Building a Smarter, Stronger, Cleaner and More Equitable Energy Future

Future Investments and Policy Changes

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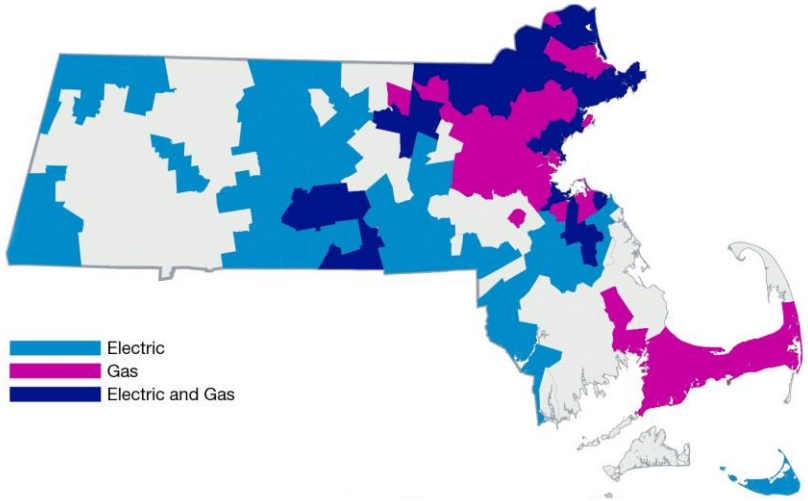
National Grid is taking action to achieve net zero greenhouse gas emissions and deliver the fair, affordable and clean energy future to **2.3 million customers** in more than **240 towns and cities** ….



… 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….

~6,500
Employees

~3,300
Union Employees represented by 15 unions

… making connections...

200MW 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.

14,500+ 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 – in some cases, more than 75X the amount we support today, and
    - provide a more individualized, seamless and improved experience for all customers

23 GW
of solar

26 GW
of offshore wind

6 GW
of energy storage

5M
electric vehicles

3M
decarbonized buildings

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."

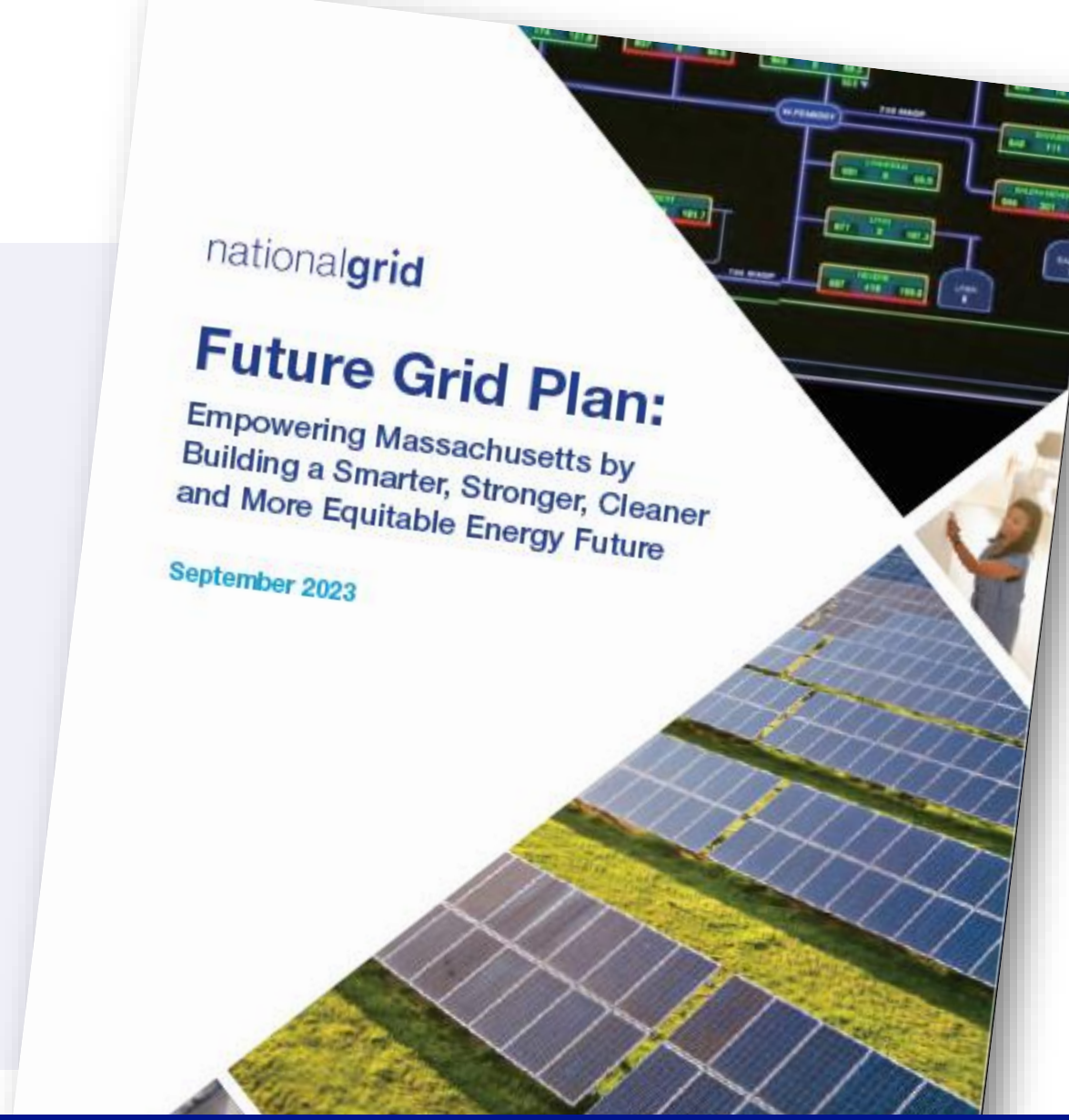
Submit the first plan for review, input and recommendations to the GMAC by September 1, 2023.

