Building a Smarter, Stronger, Cleaner Energy Future

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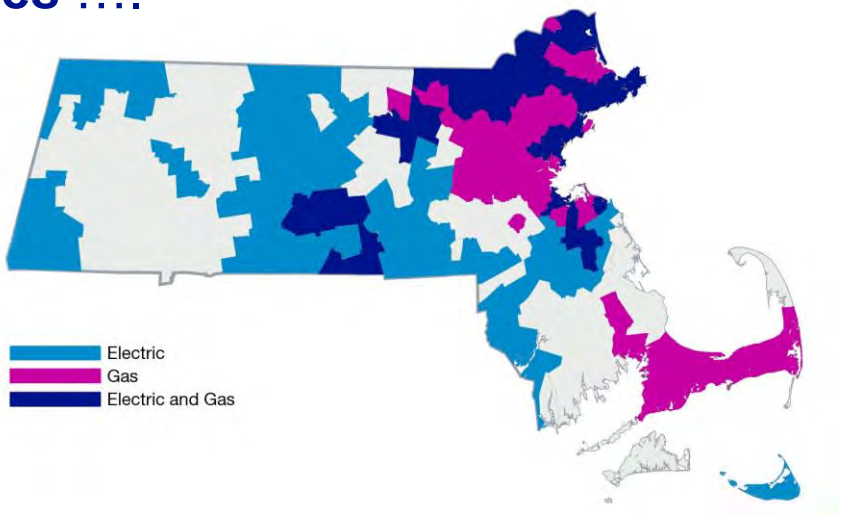
National Grid is taking action to achieve net zero and deliver the fair, affordable and clean energy future to **2.3 million customers** in more than **240 towns and cities** ….



… via our networks…

3K Miles of Electric Transmission & Sub-Transmission	**18K** Miles of Electric Distribution	**~1.3M** Electric Customers
11.2K Miles of Gas Distribution Main	**~3k** Miles of Leak Prone Pipe	**~950K** Gas Customers

… by our teams….

~6,200
Employees

~3,300
Union Employees represented by 15 unions

… making connections...

150+MW Total Distributed Energy Resources connected 2022	**~1,800** EV Chargers enabled to date	**18K+** Heat pumps installed via Mass Save programs in 2022 -- ~30% above goal
2GW DER connected to our network	**~32,000** Additional EV Chargers to be enabled via Phase 3 programs	**45K+** Additional heat pumps targeted to installed via Mass Save by 2024

… and supporting our communities.

13,000+ Hours
of employee volunteerism

$4+ Million
in charitable contributions

Where We Are, Where We're Headed

- **We're On Our Way**. Achieving the Commonwealth's climate and clean power targets is an ongoing success story that's already under way... and there is much more to do.
- **Upgrades Ahead**. It will require an electric network buildout and upgrade at a significant pace and scale, in collaboration with policymakers, customers and communities.
- **Future Forward**. It will require that we transform our capabilities and create a network that's fundamentally smarter, stronger and cleaner than today's system. This future network must:
    - deliver necessary emission reductions
    - enable deployment of new, electrified end-use technologies and clean resources
    - and provide a more individualized, seamless and improved experience for all customers

