

Fleet Electrification:

The Utility's Role in Electrifying Your School Bus Fleet

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May 19, 2022*

nationalgrid



It Comes Down to Clean Air and Climate Change

Our Vision

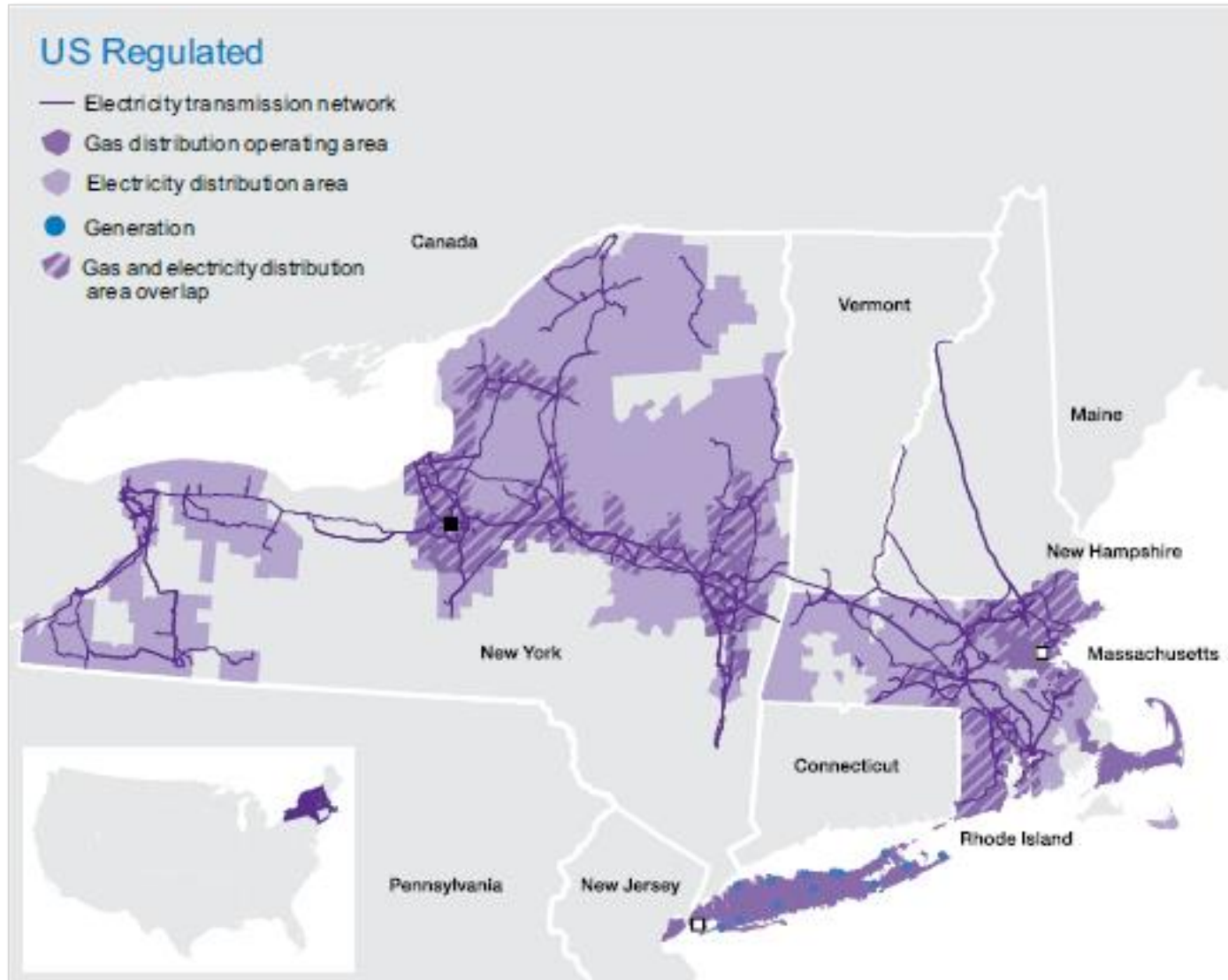
A future where clean transportation is universal and the environmental and public health benefits are shared by all our customers and communities.

