

Electrified Transportation

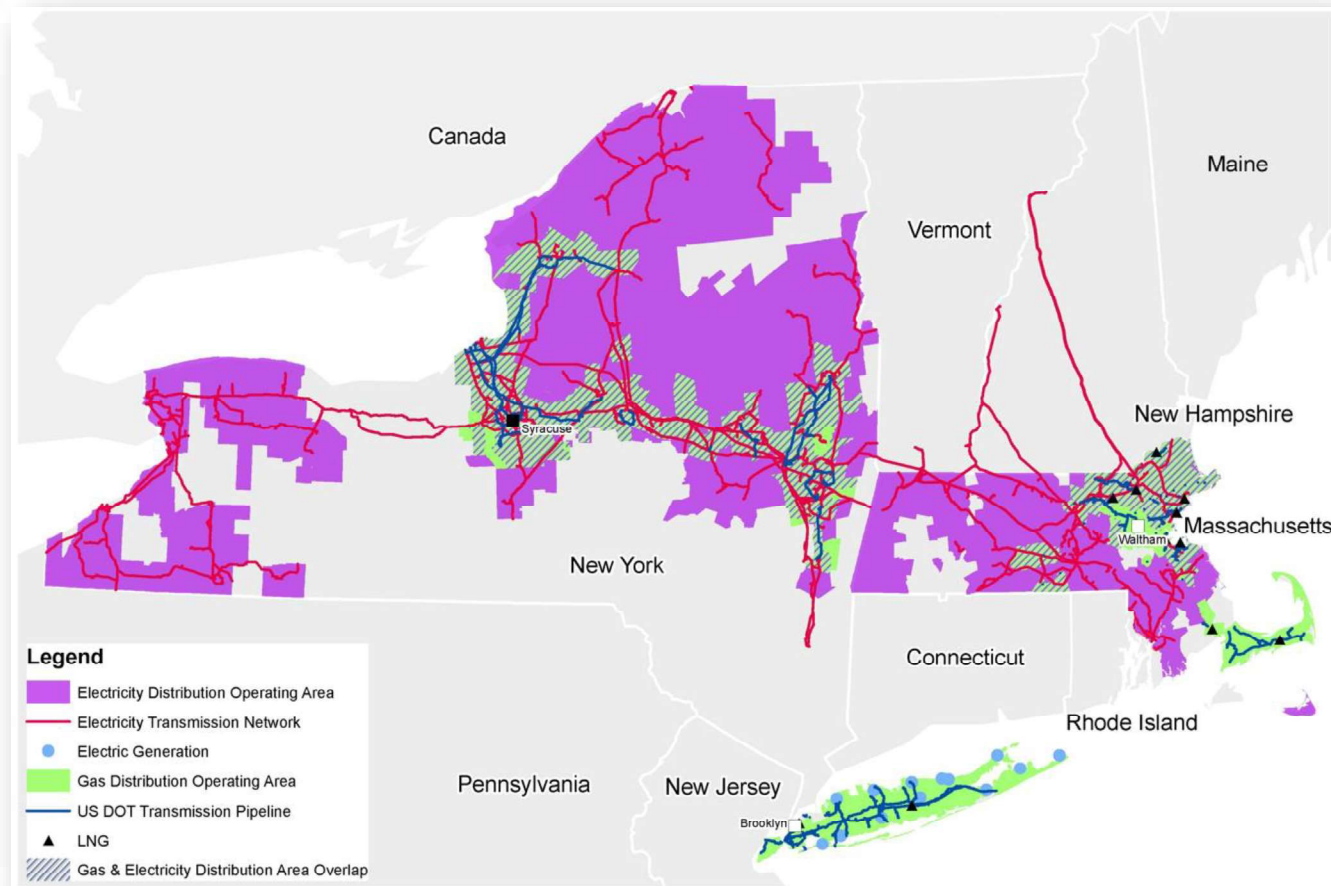
NESCAU

May 24, 2023

nationalgrid



National Grid USA: Who We Are

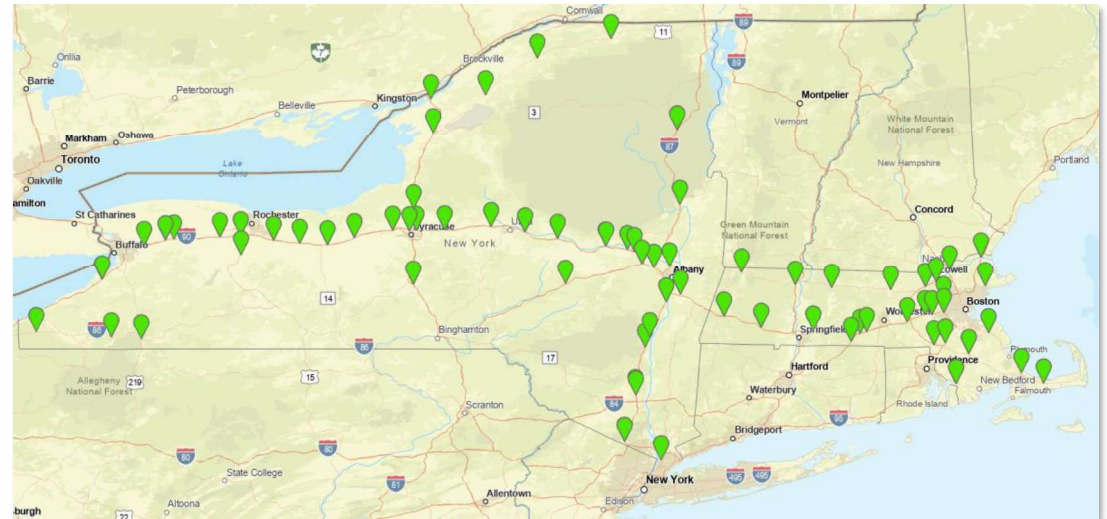


- **Electric, natural gas, and clean energy delivery company** serving more than 20 million people through our networks in New York and Massachusetts
- **Make-Ready EV programs** in New York and Massachusetts
- **Over 4,600 charging ports installed, 49% in environmental justice and disadvantaged communities**
- **Electrify our entire internal light-duty fleet by 2030. We plan to electrify 1,617 vehicles in the US by 2030.**

Context: National Grid's Electric Highways Study

We analyzed traffic data to forecast **future fast-charging capacity at over 70 highway sites in NY & MA.**

- **Light-duty** (passenger) vehicles and **medium- and heavy-duty** (commercial) vehicles
- Assumptions match state mandates for electric vehicle adoption
