# NECPUC Retail DR Working Group Discussion

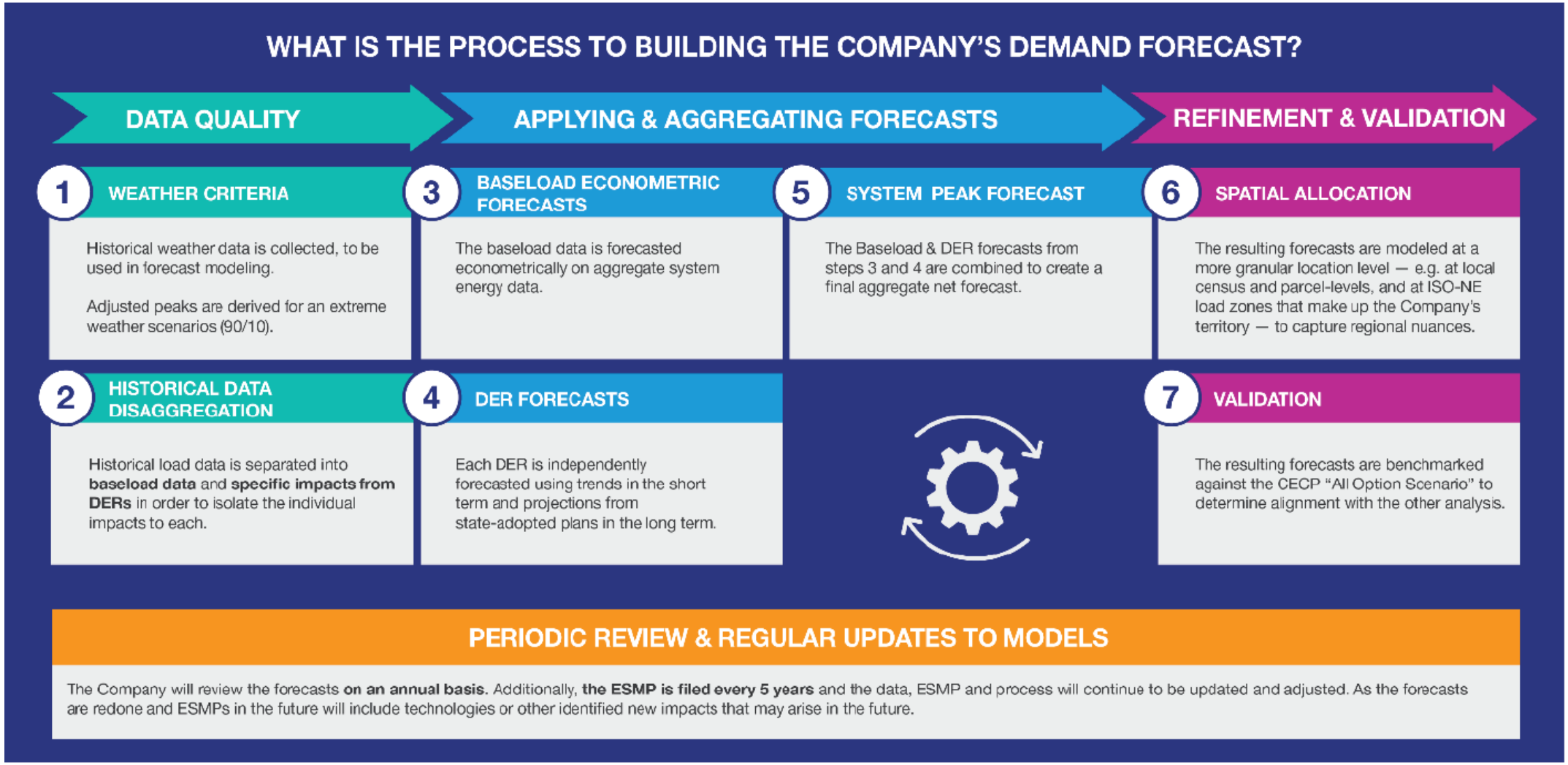
*Demand-side considerations for winter peaking challenges*