Our Guiding Principles

- Our programs support a cleaner environment and reduce GHG emissions
- Our customers and communities have equitable and affordable access to clean transportation
- Smart integration for grid optimization, customer savings, and a clean energy future

Transportation is
>45% of GHG
emissions in the
Northeast and a
leading cause of air
pollution.

National Grid: *Who We Are*



- **Electric and gas utility delivering energy to 20+ million people in New York, Massachusetts, and Rhode Island**
- Large Make-Ready EV infrastructure programs in New York and Massachusetts
- Over 4,500 charging ports installed – **46% in environmental justice and disadvantaged communities**
- **Holistic EV offerings:** Residential offerings, Public / Workplace Charging, Fleet Charging, and Fleet Advisory Services

Fleet Electrification: A Path to Cleaner Air, Equitable Access, & Future Load Insight

Why Fleets?

- **MHDV ZEV Goal: 30% of new sales by 2030**
- **CO₂: MHDV 8-30x CO₂ savings / vehicle¹**
- **Health: MHDV 30-150x PM_{2.5} savings / vehicle¹**
- **Equity: Efficient path to support LMI / EJC communities**

Fleet Assessments (so far)

100

MA public fleets eligible for no-cost assessments

>\$150M

Lifetime cost savings identified in 1st 46 fleets²

>140

Fleets investigating EVs in NY, including >20 schools³

Key Customer Sub-segments













Beverly, MA V2G Project

School Bus Focus at National Grid:

- **>400 School districts in NY and MA...**
~25% of the total buses operating
- **MA: Proposed 300 school buses by 2025...**
infrastructure, charging, and \$175k bus rebate
- **NY: 100% of new bus sales by 2027...**
all buses on the road ZEV by 2035
- **Vehicle-to-grid (V2G) project experience...**
Beverly, MA school bus provided 3 MWh in 2021 (enough to power 100 homes in a day)

Customer Support: Utilities Can Support the Electrification Journey

 NAVIGATING THE UTILITY	 PLANNING EV / EVSE ADOPTION	 UTILITY INFRA.	 CUSTOMER INFRA.	 EV CHARGER (EVSE)	 VEHICLE COSTS	 OTHER SOFT COSTS	 ONGOING OPERATIONS
<ul style="list-style-type: none"> • Finding POC • New tech. for site hosts & fleet managers 	<ul style="list-style-type: none"> • Site analysis • Bill impact • Business operations impact 	<ul style="list-style-type: none"> • Distribution Network • Transformer • Meter • Conductor 	<ul style="list-style-type: none"> • Panel • Conductor • Boring • Trenching • Conduit 	<ul style="list-style-type: none"> • Charging station 	<ul style="list-style-type: none"> • EV option can be >2x more than ICE option 	<ul style="list-style-type: none"> • Signs • Landscaping • Maintenance • Networking 	<ul style="list-style-type: none"> • Uncertain costs & tech. • Managed charging • New business models
Single Points of Contact (SPOC)	Fleet Assessment Services	Infrastructure Make-Ready Programs <i>NOTE: NY pilot is utility-side infrastructure only. MA program pending approval in mid-2022.</i>		State, Federal, and Utility Rebates, if available		Fleet Operator Responsible	Fleet Operator Responsible, Utility Advises, Reduces Fuel Cost, Enables Resiliency

Key: ■ Primarily utility role ■ Joint developer & utility role ■ 3rd party options available ■ Customer primarily responsible ■ Customer & utility role

Fleet Advisory Services: *New York Example*

Fleet Assessments

Site feasibility, rate analysis, estimated billing impacts and related recommendations (covers light, medium, and heavy-duty fleets)



National Grid's NY System Data Portal ([Publicly Available Here](#))



- Load Capacity
- Feeder Level Data 3 Phase
 - > 1.5 MW Capacity Remaining
 - 600 kW to 1.5 MW Capacity Remaining
 - < 600 kW Capacity Remaining
- 1 and 2 Phase
 -

