

**COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC UTILITIES**

**Petition of Massachusetts Electric Company and
Nantucket Electric Company, each d/b/a National
Grid, pursuant to G.L. c. 164, § 94 and
220 CMR 5.00, for Approval of a General Increase
in Base Distribution Rates for Electric Service and
a Performance-Based Ratemaking Plan.**

D.P.U. 23-150

**Surrebuttal Testimony of
Melissa Whited
On Behalf of
The Department of Energy Resources**

May 3, 2024

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1 **I. INTRODUCTION**

2 **Q. Please state your name, title, and employer.**

3 A. My name is Melissa Whited. I am a Vice President at Synapse Energy Economics
4 (Synapse), located at 485 Massachusetts Avenue, Cambridge, MA 02139.

5 **Q. Have you previously submitted testimony in this proceeding?**

6 A. Yes. I submitted direct testimony in this proceeding on behalf of the Massachusetts
7 Department of Energy Resources (DOER) on March 29, 2024.

8 **Q. What is the purpose of your surrebuttal testimony?**

9 A. The purpose of my testimony is to address National Grid's (the Company) rebuttal
10 testimony regarding an electrification rate and the Company's proposed Infrastructure,
11 Safety, Reliability & Electrification (ISRE) cost recovery mechanism.

12 **II. ELECTRIFICATION PRICING PROPOSAL**

13 **Q. Have your primary conclusions regarding the Company's proposed Electrification**
14 **Pricing proposal changed since you submitted direct testimony?**

15 A. No. I continue to recommend that the Department reject the Company's Electrification
16 Pricing proposal. There is widespread agreement among intervenors and even the
17 Company that the Electrification Pricing proposal is flawed. Specifically, other
18 intervenors in this proceeding argue that the Company's Electrification Pricing proposal
19 should be rejected because it sends poor price signals that would increase inefficient

1 consumption;¹ is inequitable;² will not help to prepare customers for a transition to time-
2 varying rates;³ and is not based on cost causation principles.⁴ The Company itself states
3 that it “agrees with the intervenors that the proposed Electrification Pricing option is not
4 perfect and may pose risks the Department determines to be unacceptable.”⁵

5 **Q. How does the Company respond to your proposal to implement a seasonal rate**
6 **design similar to Central Maine Power’s heat pump pricing as an alternative?**

7 A. The Company states that it hesitates to recommend such a rate for practical reasons.
8 Specifically, the Company notes that although its distribution system is currently summer
9 peaking, as heat electrification increases, peaks will shift to the winter months.⁶

10 **Q. Is the Company’s argument a valid reason for not implementing a seasonal rate?**

11 A. No, for several reasons. First, according to the Company’s Electric Sector Modernization
12 Plan (ESMP), the Company will not become winter peaking until 2036 – more than a
13 decade from now.⁷ Even then, many feeders will still be summer-peaking.⁸ In such a

¹ Direct Testimony Castiglieo, at 30 and Direct Testimony of Nelson and Palmer, at 40, 46, 66.

² Direct Testimony Castiglieo, at 71-73.

³ Direct Testimony Bride and Nutter, at 40 and Direct Testimony of Nelson and Palmer, at 39-42.

⁴ Direct Testimony of Nelson and Palmer, at 39-42.

⁵ Exhibit NG-CP-Rebuttal-1, at 45.

⁶ Exhibit NG-CP-Rebuttal-1, at 47-48.

⁷ National Grid. Electric Sector Modernization Plan. D.P.U. 24-11.Exhibit 7: ELF Report – Peak, at 5. Available at <https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/18552719>.

⁸ Per the Company’s forecast, “About 77% of the forecasted feeders are expected to switch to a winter peaking system by 2050. The majority of the switch is expected to occur in the late 2030s and beyond.” National Grid. D.P.U. 24-11. Electric Sector Modernization Plan.

1 scenario, a cost-based rate would allocate distribution system demand-related costs
2 relatively equally across the seasons (in proportion to the seasonality of feeder or
3 substation peaks). However, this does not describe the grid of today, where summer peak
4 demands are driving the need for additional distribution system capacity.

