



# Smart Charging Your Electric Car in Massachusetts

April 26, 2023

# Our mission

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To harness our power as energy consumers to speed the transition to a low-carbon future.



# Webinar logistics

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Everyone is muted to avoid background noise.

Send questions to via chat box.

We will have time at the end for questions.

We will share slides and a recording after the webinar!



# Agenda

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1. Introduction to Smart Charging
2. Timeline: Past Offerings & Upcoming Filing
3. Currently Available: National Grid's Off-Peak Charging Rebate
4. Eversource Customer? Sign up for Green Energy Consumers' Shave the Peak.

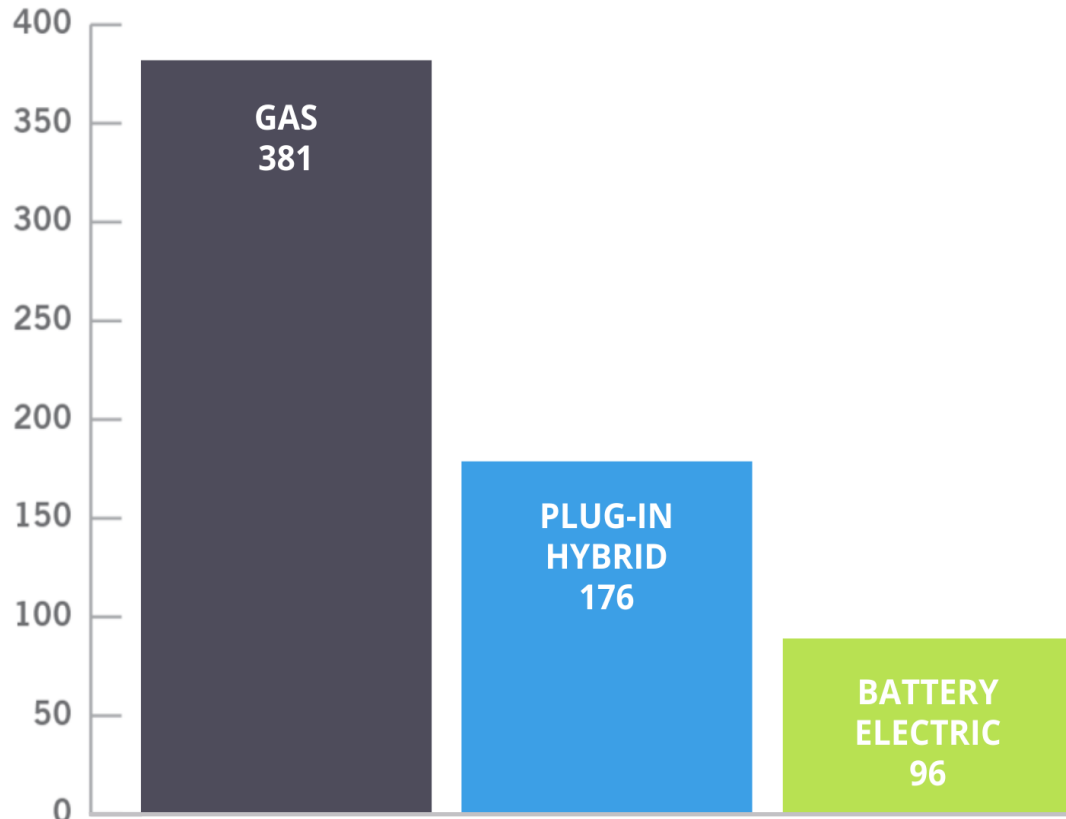


# Introduction to Smart Charging

(In short: When you charge your car matters  
for the environment and the grid. )

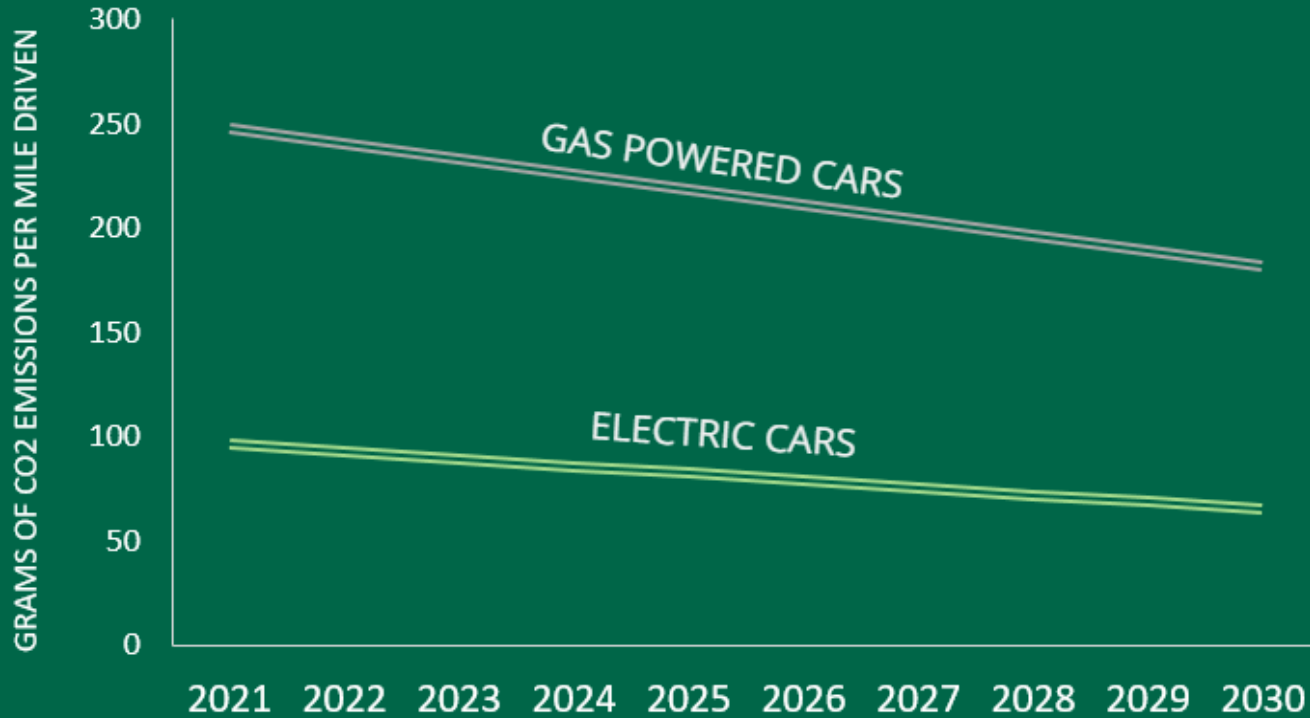
**EVs are already cleaner than gas-powered cars...**