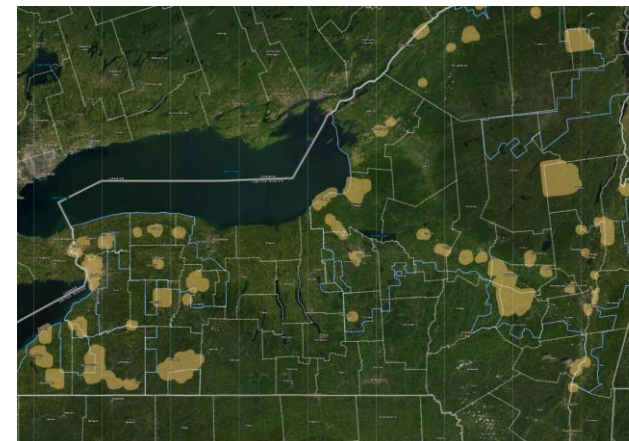
Fleet Advisory Services: *New York Example*

\$6M Medium- and Heavy- Duty Vehicle (MHDV) Pilot

Focused on disadvantaged communities (DACs)

Covers up to 90% of *utility-side* make-ready costs

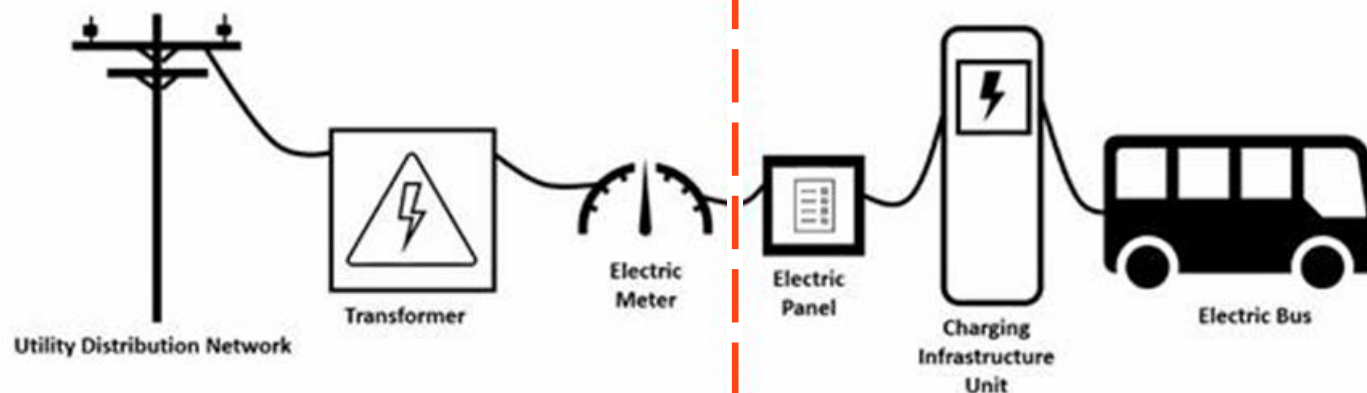
Participants must participate in the New York Truck Voucher Incentive Program (NYTVIP)



Disadvantaged Community (DAC) Map

Supported by National Grid (up to 90%)

Supported by EPA (up to \$20k for priority schools)