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.

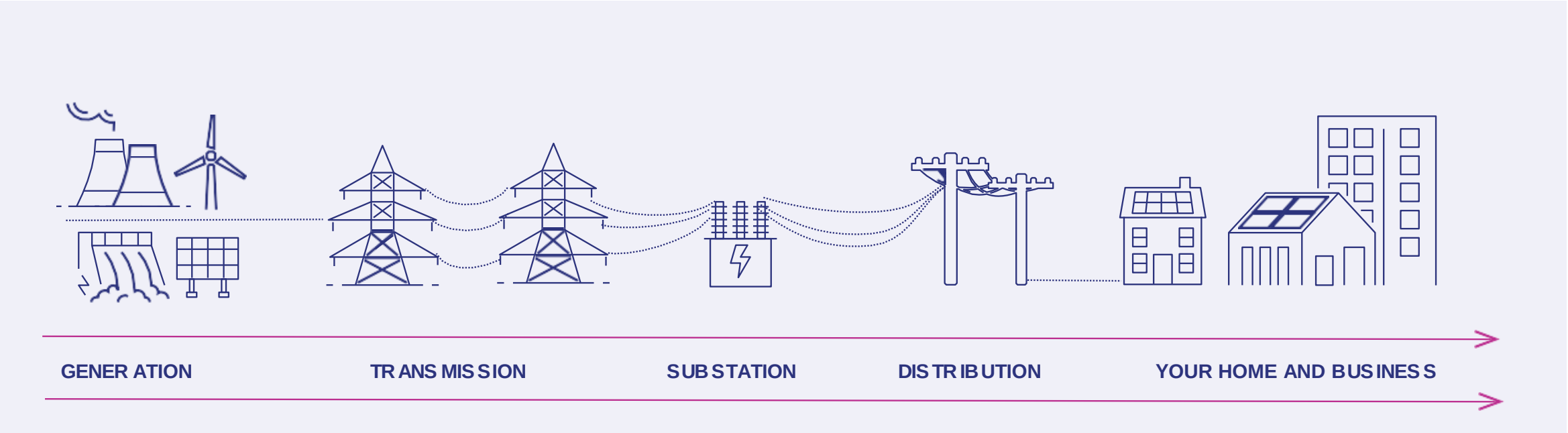
Our Plan must:

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.