## Grams of CO<sub>2</sub>e Emissions per mile in New England



Data Source: [UCS](#).



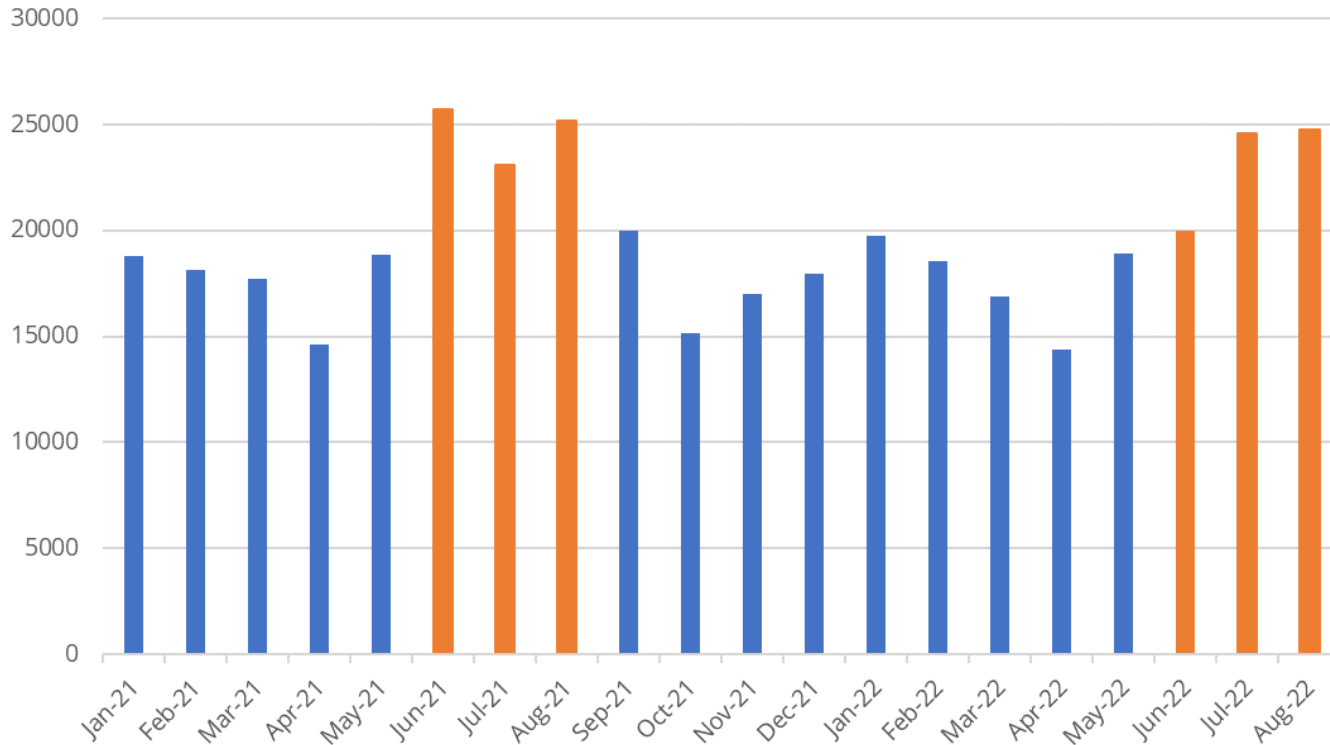


... and will get cleaner as we clean up our grid.



# Demand for electricity varies throughout the year...

ISO-NE Monthly Peak Demand (MW)



Data Source: [ISO-NE](https://www.iso-ne.com/).