20 GW
of solar

20 GW
of offshore wind

6 GW
of energy storage

5M
electric vehicles

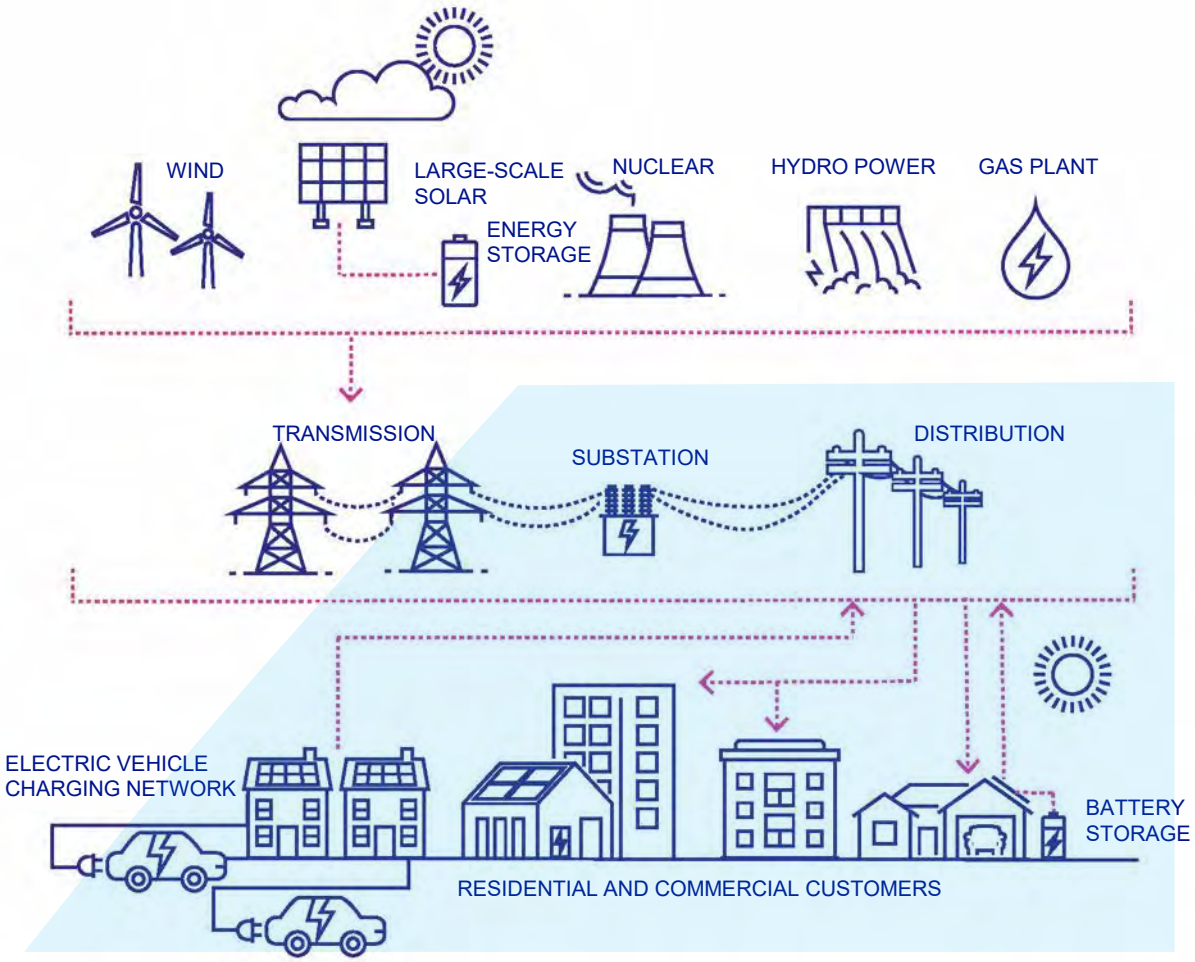
3M
decarbonized buildings

Modernizing Our Energy Systems

Generation

Transmission

Distribution



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We're transforming the one-way grid of the past into a smarter, more resilient two-way electricity super-highway that powers sustainable communities into the future.

Key Drivers to Achieving Net Zero by 2050

Expanding Energy Efficiency

Ensure customers are taking advantage of Energy Efficiency Programs and align programs to meet evolving customer needs

Advancing Smart Electrification

Drive electrification of transport and heat, coupled with smart technologies to optimize potential

Integrating Renewables and Storage at All Levels

Maximize and optimize clean resources and their value

Expanding Energy Efficiency:

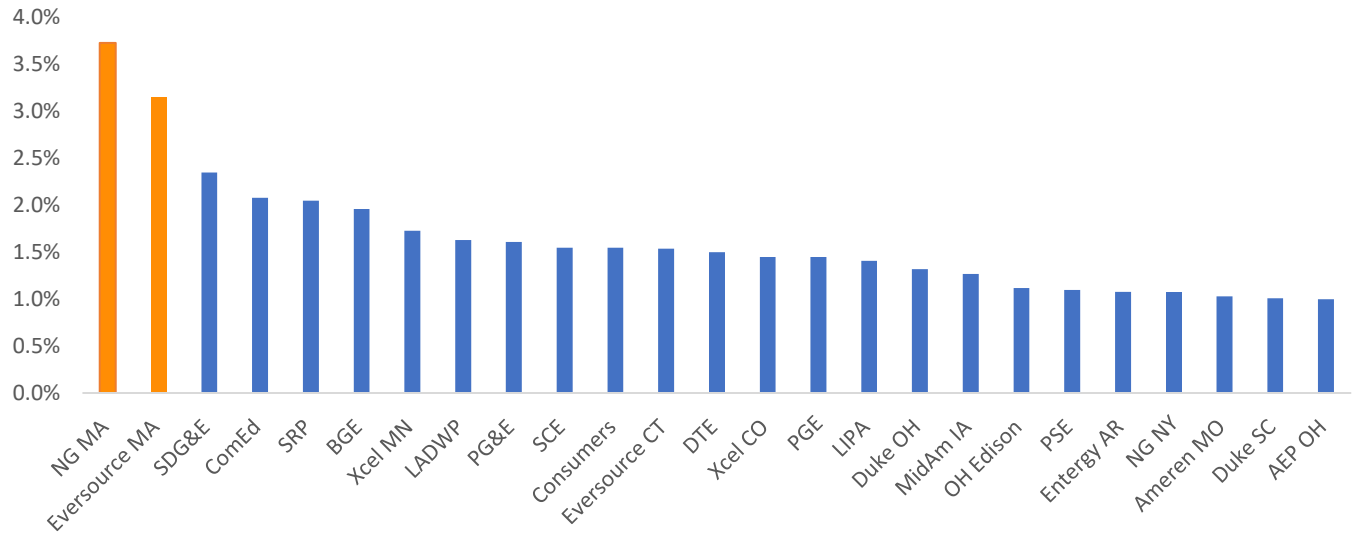
Achieving Emissions Goals and Reducing Costs

MA state scorecard rankings	
2022 Ranking	Years in Top 5
2	14

National Grid-MA utility scorecard rankings	
2017 Ranking	2020 Ranking
1	1

Source: ACCEE State and Utility Energy Efficiency Scorecards

Electric savings as pct of sales (2020)



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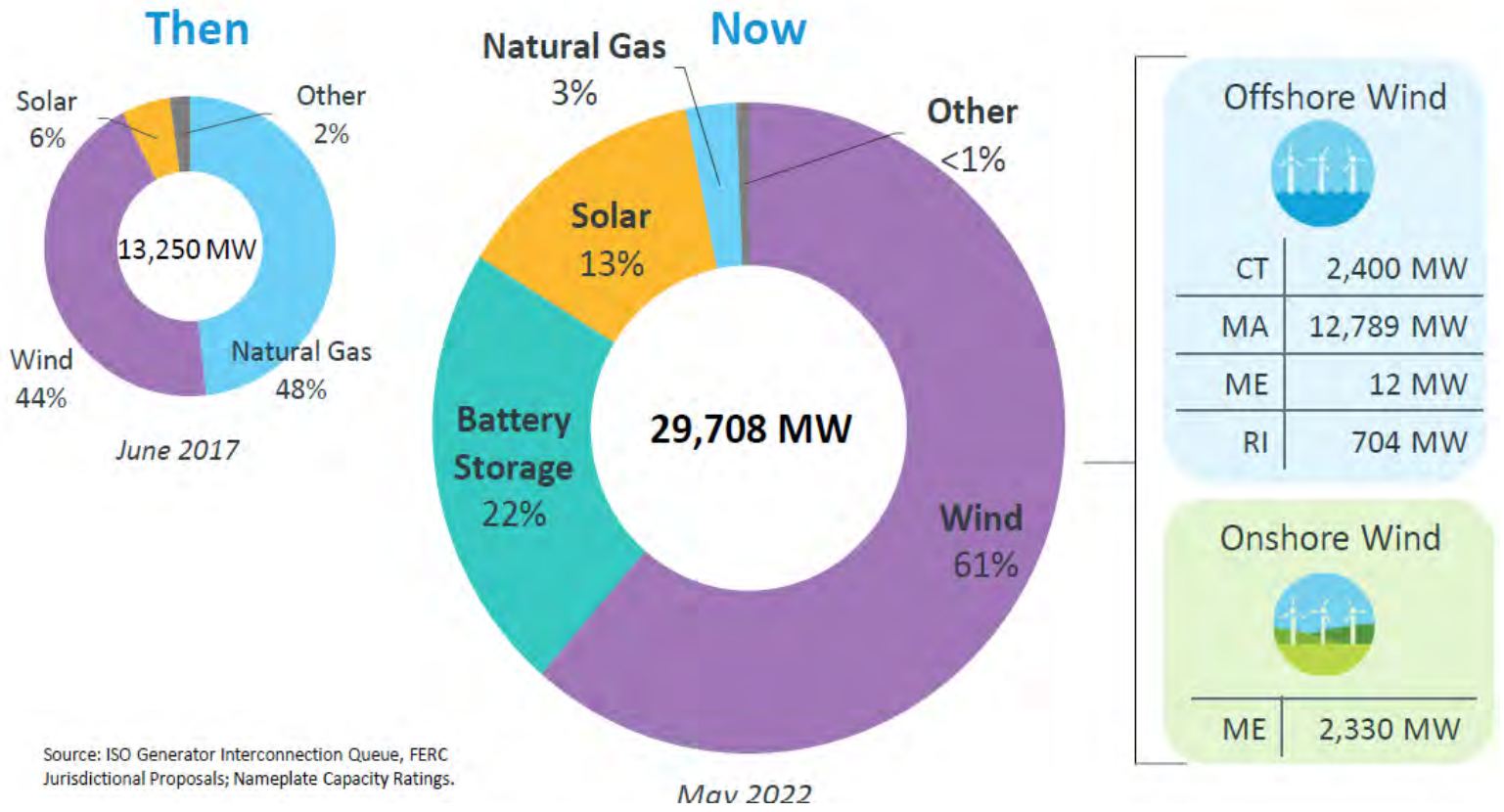
Since 2018, $2.3 billion in benefits have been provided to Massachusetts customers through Mass Save.

