

national**grid**

**Fleet Electrification:
Using utility program
incentives to lower
project costs**



Activate your fleet electrification plan with infrastructure

The first phase of fleet electrification, planning, was covered in the first whitepaper of this series, titled “*Accelerating fleet electrification with utility advisory programs*”. That gave an overview of everything a fleet needs to get started with fleet electrification, including:

- **Benefits of fleet electrification:** Operations and maintenance cost reduction, emissions reduction, vehicle and infrastructure financial incentives, a better driver experience, and better community health through lower air pollution.
- **Tools available to find grid capacity:** Utility system capacity maps, [EPRI's GridFAST portal](#), and fleet electrification planning tools.
- **How utility fleet advisory programs can help:** Utilities such as National Grid have programs in place to develop a roadmap to electrification, including route analyses, Total Cost of Ownership (TCO) savings estimates, and vehicle procurement plans.
- **How to contact your utility,** e.g. National Grid at nationalgridus.com/ev-fleet-hub/

Utility advisory programs can identify massive fleet savings



Beyond planning: Building out the necessary charging and vehicle capabilities

Across the country, many utilities have infrastructure incentive programs in place to support the infrastructure necessary for EV fleets. Commonly called “Make-Ready”, these incentives can cover up to 100% of grid-side and customer-side project costs, and in certain cases can support the cost of EV Supply Equipment (EVSE). EEI has a database of available utility incentive programs here: eei.org/en/issues-and-policy/electric-transportation/evprograms

National Grid’s Massachusetts EV Charging Program ngrid.com/ma-evcharging, for example, can fund up to 100% of the electrical infrastructure costs associated with installing EV charging stations, as well as tiered EV charger rebates for eligible customers:

Program Components for Massachusetts Customers (based on eligibility)				
	Utility-Side Infrastructure 	Customer-Side Infrastructure 	Charging Station 	Other Soft Costs 
Component for All Segments	<ul style="list-style-type: none"> • Distribution Network • Transformers • Meters • Conductor 	<ul style="list-style-type: none"> • Panel • Wiring • Conduit & Trenching • Design & Permitting • Installation Labor 	<ul style="list-style-type: none"> • Hardware • Network Equipment 	<ul style="list-style-type: none"> • Networking Services • Demand Charge Alternative (lower rates)
 Public and Workplace			 <i>(publicly accessible sites only)</i>	 <i>(publicly accessible sites only)</i>
 Multi-Unit Dwellings (MUD)				 + Free EV-Ready Site Plans
 Fleets			 <i>(public fleets only)</i>	 + Free Fleet Advisory Services for Public Fleet + Off-Peak Charging Rebate
<p>Note: Graphic is for illustrative purposes only and may not be exhaustive; contents are subject to change. Please see additional incentive details on our website at ngrid.com/ma-evcharging or in the one-page inserts for each segment.</p>				

Brockton Area Transit (BAT), a public transit authority in Massachusetts, leveraged National Grid’s support when electrifying 5 full-size buses — through the program, BAT received \$723,000 toward its project costs, significantly reducing its infrastructure costs and accelerating the project. See the full case study at ngrid.com/fleetcasestudies

Getting into details: How much of the project can be supported?

Make-ready infrastructure programs can sometimes support a large portion of the total project costs. For a DCFC project in National Grid’s Massachusetts territory, fleets are eligible for:

Charger Type	Customer Segment Eligibility	Utility-Side Infrastructure Incentives	Customer-Side Infrastructure Incentives	Charger Rebates**	Networking Rebates
DCFC	Private Fleets	Up to 100%	Up to 100%*** (cap per port: <50 kW: Level 2 incentives above 50-149 kW: \$30,000 150+ kW: \$60,000)	No charger rebates	Not offered
	Public Fleets (non-EJC)			Up to 50%*** (cap per port: <50 kW: Level 2 rebates above 50-149 kW: up to \$20,000 150+ kW: up to \$40,000)	
	Public Fleets (EJC)*			Up to 100%*** (cap per port: <50 kW: Level 2 rebates above 50-149 kW: up to \$40,000 150+ kW: up to \$80,000)	

Public fleets are defined as: public transit, including school buses, and government owned fleets.