5 Second, by 2036, National Grid will have completed its implementation of advanced
6 metering infrastructure (AMI), and customers will ideally have the option to enroll in
7 time-varying rates, which may have a seasonal component. Time-varying rates will
8 enable customers to access low rates during off-peak periods, regardless of the season.
9 Such advanced rates can help support continued electrification while providing even
10 more accurate and cost-based price signals. For these reasons, the Company's hesitation
11 regarding implementing a seasonal rate should be disregarded.

12
13 **Q. Have you modified any of your recommendations regarding implementation of a**
14 **rate design to promote beneficial electrification?**

15 A. Yes. EDF-CLF Witness Castigliego correctly points out that the Company's
16 Electrification Pricing proposal fails to incentivize customers to manage usage efficiently
17 and shift electricity use to outside peak hours, potentially increasing peak load and stress
18 on the grid.⁹ This is a concern not only for the Company's Electrification Pricing

Exhibit 6: ELF Report – Feeder. January 2024. Available at
<https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/18552719>.

⁹ Direct Testimony Castigliego, at 30.

1 proposal but for any rate that supports load growth without also providing a time-varying
2 price. To address this, I recommend that the Department direct the Company to market its
3 off-peak charging program to customers who enroll in an electrification rate.

4 **Q. Many customers who enroll in an electrification rate may not have electric vehicles.**
5 **Do you still propose that National Grid market its off-peak charging program to**
6 **these customers?**

7 A. Yes. Customers who enroll in an electrification rate because they install a heat pump may
8 also be considering purchasing or leasing an electric vehicle now or in the near-future.
9 The ability to reduce their charging costs through enrollment in the off-peak charging
10 program could influence these customers' decisions to purchase or lease a vehicle, as
11 well as their future charging behavior.

12 **III. ISRE MECHANISM**

13 **Q. Have you modified any of your conclusions or recommendations regarding the**
14 **ISRE mechanism?**

15 A. Yes. In my direct testimony, I proposed that the Department require the Company to
16 recover its capital costs through the PBR mechanism, rather than through a separate
17 tracker (i.e., the ISRE mechanism). The goal of including capital costs in the PBR cap
18 was to increase the Company's incentives to control costs by allowing it to retain a
19 portion of any cost savings it achieves. However, determining the level of capital cost
20 recovery to allow through a PBR mechanism is fraught, particularly in an era of
21 unprecedented capital expenditures. An external index-based revenue adjustment

1 mechanism is likely inadequate to support the magnitude of expenditures that is required,
2 yet basing a revenue adjustment formula (or even a total budget cap) on the Company's
3 investment forecast is also problematic due to information asymmetry. Specifically, other
4 intervenors¹⁰ and my own review of the Company's proposed investments raise concerns
5 that the Company's cost forecasts are unreliable and inflated.

6 Because neither an index-based formula or a forecast-based mechanism are satisfactory, I
7 recommend that the Department consider an alternative to PBR at this time and move to a
8 capital cost tracker with an annual review and approval process similar to that in place in
9 Rhode Island, which was described by the Company in response to discovery.¹¹

10 **Q. Can you provide some examples of specific concerns regarding the Company's cost**
11 **forecasts being overstated?**

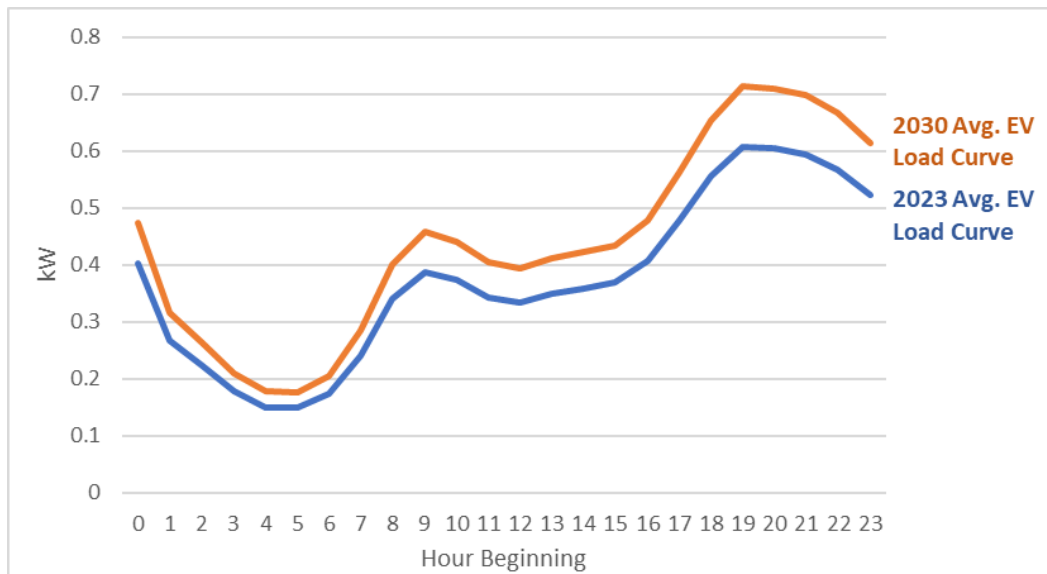
12 A. Yes. For example, the Company appears to ignore the potential for future rate design or
13 utility programs to shift EV charging to off-peak hours. Instead, the Company assumes
14 the same general load shape for light-duty electric vehicles in 2023 and 2030, as shown in
15 the following figure.¹²