*March 29th, 2024*

nationalgrid

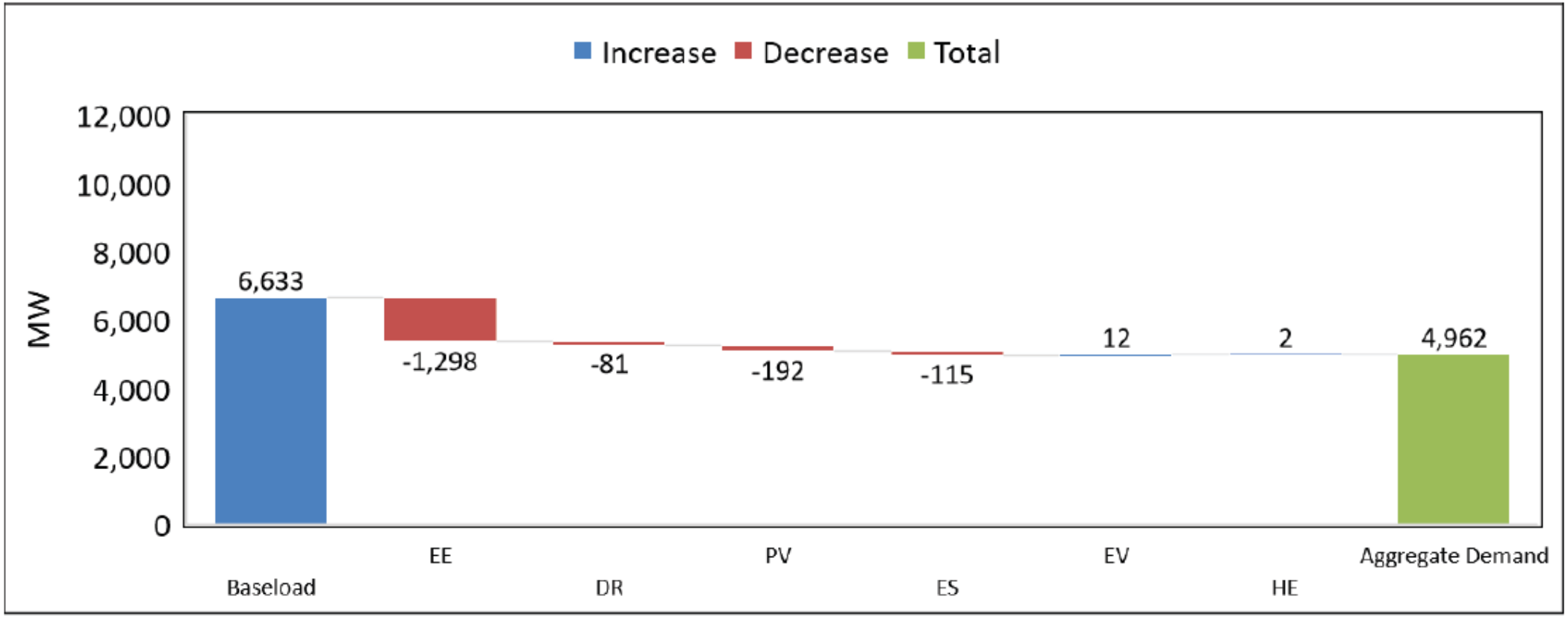
# How does National Grid forecast peak electric demand?

*MA-specific process*



# DER impacts are fully integrated into the forecasting process, which informs planning process

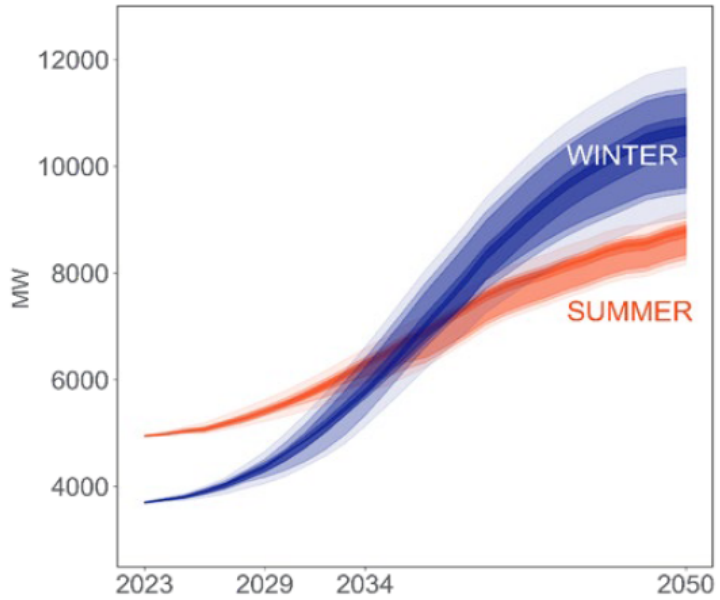
*National Grid MA Aggregate Peak Load by Components in 2022*



