

LONG ISLAND**LIPA eyes improving grid as electric vehicles grow**

LI leads the state in the adoption of plug-in electric vehicles and the total could grow to 40,000 annually by 2025.



Electric vehicles are hooked up to charging stations in the parking garage at the Huntington Long Island Rail Road station on Friday. Photo Credit: Danielle Silverman

By Mark Harrington

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Long Island is leading New York State in the adoption of plug-in electric vehicles, presenting an opportunity for LIPA to boost sales by more than \$2 billion over the next two decades while requiring some \$200 million in grid upgrades, a LIPA-financed study has found.

PSEG Long Island and the Long Island Power Authority already are proposing to spend \$20.5 million over the next four years to increase public, workplace and residential charging outlets and promote the market.

Longer-term grid improvements to accommodate a larger, Islandwide fleet of the cars would require an investment of \$20 million to \$30 million a year, or a total of \$190 million over a decade, the study by Gabel Associates found. In return, Long Island ratepayers would see \$422 million in net benefits, including reductions in electric costs, by wider adoption of the vehicles by 2035, the study found.

Over the past three years, Long Islanders have bought around a third of all electric vehicles sold statewide, compared with about a 22 percent share of cars overall that they purchase in the state, Gabel reported.

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From less than 100 electric vehicles sold in 2011, annual sales on Long Island topped 3,200 vehicles in 2017. In all, about 11,000 electric vehicles were on the road on Long Island by the end of 2017, more than any other region, according to the Gabel study.

Mark Warner, Gabel's vice president of advanced energy solutions, said Long Island could see a growth rate that puts 40,000 new electric vehicles on the road annually by 2025, or a total of 222,000 by that year's end. By 2035, the number could jump to 680,301, according to a scenario he presented to LIPA.

That's both a benefit to the utility and its customers and a potential pitfall, if LIPA and PSEG don't properly prepare the grid by upgrading equipment such as pole-top transformers to handle the extra load. Shorter term, he said, LIPA and PSEG should examine programs and technology that help balance and manage the higher electric loads from increased charging.

"We can use that load to optimize performance of the grid," he told LIPA trustees last month. "If we ignore, it could be harmful," because current transformers can only handle a few chargers operating at a time.

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The study found that utility customers would see \$587 million in total savings between now and 2035 through lower electricity costs that came from maximizing use of existing resources on the grid. Power plants and undersea cables aren't used as much in the overnight periods, yet the utility pays fixed costs under the terms of its contracts for the power. By offering special overnight charging rates and incentivizing customers to charge at managed times to avoid

overload, the utility will see savings, Warner said.

There are other benefits for customers. It costs about half as much to power a car with electricity than it does with gasoline or diesel fuel, Warner said, a benefit that would translate to \$1.5 billion in fuel savings for Long Islanders between now and 2035.

“If we just converted a fraction of the existing vehicles to electric cars, and they were fueling with electricity rather than gasoline, you’d be turning \$1.5 billion in new disposable income into Long Island households,” he said.

What’s more, every electrically fueled mile is 82 percent cleaner than that of traditionally fueled cars, providing benefits for all Long Islanders in cleaner air and health, upward of \$700 million in benefits toward reaching state emissions-reduction goals, and improving health.

But each electric vehicle increases a home’s electric consumption by around 25 percent, and that puts added stress on local grids, particularly when adoption rates increase and several homes in a single neighborhood have EVs.

There’s also a need for more charging stations, some to be funded by LIPA, the study found. The availability of electric vehicle charging stations was “particularly weak” on Long Island, compared with the rest of the state and the country. Vermont leads the nation with 900 charger plugs for every 1 million people, and 375 public chargers per 1,000 plug-in electric vehicles.

By comparison, Long Island has only around 50 charging stations for every 1 million people, and fewer than 40 chargers per 1,000 electric vehicles.

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