- Results will help utilities, regulators, site operators, and state agencies coordinate and drive cost savings



● Electric Highways Study Site

Electric Highways
Study: Expert
Partners



GEOTAB



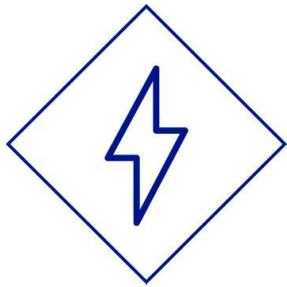
Stable

This study complements state DOT plans, provides a 25-year roadmap for highway electrification

National Grid

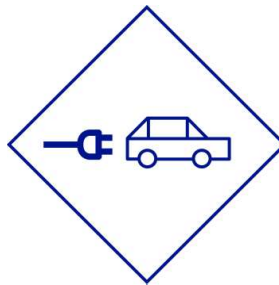
Areas of Analysis: Electric Highways Study

We conducted this independent study to inform our planning for electric grid infrastructure – and to support our states in coordinating fast-charging deployment efforts.

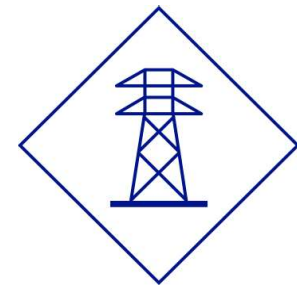


What is total demand for charging at each site – based on current traffic patterns?

Supports site-level charging deployment



How many chargers are needed to meet demand – for both LDVs and MHDVs?



What is total power required to meet demand – and when will that site require a transmission interconnection?