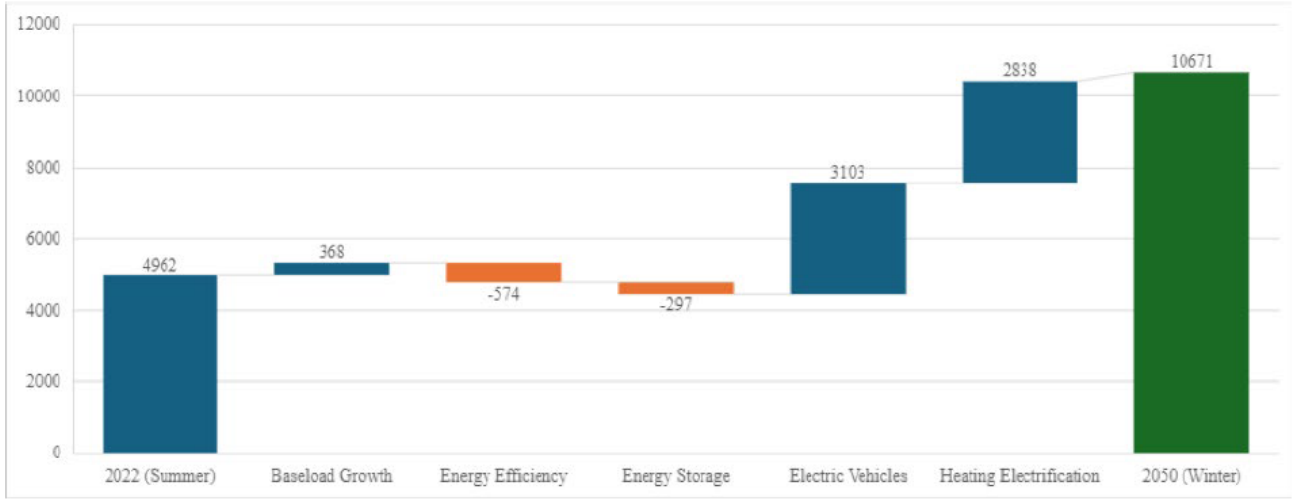
# EV and heat electrification growth drive doubling of peak demand by 2050; shift to winter peak in mid-2030s

*National Grid MA Territory*

| | | | | | |
|---|---|---|---|---|---|
| Our State's Goals by 2050 | 23 GW of solar | 20 GW of offshore wind | 6 GW of energy storage | 5M electric vehicles | 3M decarbonized buildings |
| National Grid's Portion of the goals | 10 GW of solar | | 2.5 GW of energy storage | 2.7M electric vehicles | 1.1M decarbonized buildings |




*Annual peak load growth through 2050 by components*



# What programs do we offer in MA today to demand-side resources to help mitigate peak load growth?

| Program | Summary | Link |
|---|---|---|
| Energy Efficiency rebate programs | Incentives to customers to install measures that improve the energy efficiency of their homes or businesses | https://www.nationalgridus.com/ma-home/energy-saving-programs/ |
| Demand Response programs | Incentives to customers to reduce peak load (residential thermostats, batteries, C&I technology-agnostic curtailment) | https://www.nationalgridus.com/MA-Home/Energy-Saving-Programs/ConnectedSolutions |
| EV managed charging program | Enrollment incentive and rebates to customers for charging during off-peak hours (9pm – 1pm, M-F) | https://www.nationalgridus.com/electric-vehicle-hub/Programs/Massachusetts/Off-Peak-Charging-Program |

# How can we “bend the curve” with demand-side resources to mitigate future winter peaking challenges?

1) **Continuation of EE programs (e.g. weatherization) to permanently reduce peak load**

2) **Drive more adoption and program enrollment of flexible DERs (e.g. BTM storage) that could support load flexibility for future winter peaks through:**

   a) Continued growth of system-wide DR and EV managed charging programs

   b) Generac Grid Services DOE Grant project – provide 2K heat pumps, thermostats and batteries to income-eligible customers to mitigate peak demand during summer *and* future winter peaks (across MA w/ other utilities)

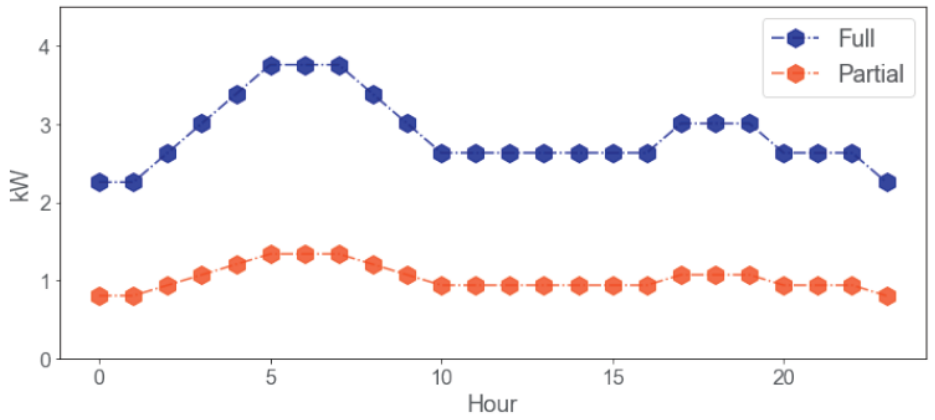
   c) New local grid services / VPP offerings to leverage customer and third party DER flexibility to help address distribution grid constraints (proposed in National Grid’s Future Grid Plan)

3) **Price signals via time-varying rates**

4) **Future cost-effective winter DR**

5) **Explore innovative technologies (e.g. thermal storage)**

*Exhibit 8.6: Typical Winter Day for EHPs*



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