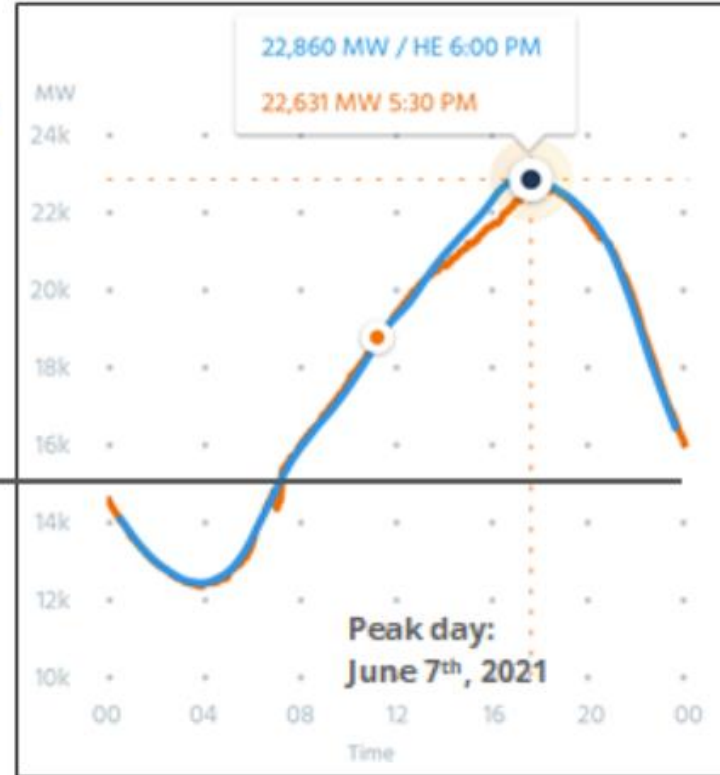
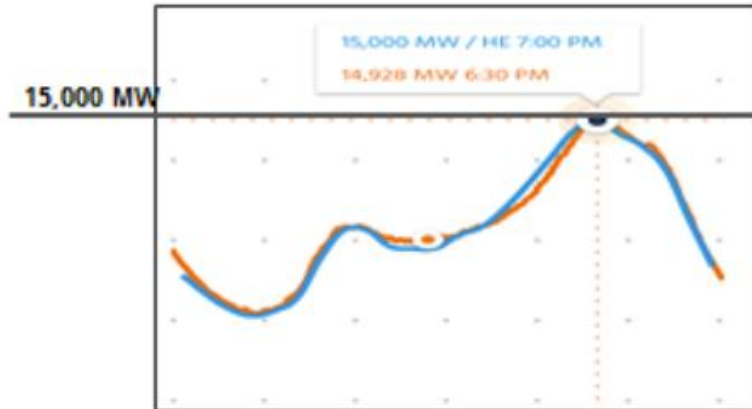




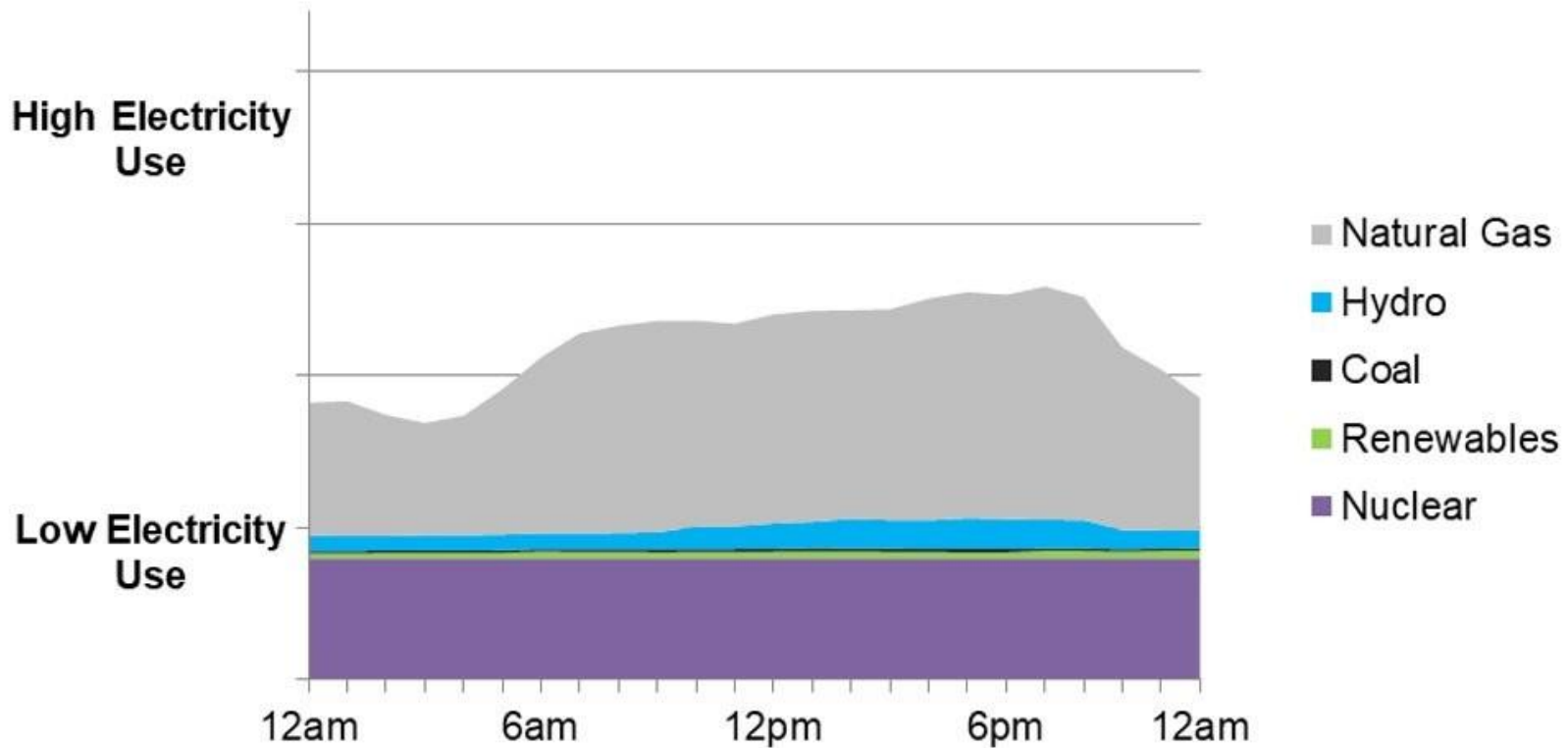
... throughout the month, and throughout the day.