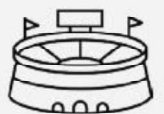
Informs utility infrastructure needs



Large Industrial Plant
(40+ Megawatts)



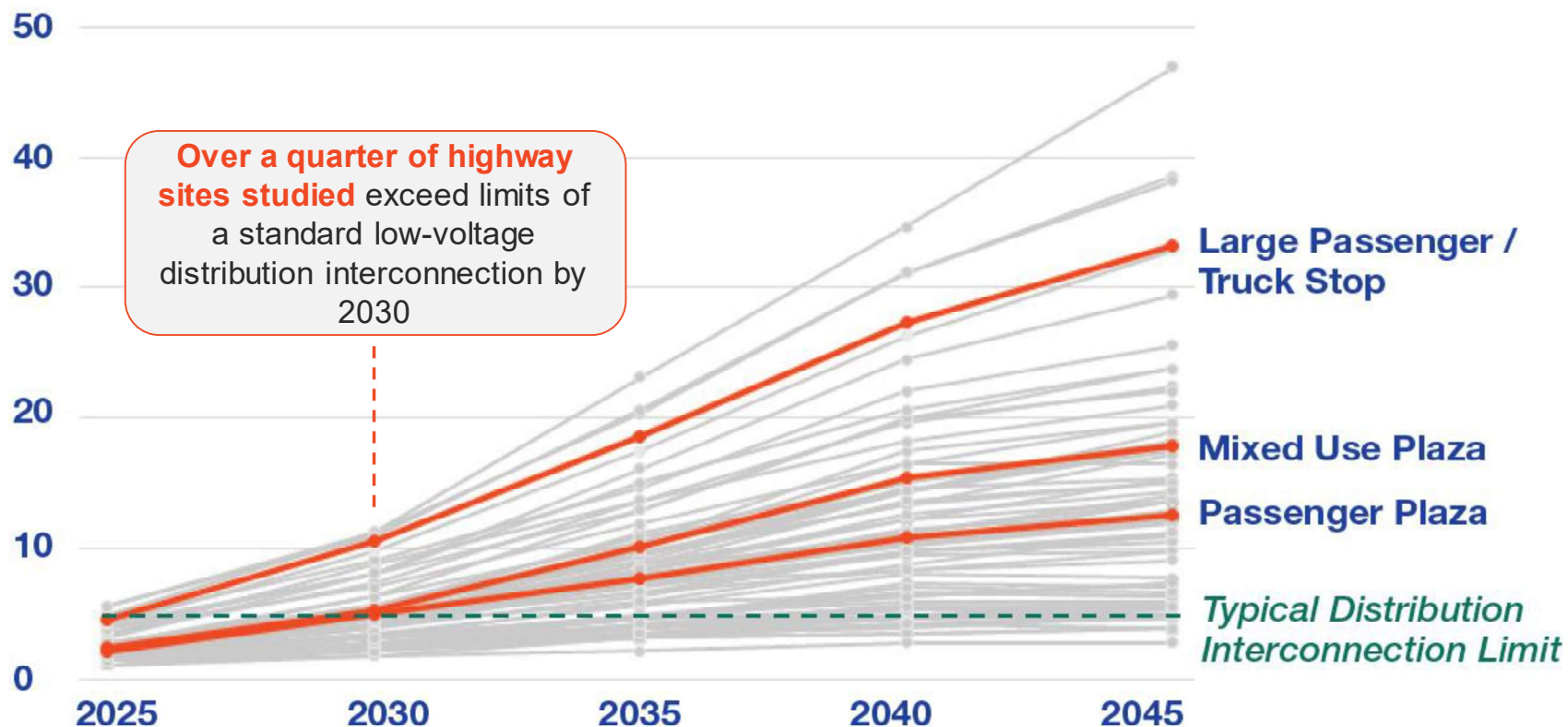
A Small Town
(20 Megawatts)



A Stadium
(5 Megawatts)

Projected charging capacity for 71 Northeastern highway sites

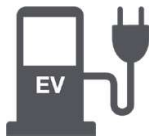
Megawatts of power to meet annual peak demand, over time



Note: Analysis seeks to match ZEV goals for New York + Massachusetts, makes simplifying assumption that all ZEVs are electric. See study for discussion of assumptions, including role of hydrogen fueling and impact on capacity.