An Overview of National Grid's Future Grid Plan: Outcomes and Investments



Yesterday's Grid…



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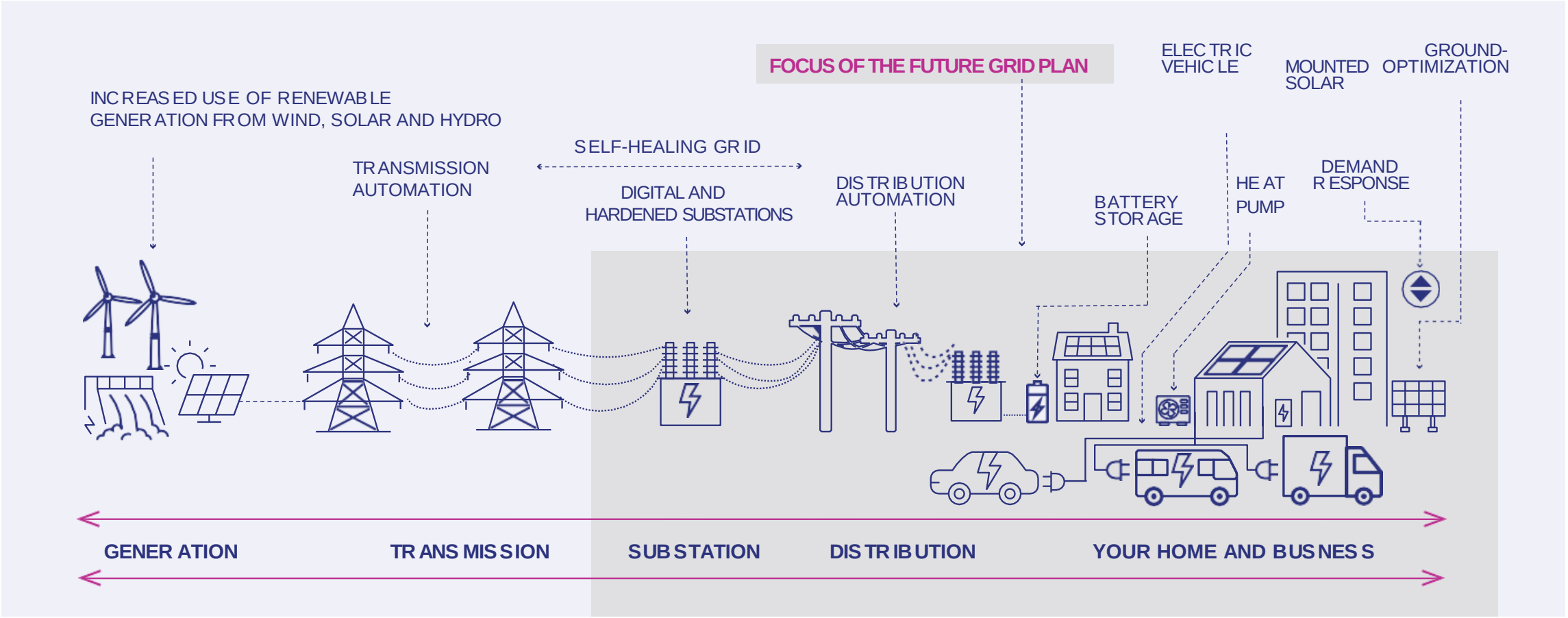
A reliable, one-way system that moved electricity from large power generating facilities, many of which ran 24X7, to homes and businesses, which used that electricity in a predictable way.