## “Normal” summer day vs. summer peak day

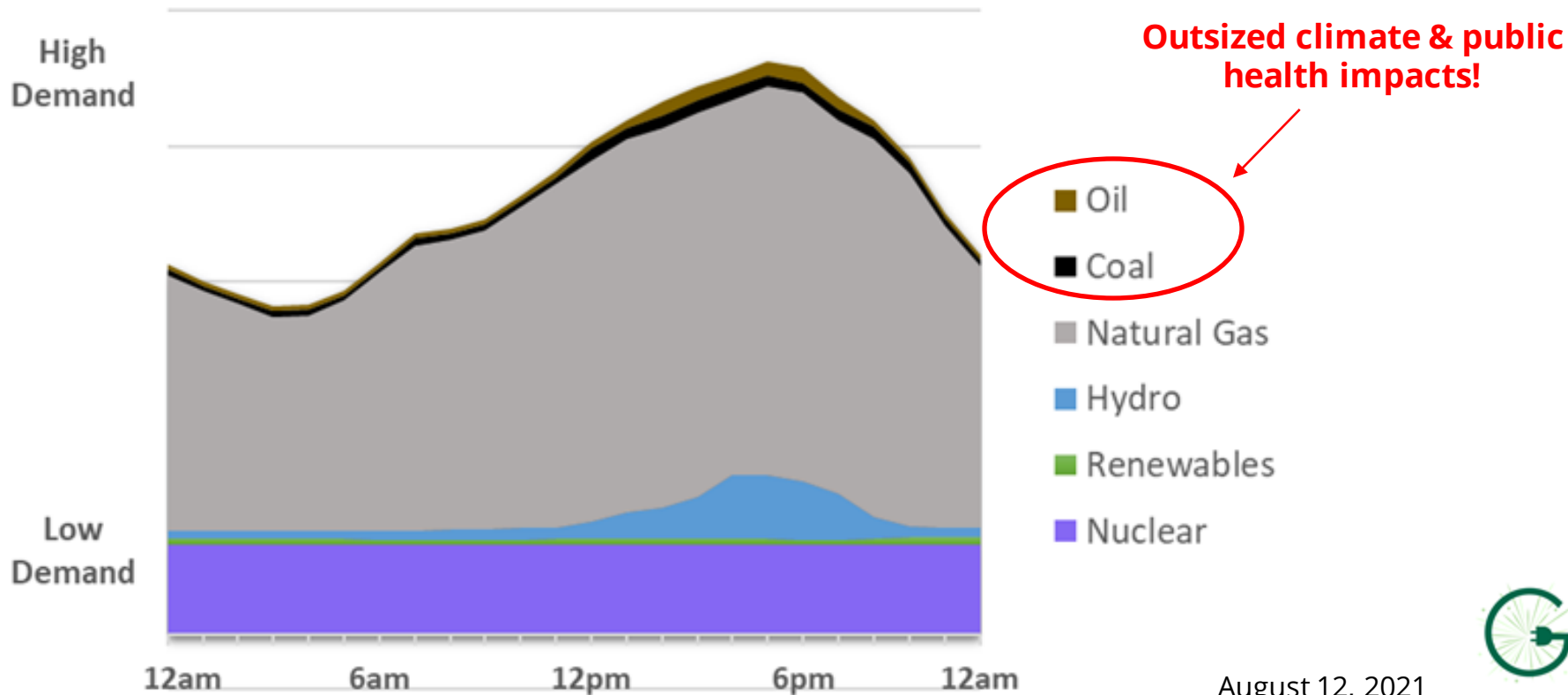
“Normal” summer day: June 17<sup>th</sup>, 2021