* Environmental Justice Community (EJC) eligibility is defined as fleet customers based in an EJC that meets any EJC criteria, including fleets that operate more than 50 percent of the time within census block groups that meet any EJC criteria. [Environmental Justice Community map](#) (click link to check address eligibility).

** DCFC charger rebate totals are capped at \$400,000 per site.

*** Caps may apply please visit website for complete details.

Installed chargers must comply with National Grid’s [Qualified Equipment List](#) requirements.

View additional program details at ngrid.com/ma-fleet



These savings can be quite large. Here’s an example of a fleet of 4 trucks. Infrastructure incentives can cover the entire infrastructure costs, saving ~\$400k. The fleet can also potentially save on O&M, with electricity cost savings of thousands of dollars per month vs. diesel. Public fleets, such as Highland Electric Fleets in the video below, can save even more with EVSE incentives and planning services from National Grid.

MA Example:		Plans	Infra.	EVSE	O&M
Private Heavy-Duty Truck Fleet of 4 Trucks	EV Program Support¹	Public fleets only	✓	Public fleets only	✓
MA G-3 Rate, Environmental Justice Community, Income Location, 4x150 kW chargers, charging 500 kWh per day per vehicle, ~14% Load Factor	Cost without EV Program²	Internal Resources ~\$20k	Up to \$400k or more	\$40k-\$80k or more per port	~\$0.25-\$0.30 per kWh
▶ Collectively, EV Fleet Programs could potentially provide up to ~\$400k upfront savings, and ~20% ongoing electricity savings	Cost with EV Program³	~\$20k	\$0 for Fleets	\$40k-\$80k or more per port	~\$0.20-\$0.25 per kWh
	Fleet Savings⁴	Public fleets only	~\$400k	Public fleets only	~\$3k per month (~\$36k / yr.)

Note: 1) Summary only – see website for details and eligibility. 2) Estimates only – local conditions, supplier variability, and installation costs will vary; 3) Subject to caps per port: 150 kW DCFC customer-side infrastructure is capped at \$60k & EVSE rebates at \$80k for an EJC Income project. 4) Savings are estimates for illustrative purposes only, and final costs may vary.



Highland Electric Fleets, a school bus operator in Beverly, MA, leveraged National Grid’s infrastructure support when electrifying their vehicle-to-grid school bus project, which provides MWh of energy back to the grid while earning thousands of dollars in revenue. See the video here: <https://www.youtube.com/watch?v=Kau65fndILY>

Manage your connection limits with new solutions like Flexible Connections

Utilities such as National Grid are continuing to create new solutions to accelerate fleet electrification. One such solution is Flexible Connections, which allows fleet customers to build nameplate charging capacity above and beyond the typical utility connection limit, and use those chargers during times when there is existing circuit capacity. Essentially, this allows utilities and customers to use more power in the grid infrastructure during non-peak times, while any necessary grid upgrades are being completed.

Flexible connections allow large fleet projects to be:

Bigger: Installing a larger nameplate capacity for each charger means faster charging times for vehicles.

Faster: Installing charging stations before any necessary grid upgrades are completed can save months if not years of project time — fleets no longer have to wait for the grid upgrade to use their full nameplate capacity during non-peak times.

Cheaper: Fleets can start using their EVs sooner, saving on fuel and O&M costs much faster, while also deferring or eliminating hundreds of thousands of upgrade costs.

