implementation of 100 public charging station points in five NY counties. CONTACT SETH:
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PRESENTATION SUMMARY: NEW YORK’S COMMITMENT TO CHARGING INFRASTRUCTURE  By JOHN MARKOWITZ, PE, MANAGER, ELECTRIC TRANSPORTATION, PROGRAM, NY POWER AUTHORITY

John set a powerful context by noting that transportation is the largest segment of New York’s greenhouse gas emissions at 41%, so rapid electrification is needed to keep the state on track to cut emissions 40% by 2030. The ChargeNY program was rolled out in 2018 to establish 10,000 public charging stations by 2021 and make New York the first state where ownership of gas-powered cars is obsolete. The program is rapidly establishing clean fuel corridors along the major state highways where drivers can fast charge at their convenience. The NY Power Authority (NYPA) is a major part of this effort, with a 25 year history working with public fleets and a track record of installing 100 Level 2 EVSE in public locations like airports, train stations and parking lots. Charging station projects are currently underway in Yonkers, Buffalo, Rochester and White Plains, as well as along the Thruway and in a number of significant bus pilots. Building on this, the new Evolve NY program is making a $250M investment through 2025 to address key barriers and “make EVs the easy choice.” The program is creating a backbone of fast charging infrastructure around the state, working to optimize state regulations for all parties, attracting private investors and thereby “de-risking” the market.

JOHN MARKOWITZ is Lead Energy Services Product Development Engineer in the Clean Energy Group at New York Power Authority. He manages NYPA’s electric transportation program, as well as projects in the areas of renewable energy and energy storage. He participated in the field testing of the first plug-in hybrid vehicles from the major automakers. He is also a member of the Electric Power Research Institute’s Infrastructure Working Committee. This group of representatives of the automakers and electric utilities defines safety standards for electric vehicle charging equipment. Before joining NYPA, John held engineering and marketing positions in the fields of transportation and energy efficiency. He is a member of the Society of Automotive Engineers and the Association of Energy Engineers. He holds the following degrees: Bachelor of Electrical Engineering from Manhattan College, and Master of Business Administration from Pace University. He is a New York State Licensed Professional Engineer and a Certified Energy Manager.

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ELECTRIC TRANSIT BUS OPPORTUNITIES
BY JUDAH ABER, M.S., M.B.A., PRINCIPAL, EB START CONSULTING

PRESENTATION SUMMARY: Judah provided an overview of electric buses in use for urban and rural transit systems. He began with “why” – the case for the electric bus now:

- cleaner air with reduced diesel emissions benefitting public health and work force productivity;
- advancing New York’s sustainability goals of 50% renewable by 2030 and promoting energy security;
- less noisy, more comfortable rides; and
- lower overall life-cycle costs

He reviewed the landscape, noting that less than 1% of buses in service are electric but there is 29% year to year growth. Factories are expanding with demand, and there is a more than one year backlog on orders. 13% of transit agencies either have an electric bus or have ordered one, accounting for over 22,000 electric buses. The major manufacturers are Proterra (US), BYD, New Flyer, Green Power, Complete Coach Works, Motiv(US), Phoenix Motorcars, Zenith, Workhorse, and Chanje.

Judah then provided detailed guidance on planning for the switch to electric buses, including range, charging options (on-route and depot), purchase vs lease factors, maintenance and training considerations. He noted that additional electric infrastructure may be needed at a bus depot, so utilities should be involved in planning.

JUDAH ABER, M.S., M.B.A. is Founder and Principal at EB Start, a consultancy dedicated to electric transit bus education and adoption. EB Start provides analysis on the business case and lifecycle costs and benefits of electric buses, as well as up to date information on who is producing and using them. Judah has a B.S. in Mechanical Engineering an MBA in Finance and a Masters in Environmental Science. He worked for many years in financial and operations management for IBM in a variety of positions including as the CFO, COO and Controller of various worldwide cross-functional businesses. He is a seasoned business leader with experience in strategic planning, project management, business transformation and creative problem solving.