There is a critical need to align infrastructure timelines with electrification roadmaps

~6-12 Months
to Construct



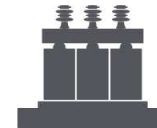
Onsite Upgrades

~1-4 Years to
Construct



Distribution Upgrades

~4-8 Years to
Construct



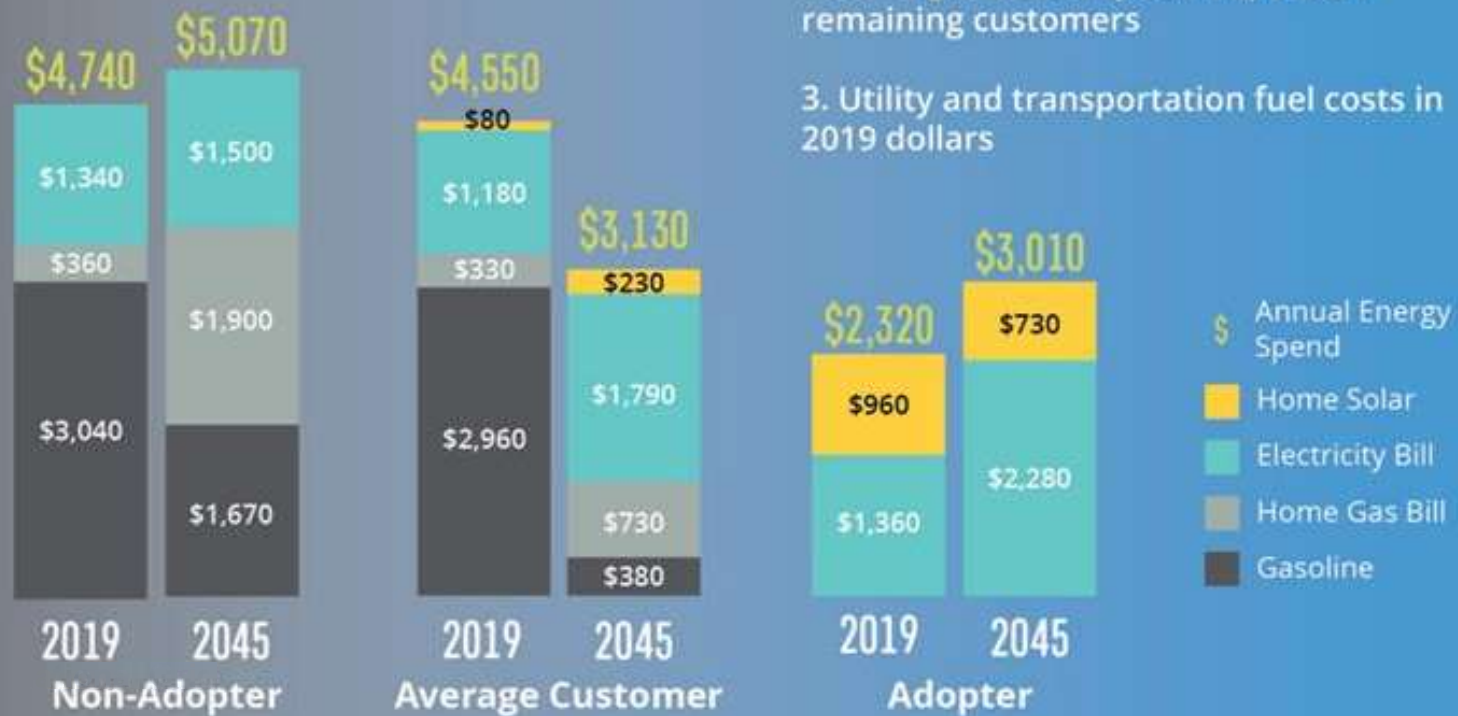
Transmission Interconnection
and Upgrades

National Grid is seeking to de-risk investment and avoid EV adoption outpacing utility infrastructure.

We as an industry must meet the moment to ensure the electric grid is an enabler—not a bottleneck—to developing a seamless highway and fleet charging network.

Household Energy Bill Impact

ENERGY AFFORDABILITY BY ADOPTION



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