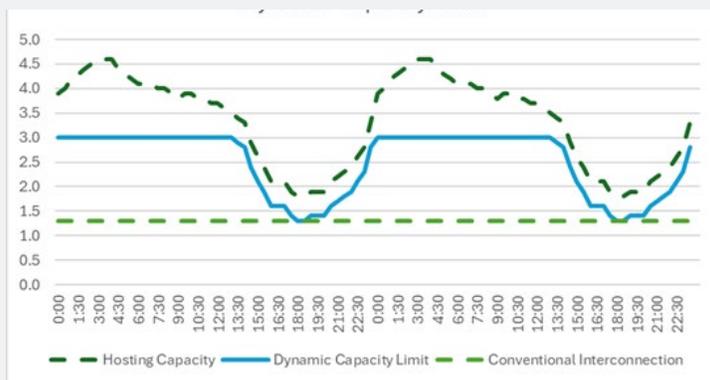
How it works

Flexible connections have been used in solar and battery projects and is now starting to be applied to EV projects as well in select states (e.g. National Grid in NY and MA). The utility studies the grid impact of a potential fleet's load and performs an interconnection calculation (the forecast of the expected capacity on a distribution feeder), assigns a target curtailment profile for a customer, and then sends day-ahead signals for the fleet to follow during their daily operation. These limits require a "closed-loop" control at the customer site that allows the utility to take action to avoid or mitigate an overload if grid conditions quickly change.

There are also scheduled connection options, which allow customers to have a set schedule instead of the dynamic connection. The schedule can vary seasonally, monthly, hourly, or all of the above, and includes utility protective measures to ensure compliance with the agreed upon schedule and take remedial actions in real-time for each day of the season or year.

Here's a hypothetical Dynamic Capacity Limit for a fleet customer. Typically, a customer would be limited to the dotted green line (1.3 MW), but Flexible Connections allow the customer to use up to 3 MW a large portion of the day. This leads to a much higher capacity charging for the fleet and increases the load factor of the site, typically lowering the effective rate of electricity for the fleet.

Flexible Connections: Example Dynamic Capacity Limit

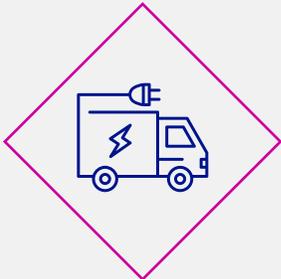


To learn more about Flexible Connections, please reach out to National Grid at NGFleetProgram@nationalgrid.com.

Next steps: What is the process to get connected with EV Infrastructure?

Beginning a fleet electrification project is a straightforward process. Once you've connected with your utility, you'll follow steps similar to those below to get started.

Fleet electrification connection process / next steps

 <p>Get started today Initiating service requests now will:</p> <ul style="list-style-type: none"> A. Get your project in our construction/upgrade queue. B. Shorten the typical connection timeline (typically 6-18 months or more). C. Utilize EV make-ready funding while it's available to meet your EV goals. 	STEP 1	Information & Application Potential participant reviews program information and contractor resources at ngrid.com/ma-evcharging or www.ngrid.com/uny-evcharging
	STEP 2	Review Customer reviews program eligibility, Environmental Justice / Disadvantaged Community status, and program requirements at the EV program link(s) above.
	STEP 3	Design Program participant works with contractor and National Grid on charger selection and site design.
	STEP 4	Application Review Participant or contractor submits application and National Grid reviews eligibility and site information, assessing costs and feasibility.
	STEP 5	Construction National Grid and contractor build EV charging infrastructure into parking space.
	STEP 6	Activation Chargers are installed and activated. Customer provides documentation. National Grid provides payment to customer.

Utility incentive programs help fleets create a cleaner and more efficient business, providing infrastructure incentives and support for fleet electrification projects. Getting started with the application steps above will help ensure your project progresses smoothly and efficiently while preventing potential project delays.

– **EV Fleet Hub**

nationalgridus.com/ev-fleet-hub/

– **EI database of FASP programs**

eei.org/en/issues-and-policy/electric-transportation/evprograms

– **Investigate your utility's website for EV Points of Contact**

– **EPRI GridFAST portal**

gridfast.com/about?url=home