The Future Grid: Smarter, Stronger, Cleaner



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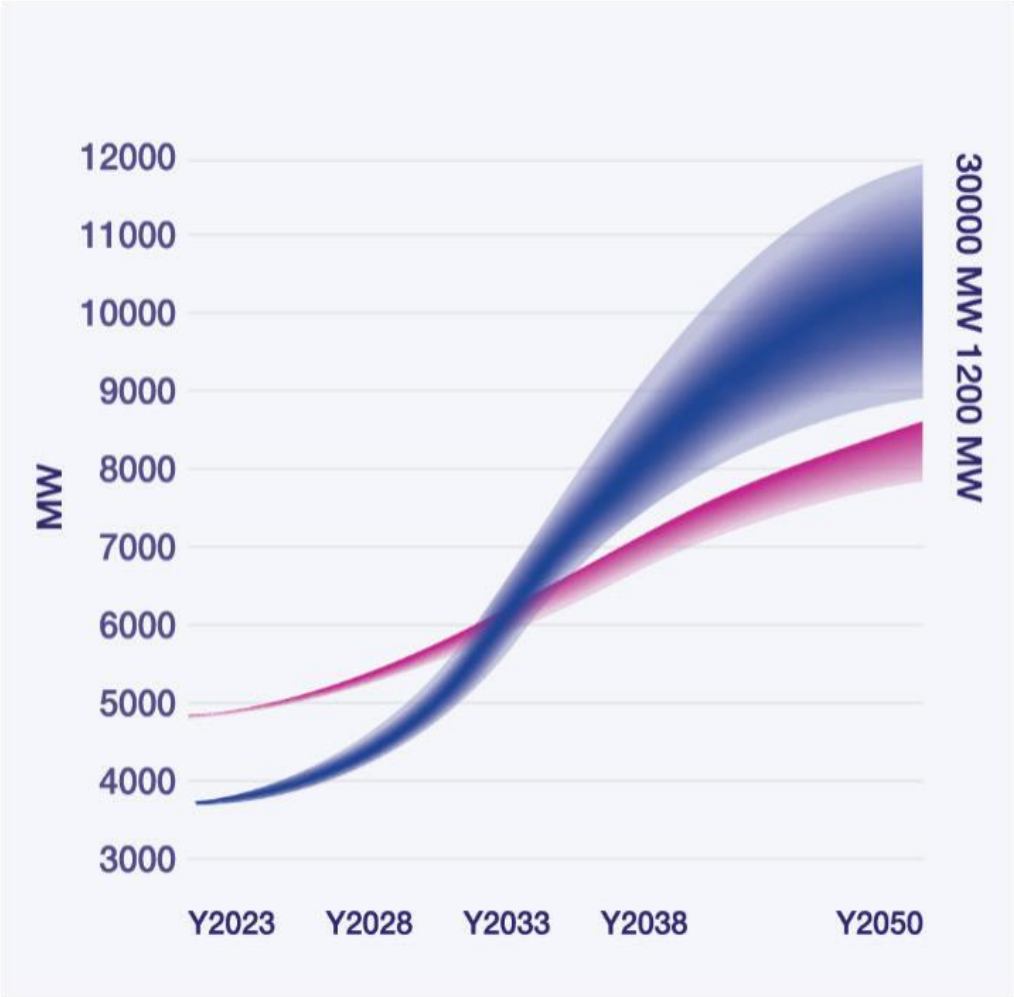
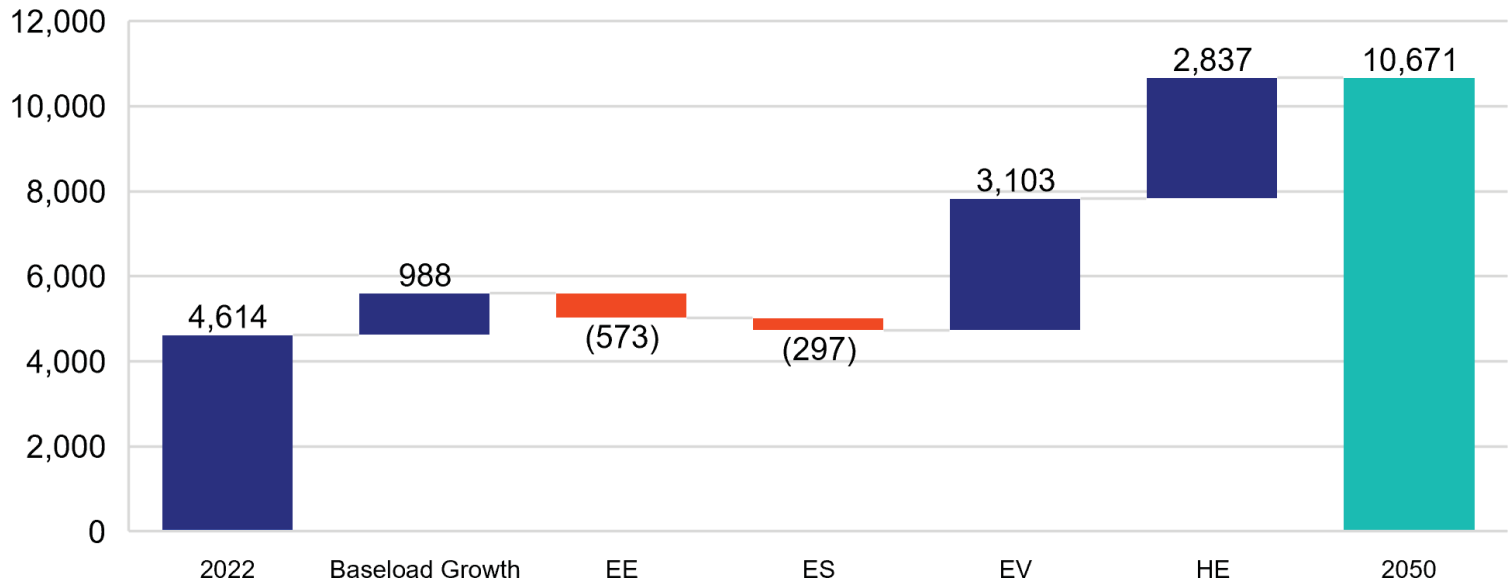
A two-way, super highway that moves electricity from larger, renewable power generating facilities, many of which run intermittently, to homes and business, which are also generating electricity from smaller distributed sources and putting that power back onto the grid.