Integrating Renewables and Storage:

Making Generation Shifts, in Type and Magnitude



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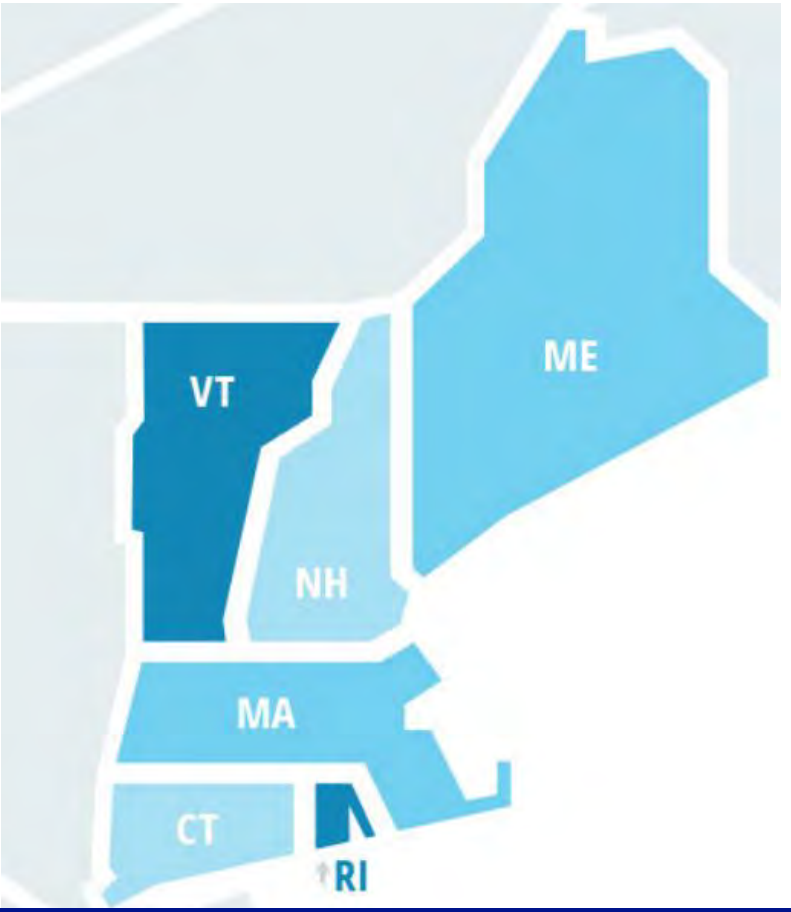
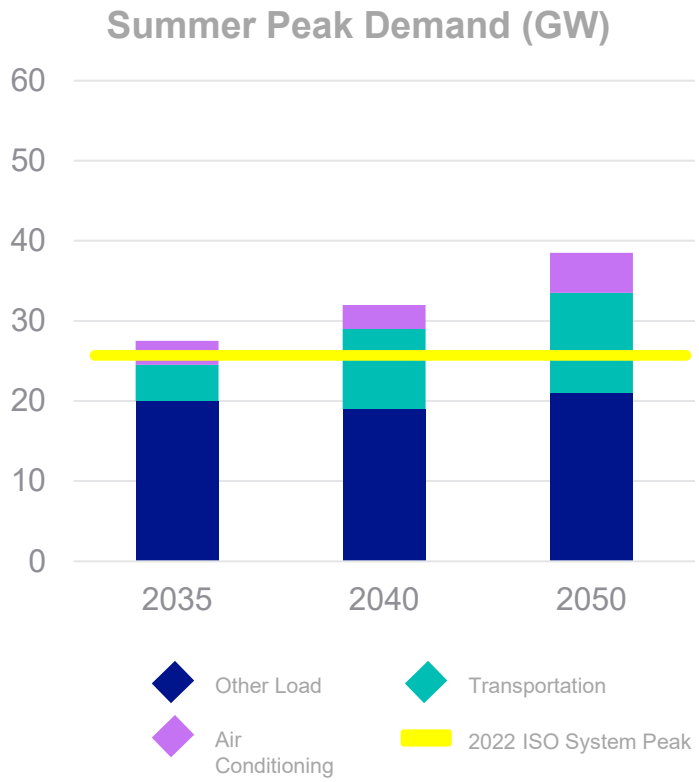
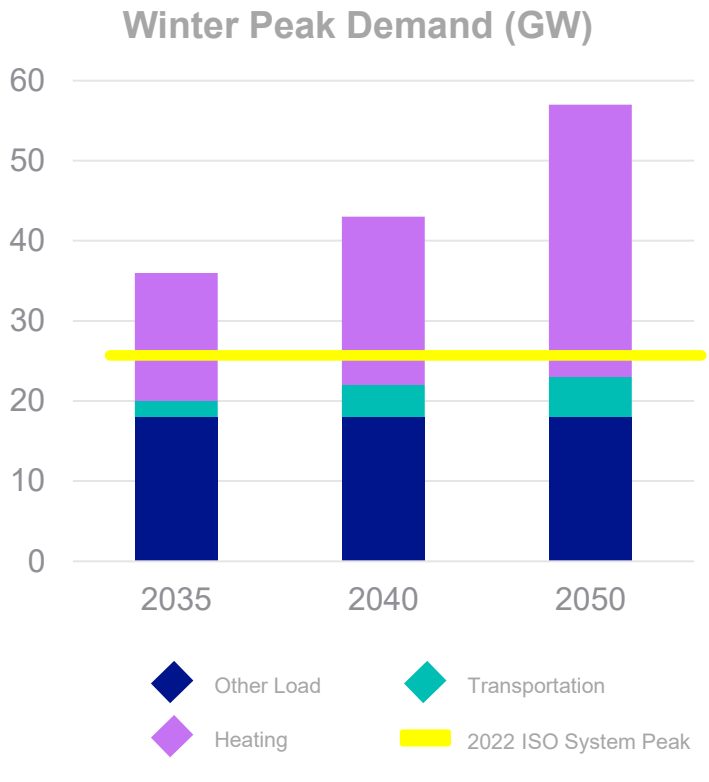
Amount of generation in queue to be studied for interconnection has doubled over the past five years, with a shift from fossil-fuel generation to renewable generation, which has implications for the electric grid.

Advancing Smart Electrification:

Meeting Doubled Peak Demand, Seasonal Shifts







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Draft study results indicate 50% of the New England Transmission System will need to be upgraded to accommodate 2050 demand, while the Commonwealth estimated that electric load in Massachusetts will increase 2.5-fold as compared 2020.

The Commonwealth Is Taking Action Today

Through legislation and regulation, the Commonwealth has:

- Established emissions reduction and clean energy technology targets
- Enabled utilities to take steps to modernize the grid and deploy automated metering infrastructure
- Advanced electric vehicle charging
- Supported deployment of distributed solar, energy storage and advanced offshore wind through targets and programs
- Increased the efficiency of homes and buildings, heat pump adoption and building electrification through codes, standards and programs

Utilities are implementing these policies and plans, and those being driven by the federal government and the ISO-NE and are working to align investments accordingly.