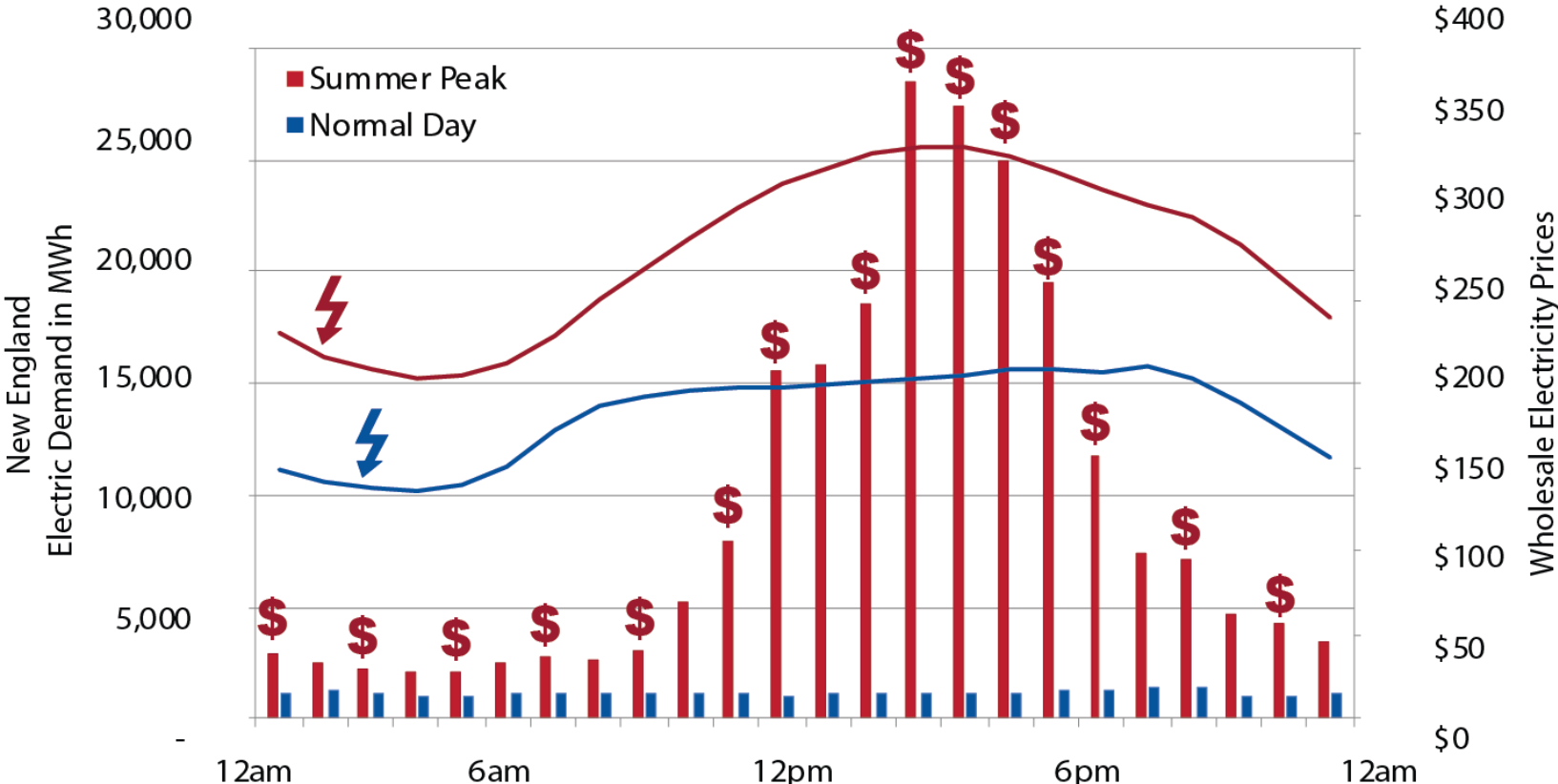
# On a "normal" day, fracked gas handles the peak.



# On a peak day, we bring on even more natural gas, plus some coal and oil.



# System peaks are EXPENSIVE.



Just **1% of the hours** in the year  
account for **8% of the costs** of  
running the electric grid;  
**10% of the hours** account for  
**40% of the costs!**



# Bringing it back to your EV...

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It's always a good idea to avoid charging your electric car during a peak period, both daily peaks but ESPECIALLY system peaks.

## ➤ **Passive managed charging (customer manages charging)**

- **Off-peak charging rebates** can reward you for shifting your charging away from daily peaks, either by offering a lower price per kWh off-peak or a flat monthly incentive for doing most of your charging during off-peak hours

## ➤ **Active managed charging (utility manages charging for you)**

- **Demand response programs** can reward you for allowing the utility to reduce or stop charging during system peaks
- **Scheduled charging programs** reward you for allowing the utility to charge your vehicle during an acceptable window of time, which may vary based on location to meet grid needs



# Timeline: Past Offerings & Upcoming Filing

# Evolution of managed charging offers

National Grid and Eversource start EV and EVSE demand response offerings (ConnectedSolutions)

National Grid's Residential EV off-peak charging program approved

National Grid launches off-peak rebate program

DPU authorizes continuation of EV demand response programs (ConnectedSolutions) through end of 2022 only

2019

2020

2021

2022

2023

National Grid proposes direct load control for EVs beyond demand response to address timer peaks (coming soon)

MA climate bill requires utilities to propose residential EV TOU rate by August 2023