Meeting Doubled Peak Demand, Seasonal Shifts



Annual peak load growth through 2050 by components



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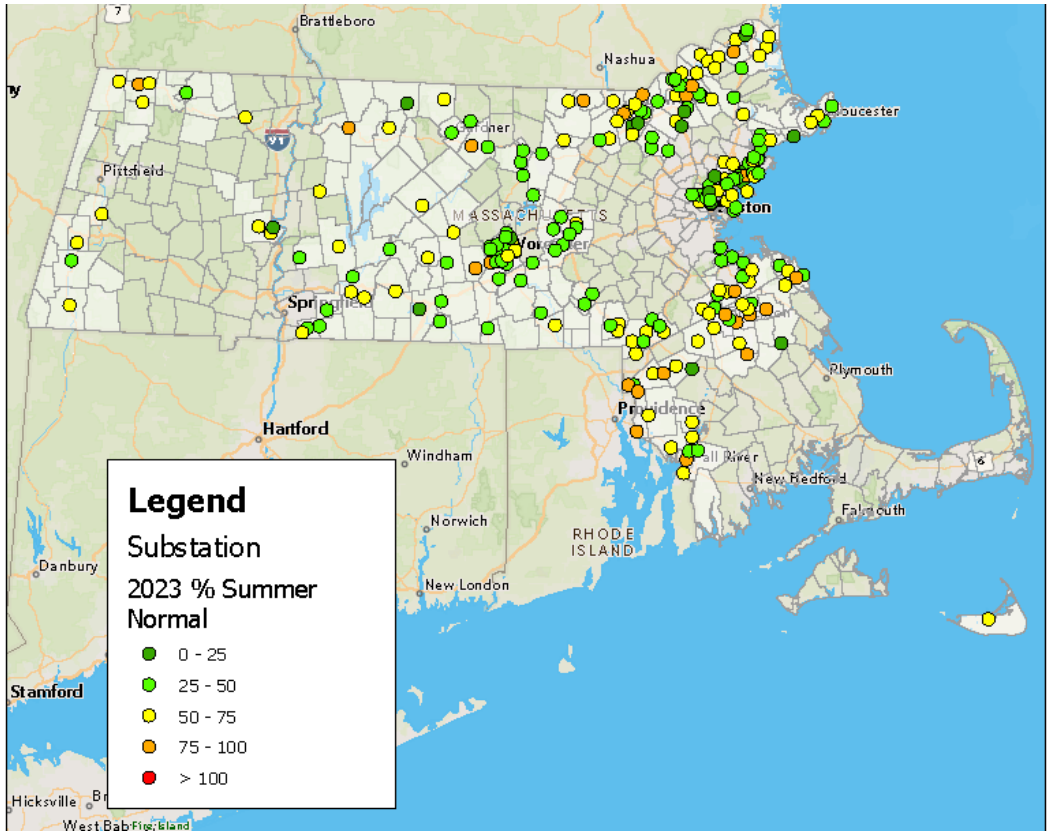
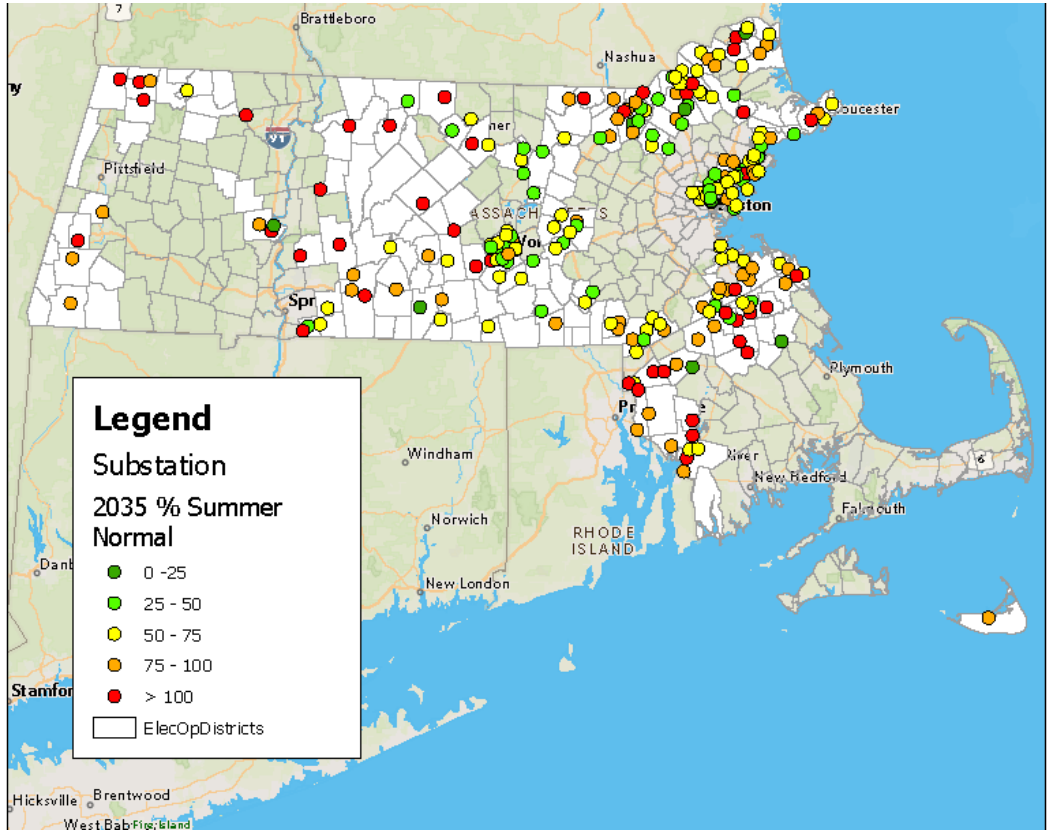
Our Future Grid Plan will create the capacity to support growing demand, manage seasonal shifts and establish a reliable and resilient foundation to carry the energy needs of nearly the entire economy as we become more and more reliant on the electric network to power all aspects of our lives.