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ELECTRIC SCHOOL BUSES
BY TEVIN  C.S. GRANT, ESQ., PRINCIPAL, EVOLV-ELECTRIC

PRESENTATION SUMMARY: Tevin reported on the rapid evolution of electric school bus technology and procurement. He reviewed the status of major buses by manufacturer: Blue Bird, Collins, IC Bus, Greenpower, Lion, Starcraft Thomas and TransTech. He noted that up-front costs are rising now through the mid-2030’s, then will fall substantially, adding that battery technology advances are a major component of that trend. While up-front costs of electric school buses are greater than petroleum-powered models, this should be balanced against benefits such as:

- longer running life
- fuel savings
- lower maintenance costs and
- potential revenue generation by virtue of the bus’ energy storage capabilities.

Tevin challenged the audience to think about life cycle benefits and not only initial costs, and provided three key reasons why now is the time to act: capturing health and safety benefits, financial incentives including at least $52 Million in cost-share from the VW settlement, and the fact that history only remembers pioneers.

TEVIN C.S. GRANT, Esq, is Founder and Principal of Evolve-Electric Transportation, Inc., a consultancy devoted to electric school bus adoption. A graduate of the University of Virginia’s law school, Grant has built a career as an environmental attorney and educator. Beginning as a litigator in the Environmental Unit of the New York City Law Department, he has branched out to develop innovative environmental education programs as well. A lifelong car enthusiast and the father of a young daughter, he put the pieces together about electric school buses after attending a school function and seeing an ocean of idling diesel school buses with clouds of particulate matter coming out of their tail pipes. This has led Grant to devote his entire career to advocacy for the rapid adoption of electric buses through the Electric School Bus Campaign and his new consultancy, Evolve-Electric Transportation.

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COMMUNITY ENGAGEMENT STRATEGIES
BY MELISSA EVERETT, PH.D., SUSTAINABLE HUDSON VALLEY

PRESENTATION SUMMARY: Melissa wrapped up with emphasis on the need to engage communities to believe in and adopt electric vehicles, and outlined an approach to “acceleration through coordination.” She noted that car buying is far from a completely rational decision, and research shows that dozens of factors influence this decision – including customer experience at dealerships.

Sustainable Hudson Valley’s Drive Electric program combines three essential elements of EV readiness: education of drivers and the public, training and support for car dealerships, and rollout of visible charging infrastructure with quality information about its use. In a marketplace that is fast-growing but turbulent, Drive Electric has helped to create coherence by:

- giving dozens of workshops hosted by community influencers;
- distributing thousands of flyers to commuters and at events,
- training first-mover car dealerships throughout the region;
- spearheading “ride and drive” educational events during September’s National Drive Electric Week for the last four years; and
- working with NYSERDA and EV Connect to establish charging infrastructure at destinations like restaurants, campuses, and village centers;

creating a coordinated outreach strategy to support a new program, Destination Electric, led by the auto industry and northeastern states.

In its first nine months as a pilot, the program was responsible for helping 152 drivers to switch to EV. This field experience reinforces the initial theory that bringing electric vehicles into the mainstream requires not just attention to infrastructure, education and dealership preparation, but coordination among those efforts.

MELISSA EVERETT, Ph.D. is co-founder and Executive Director of Sustainable Hudson Valley, where she has worked extensively in clean technology market development. She received her Ph.D. in 2006 from Erasmus University in the Netherlands and has taught at RPI and SUNY Dutchess. She was one of the original 1,000 citizen speakers trained by The Climate Project. The author of three books and many articles, Melissa has given lectures and workshops on three continents. Her Making a Living While Making a Difference was honored with the Bronze medal for Best Book in Foreword Magazine’s annual rankings. She was named one of nine “People to Watch in 2012” by Hudson Valley Magazine.

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