Eversource is proposing new managed charging program





# 2022 Climate Law Calls for Time-of-Use Rates

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An Act Driving Clean Energy & Offshore Wind, Section 90

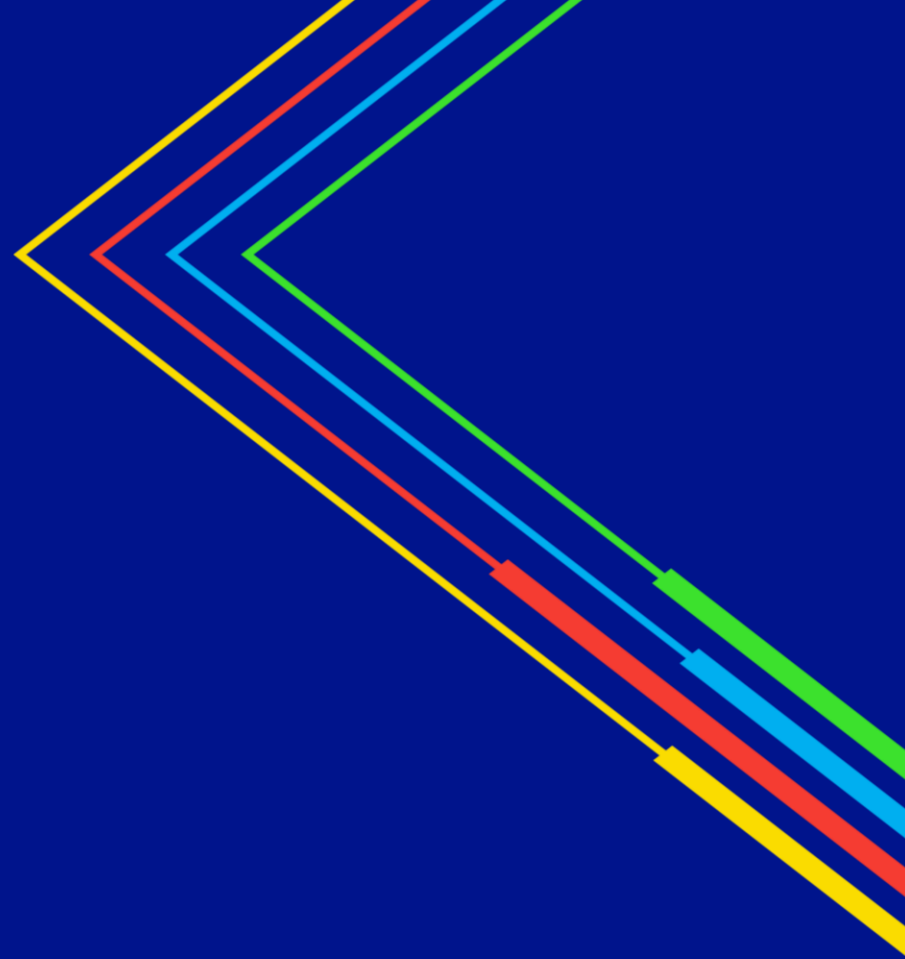
- ***Not later than 12 months after the effective date of this act, distribution companies as defined in section 1 of chapter 164 of the General Laws, shall submit proposals to the department for approval to offer a time-of-use rate. The proposals shall not include additional demand charges.***
- ***The proposals shall include a separate opt-in residential time-of-use rate for electric vehicle owners or lessees.***
- *In evaluating proposals for approval, the department shall consider the effect of the proposal on: (i) energy conservation; (ii) optimal and efficient use of a distribution company's facilities and resources; (iii) benefits to transmission and distribution systems; (iv) equitable rates for electric consumers; and (v) greenhouse gas emissions reductions.*
- *The proposals shall ensure equitable participation by all electric vehicle owners and lessees.*
- *Not later than October 31, 2025 the department shall issue at least 1 order that responds to distribution company proposals to offer a time-of-use rate.*



# Electric Vehicle programs for residential customers

**Christopher Coy**  
April 2023

national**grid**



# National Grid has three EV programs for residential customers

## 1. EV Off-Peak Charging Rebate Program (today's focus)

- Incentives to charge during off-peak hours.
- <https://www.nationalgridus.com/Charge-Smart-MA>

## 2. EV Charging Infrastructure Program (covered in previous webinar)

- Incentives to install home EV charging.
- <https://www.nationalgridus.com/Residential-EV-Charging-Infrastructure-Program>