Anticipating Substation Loads





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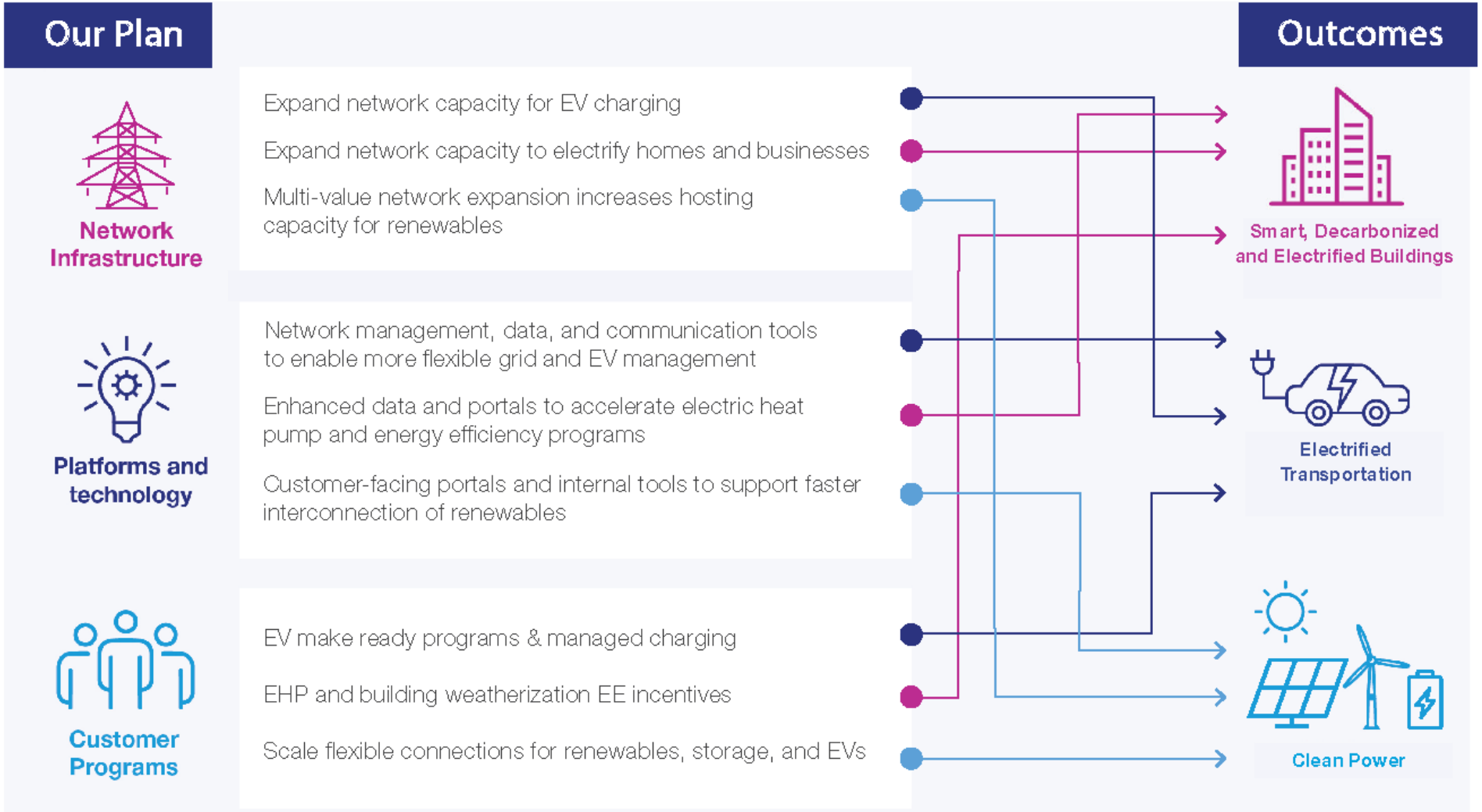
Absent investment to expand the capacity of our system, many regions will not be able to connect new load or local, clean energy resources, like solar and storage.