National Grid

Fleet Services: (Proposed) Massachusetts Fleet Program

PROPOSED: ~\$99M Program
 Pending Massachusetts DPU
 Approval in mid-2022

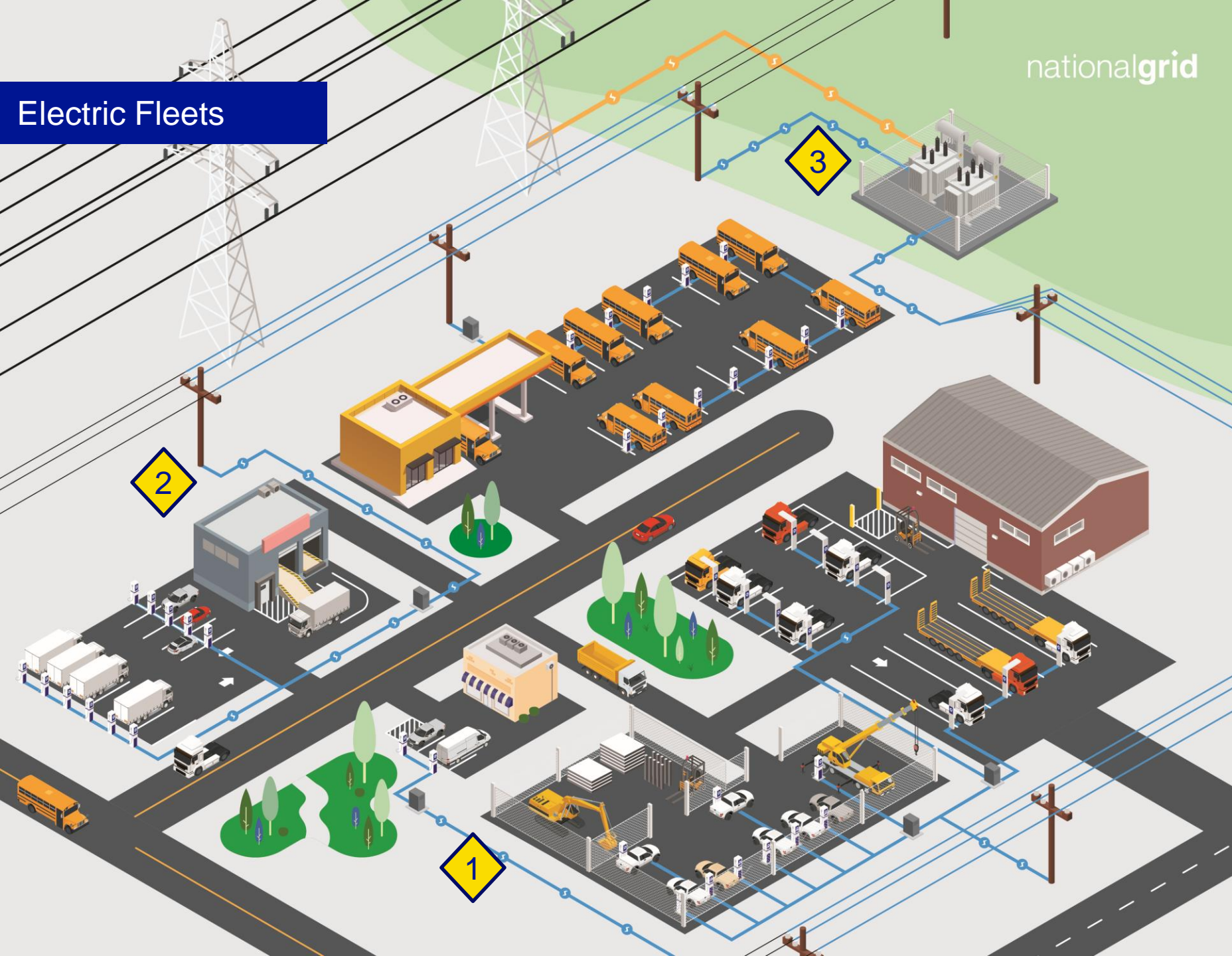


	Fleet Assessment Services*	Fleet Make-Ready	EJC School Bus Rebates
Ports / Vehicles Supported	100 private, 50 non-profit, 25 more public in '25 + <u>online tools & support for fleets</u> of all sizes ~2,625 vehicles	~600 EV Charging Ports ~2,000 vehicles (~850 MHDV, ~1,150 LDV)	300 buses
Incentive Levels**	50% cost for private No-cost for non-profit	Up to 100% Make-Ready (Utility- and Cust-Side) Up to 50% EVSE Rebate	Incremental cost: up to ~\$175k / bus
EJC Support***	Target 40% EJC fleets	40% of ports @ EJCs Up to 100% (Make-Ready and EVSE Rebate)	Schools or contractors that serve primarily EJC communities

* Fleet assessments build upon the active program of 100 public fleets. Online tool development costs, vendor management, & design shared with Eversource.

** Fleet program also includes an off-peak rebate (\$0.03 - \$0.05 / kWh) to reduce on-peak charging load (customers also eligible for ConnectedSolutions DR)

*** EJC eligibility aligns with MOR-EV Trucks: Fleets either registered in OR operate >50% of time within census block groups that meet the State's EJC Criteria



Electric Fleets

Why Contact the Utility Early?