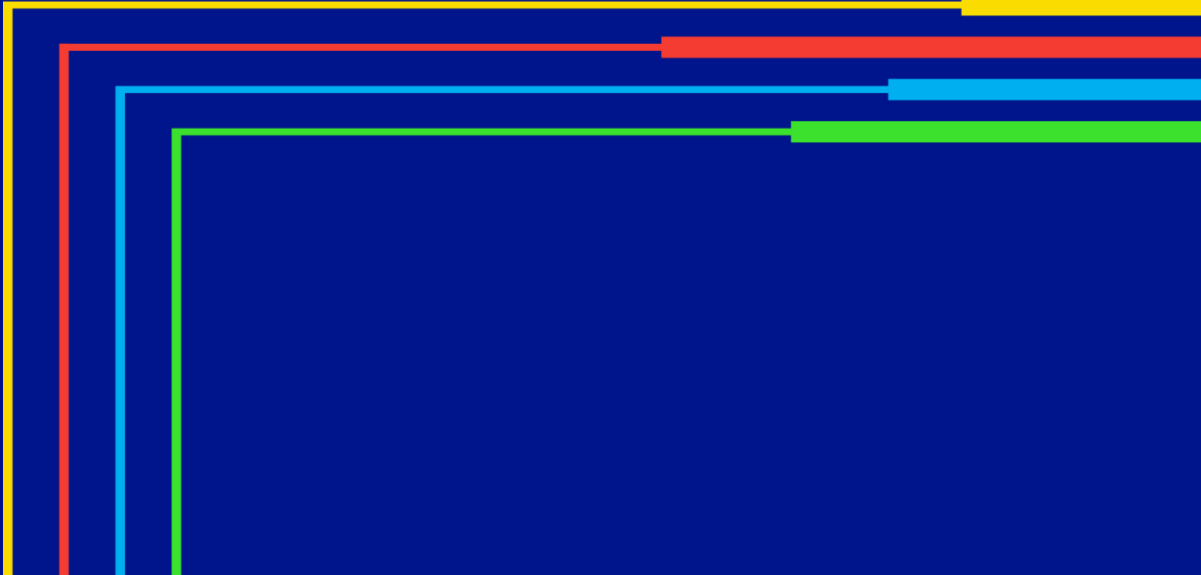
## 3. Turnkey Installation (still under development)

- Enhanced support to install a home EV charger.

# 1

## EV Off-Peak Charging Rebate Program

national**grid**



## EV Off-Peak Charging Rebate Program: What is it?

Save money by charging your EV during off-peak hours.

Charging rebates are paid out on your electric bill.

What will I earn? The average participant gets ~\$100 per year in rebates. The rebate levels are:

Months	Rebate	Off-Peak Hours*
June 1 – Sept 30	\$0.05 per kWh	9:00pm – 1:00pm
Oct 1 – May 31	\$0.03 per kWh	

\* Monday - Friday, excluding national holidays

# How can I participate?

## 1. Check compatibility



### Compatibility

See if your vehicle or charger are listed in the Compatible Vehicle List.

## 2. Enroll via the app



### Download

Download the National Grid Charge Smart app from the Apple Store or Google Play Store.

## 3. Charge off-peak



### Charge

Charge during off-peak hours, even easier if you use your vehicle's timer.

**Get started now at [nationalgridus.com/Charge-Smart-MA](https://nationalgridus.com/Charge-Smart-MA)**

## What EVs and EV chargers are supported? To participate, you need a compatible device from one of these manufacturers.

### Select vehicles from these automakers:

- Audi
- BMW
- Chevrolet
- Chrysler
- Ford
- Jaguar
- Land Rover
- Tesla
- Toyota
- Volkswagen
- Volvo

### Plus, these home EV chargers:

- ChargePoint Home Flex
- EnelX Juicebox
- Smartenit SmartElek 4500 (“Level 1” charging)

See the full list of vehicle models and eligible equipment at [nationalgridus.com/Charge-Smart-MA](https://nationalgridus.com/Charge-Smart-MA)

## My EV or charger isn't supported. What can I do to participate?

1. **Install a supported home EV charger with help from the Residential EV Charging Infrastructure Program (next slides).**
2. **Join the waitlist and we will notify you as more vehicles/chargers are added.**
  - See “Join Waitlist” at [nationalgridus.com/Charge-Smart-MA](https://nationalgridus.com/Charge-Smart-MA)

*Q. But why doesn't this program support my EV or EV charger?*

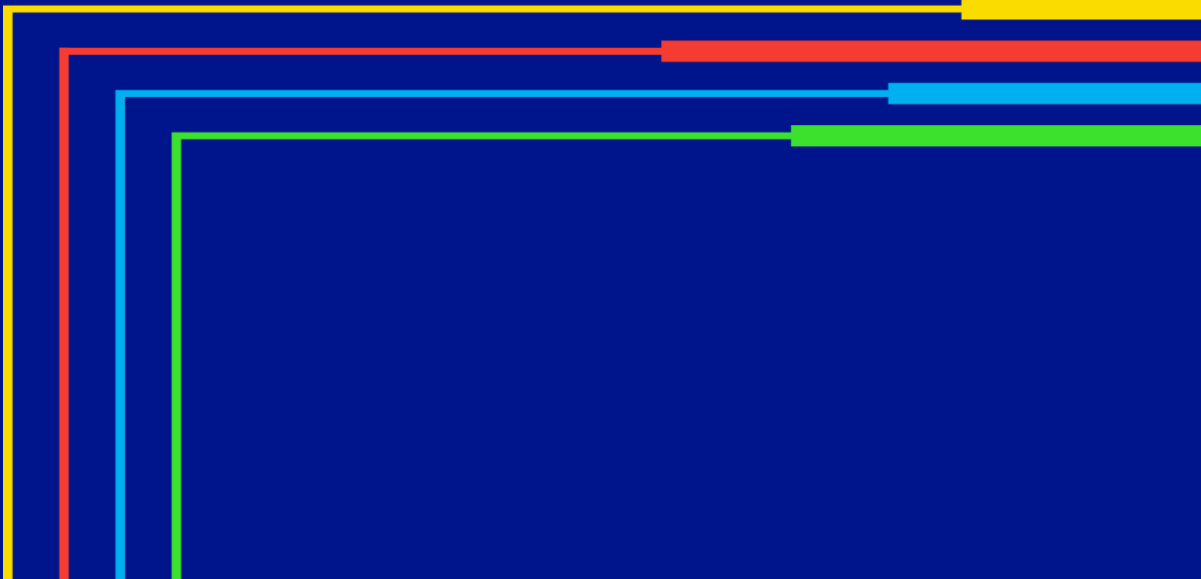
*A. We are typically limited by how the cars & chargers are built. Some don't allow for connectivity or have poor data quality. Sometimes we are limited due to other reasons. We are constantly working to support more.*