Proposed Investments, Actions and Outcomes



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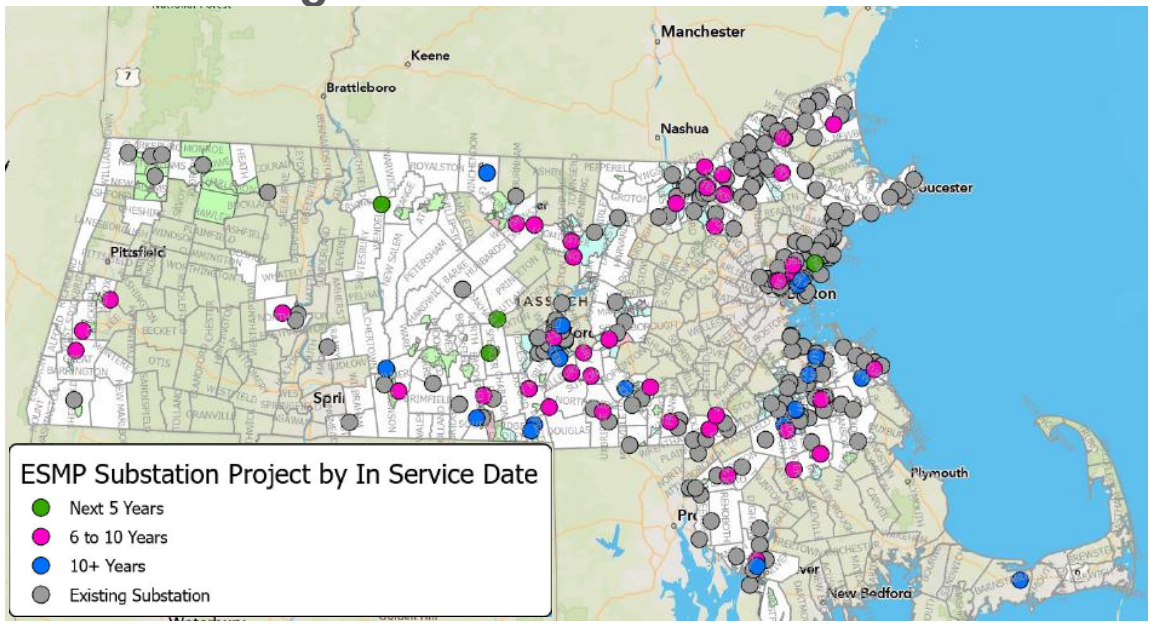
National Grid's Future Grid Plan proposes ~$2B in investments in three key areas over the next five years to meet the Commonwealth's climate and clean energy goals, deliver a smarter, stronger, cleaner and more equitable energy future and ensure there is sufficient capacity to accommodate economic growth.

Focus on Network Infrastructure Proposed Investments

To address projected asset overloads resulting from forecasted load growth and to increase system capacity, the following investments are proposed*:

In the past 5 years…	In the next 10 years…	2035 – 2050
0% Average System Load Growth	21% Load Growth (from 2022)	100% Load Growth (from 2022)
Upgraded 11 existing substations	Upgrade 17 existing substations	Upgrade 44+ existing substations
Built 3 new substations	Build 28 new substations	Build 26+ new substations
Added 20 feeders	Add 137 feeders	Complete 86 total projects

Existing & Future ESPM Substations



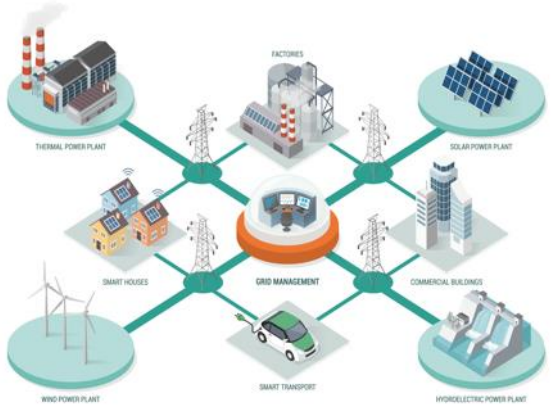
*Non-Wires alternatives are being considered as "avoided infrastructure" and as a "bridge to wires," including Virtual Power Plants and DR.

Future Grid Plan: Empowering Customers and Communities

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

Advances smart electrification by leveraging distributed and customer-owned resources to meet growing demand, 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

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

Where is Policy Playing Out over the Next 6-18 Months

Regulatory

Electric Sector Modernization Plan

Dept. of Public Utilities

Comprehensive plan outlining proactive distribution system upgrades needed to meet future demand and the Commonwealth's climate goals.

Docket 20-80

Dept. of Public Utilities

Investigation into the role of gas local distribution companies as the Commonwealth seeks to achieve its target 2050 climate goals.

Clean Heat Standard

Dept. of Environmental Protection

Would require heating energy suppliers to replace fossil heating fuels with clean heat over time by implementing clean heat or purchasing credits.

MECO Rate Case

Dept. of Public Utilities

Details the strategic infrastructure investments and programs needed to reinforce the electric system and enhance service for customers while providing transparency and bill predictability.

Legislative

Permitting Reform

Jt. Committee on Telecommunications, Utilities & Energy

H.3215 would implement citing and permitting changes to remove barriers to responsible clean energy infrastructure development.

Renewable Heat Standard

House Committee on Ways & Means

H.2938 would require sellers of natural gas to reduce their carbon footprint through procurement of qualifying renewable natural gas, renewable hydrogen, and useful thermal energy from renewable thermal resources.

Thank You

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