- 1 Fleet Clustering**
Fleets tend to gather in certain areas, creating new electricity load centers
- 2 Magnified Impact**
Fleets lead to massive power – potentially larger than today's C&I sites
- 3 Upgrade Timing**
Grid upgrades require substantial lead-time, so 2027 requires planning now

Fleet Electrification Services: Program Resources

Websites:

- Fleet Hub: <https://www.nationalgridus.com/ev-fleet-hub/>

NY Additional Resources:

- Make-Ready Primary Program site: ngrid.com/uny-evcharging
- Make-Ready Marketing Landing page: ngrid.com/takechargeuny
- [Approved Contractor List](#)
- [EVSE Charging Station List](#)
- [Program Brochure](#)
- [Disadvantaged Community Map](#)
- [EV Load-Serving Capacity Map](#)

Customers shopping EVs:

- [National Grid Ways to Save - EV Website](#)
- [National Grid - EV Advisor](#)
- [Time of Use Pricing for home charging](#)

MA Fleet Advisory Services Website:

- Fleet Advisory: <https://fleetadvisoryma.nationalgrid.com/>

The screenshot shows the homepage of the MA Fleet Advisory Services website. At the top, there is a navigation bar with the 'nationalgrid' logo, 'MA Fleet Advisory Services Program', and links for 'About', 'Instant Estimate', 'Contact Us', and a 'Log in' button. The main content area features a large blue banner with the headline 'No Cost, Expert Guidance for Fleet Electrification'. Below this, a sub-headline reads: 'Our personalized and comprehensive guidance can help you understand the impacts and benefits of shifting a publicly owned fleet to electric vehicles (EVs)'. A 'Learn More' link is provided. Below the banner are two columns of content. The left column is titled 'See the Difference EVs Can Make' and includes a 'Get Instant Estimate' button and an image of three white vehicles (a sedan, a van, and a truck). The right column is titled 'Get Started With Your Custom Analysis' and includes a 'Contact Us' button and an image of a hand holding a tablet displaying various charts and graphs. At the bottom, there is a section titled 'Benefits of Using EVs' with a list of three bullet points: 'Less operations and maintenance support required', 'Long-term cost savings', and 'Reduced environmental impact'. A 'Learn More' link is also present. The background of the bottom section features an image of a white car being charged at a station.

Electric Transportation: *Preparing fleets for the electrification journey*

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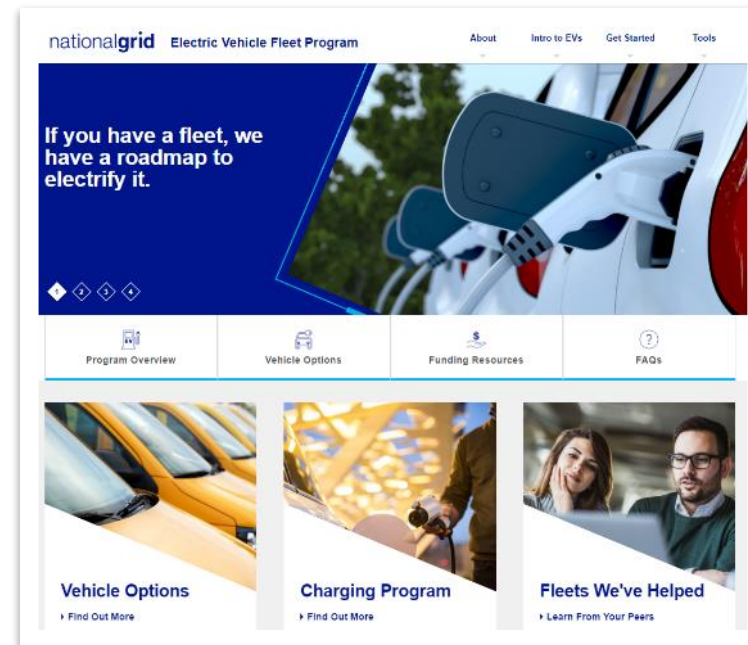
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EV Fleet Hub



- **Fleet Hub:** <https://www.nationalgridus.com/ev-fleet-hub/>
- Fleet EV 101: Vehicle & charging options, Funding Resources
- Publications, e.g. Understanding Grid Impacts of Electric Fleets
- Case Studies
- Fleet Assessment Interest Form
- **Email:** NGFleetProgram@nationalgrid.com

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