# 2

## Residential EV Charging Infrastructure Program

national**grid**



# Residential EV Charging Infrastructure Program: Overview

Rebates are available to help defray the cost to install a charger or upgrade the wiring in your garage or parking area to charge your EV.

- Install a 240-volt circuit for an EV charger
  - Live in a **single-family home**? Rebates up to **\$700**.
  - Live in a **2-4 unit home**? Rebates up to **\$1,400**.
  - Enhanced rebates for customers on National Grid's low-income rate (R-2) or located in environmental justice communities.
- Rebates come with a requirement to enroll in the EV Off-Peak Charging Program
  - Live in a **single family home**? You must enroll in the Off-Peak Charging Rebate Program in order to receive your rebate.
  - Live in a **2-4 unit home**? Customers that are unable to enroll in the Off-Peak Charging Rebate Program may be exempt from that requirement (e.g., the residents share a home charger).

## Questions? Reach out to us.

- **EV Off-Peak Charging Program**

- Program webpage, FAQ, and links to the program's smartphone app: <https://www.nationalgridus.com/Charge-Smart-MA>
- Still have questions? Reach out to us at [chargesmartma@ev.energy](mailto:chargesmartma@ev.energy)

- **EV Charging Infrastructure Program**

- Program webpage, FAQ, and rebate application: <https://www.nationalgridus.com/Residential-EV-Charging-Infrastructure-Program>
- Still have questions? Please email [questions@efi.org](mailto:questions@efi.org) or call 1-800-651-3445.

# Eversource customer?

**Continue to check our webpage for the most up-to-date information on new managed charging program offers:**

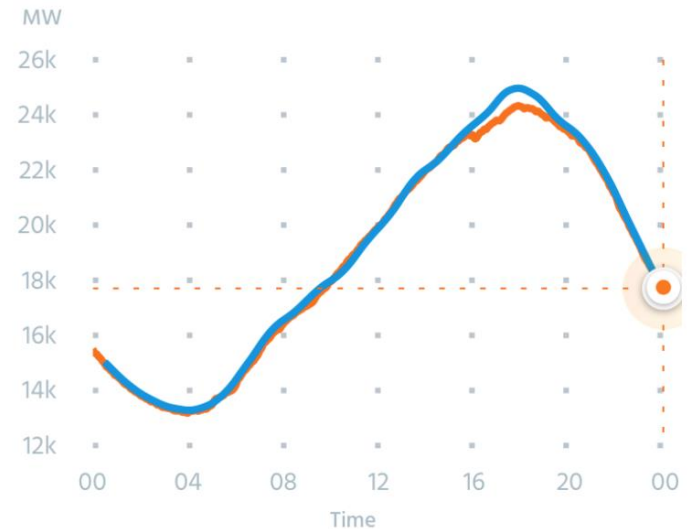
<https://www.eversource.com/content/residential/save-money-energy/clean-energy-options/electric-vehicles/ev-charger-demand-response>



# In the meantime: Sign up for Shave the Peak!

- Green Energy Consumers' program that sends texts or emails on system peak days
- Unplug your car during those peak hours to help the grid!
- Learn more about the electric grid and connect to advocacy opportunities

[greenenergyconsumers.org/shavethepeak](https://greenenergyconsumers.org/shavethepeak)



2022 summer peak: 24,333 MW on Thursday, 8/4 at 5:50pm



# Conclusion

# Concluding Ideas

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- As more and more EVs arrive in Massachusetts, we need to manage electricity load to avoid exacerbating both daily and system peaks.
- Ideally, electric utilities will implement programs to incentivize smart charging behaviors. National Grid has its off-peak charging rebate currently, and more will result from the process that begins in August.
- Even without official smart charging programs, EV drivers today can charge in ways to minimize their impact on the grid.



# How to smart charge on your own

1. Simply unplug your car on peak days!
2. Schedule charging using your vehicle's dashboard (or mobile app, or smart charging station) to begin in the evening regardless of when you plug in.
3. Sign up for Shave the Peak!



[Image source.](#)





# Questions?

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# DONATE

[greenenergyconsumers.org/donate](https://greenenergyconsumers.org/donate)



*Photo Credit: New England  
for Offshore Wind/Chris  
Bennett Photography*



## Mission

Speed the transition to a livable, safe, and low-carbon future



## Programs

Enable consumers to make green energy choices



## Advocacy

Support climate action in Massachusetts and Rhode Island