What is the ESMP?

In conjunction with the other utilities, each Investor Owner electric utility is required develop an electric-sector modernization plan (ESMP) to proactively upgrade the distribution and, where applicable, transmission systems to meet the Commonwealth's climate goals

Prepare and use three planning horizons - 1) a 5-year forecast, 2) 10-year forecast and 3) a demand assessment through 2050

Establishes a Grid Modernization Advisory Council (GMAC), who will review the plans and provide advice and guidance to the utilities and the DPU. Its remit is "to encourage least-cost investments in the electric distribution systems, alternatives to the investments or alternative approaches to financing investments that will facilitate the achievement of the statewide greenhouse gas emission limits."

Submit the first plan for review, input and recommendations to the GMAC by September 1, 2023.

The company files the plan with the department by end of January, 2024, and the department shall approve, approve with modifications or reject the plan within 7 months of submittal.

Our Plan must:

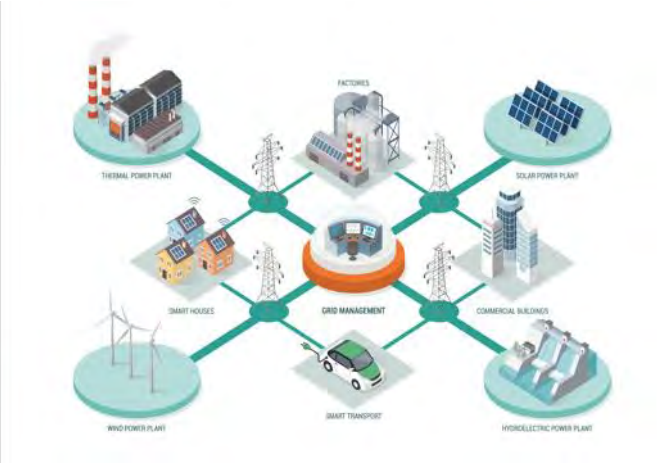
i. improve grid reliability, communications and resiliency;
ii. enable increased, timely adoption of renewable energy and distributed energy resources;
iii. promote energy storage and electrification technologies necessary to decarbonize the environment and economy;
iv. prepare for future climate-driven impacts on the transmission and distribution systems;
v. accommodate increased transportation electrification, increased building electrification and other potential future demands on distribution and, where applicable, transmission systems; and
vi. minimize or mitigate impacts on the ratepayers of the commonwealth.

Result in a Smarter, Stronger, Cleaner Grid

A Ready, Robust and Secure Network

Ensures the network is one step ahead of developer needs and customer adoption

Reinforces the network and leverages technology to drive reliability and resilience



A Flexible and Dynamic Energy System

Leverages distributed resources to meet need, solve grid problems and provide grid resiliency

Customer Empowerment and Action

Provides customers with information and enables options so they can pursue the best solutions for them and the environment

The Electric Sector Modernization Plan:

Delivering Outcomes and Solutions

Investments	Outcomes and Capabilities
Flexibility assets such as FLISR, reclosers and the supporting IT infrastructure to drive automation	Make the network increasingly autonomous to shorten the duration and reduce the overall number of outages, bolstering resiliency
Fiber-based communication standards, advanced physical and digital security standards, and other grid modernization technologies	Drive increased security of network assets to reduce the risk to customers of network outage from physical disruptions and threat actors
System capacity expansion and hardening, including additional substations and distribution feeders	Interconnect and integrate renewable and clean generation, energy storage and electrified transportation — while maintaining system reliability in the face of a changing climate
Customer-facing portals that provide access to information and new programs like smart tariffs and time-of-use tariffs	Drive cost savings and grid flexibility by enabling options like intelligent charging for EVs, incentives for heat pump adoption and use of smart appliances

Additional Policy Actions Needed to Deliver Outcomes

Accelerate investment to modernize and optimize the electric network to connect renewables, enable electrification, and build resilience to a changing climate

Expand energy efficiency strategies and programs to increase customer adoption and help decarbonize all homes and businesses

Implement new policies to help decarbonize heat for buildings and industry and help enable innovative clean energy options

Ensure families and businesses can afford their energy bills and easily access energy savings and assistance programs

Train our local workforces to secure jobs in the clean energy economy; provide opportunities to diverse businesses and help secure a home-grown supply chain

Thank You

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