¹⁰ Exhibit AG-WG-1 at 40-71; Exhibit EDF-CLF-JRC-1 at 23.

¹¹ DOER-3-13 (f).

¹² Synapse analysis based on data provided in response to DOER-3-11.

Figure 1. National Grid Assumed Light-duty EV Load Curve



Source: Synapse analysis based on data provided in response to DOER-3-11

The Company's assumed light-duty EV charging largely coincides with the timing of feeder peak demand. From 2021-2023, 97 percent of feeder peaks occurred during the hours of 10 am – 8 pm, which is when the Company expects most EV charging to occur.¹³ There is no reason that this should be true if the Company successfully enrolls customers in its off-peak charging program or in future time-varying rates. Data from

¹³ The Company forecasts that 53 percent of EV charging will occur during the hours of 10 am and 8 pm.

1 California show that EV customers are highly responsive to time-varying rates, with at
2 least 85 percent of charging outside of peak hours.¹⁴

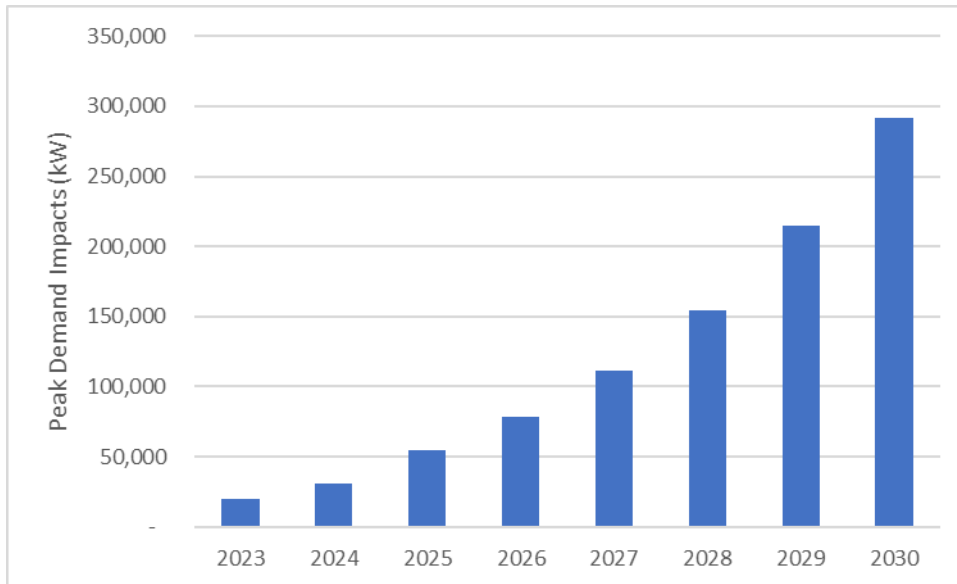
3 **Q. Why does it matter that EV charging could be shifted to off-peak hours?**

4 A. The Company forecasts that EVs will increase demand significantly between now and
5 2030, reaching nearly 300 MW of additional peak demand by 2030.¹⁵ Such an increase in
6 peak demand could necessitate substantial investments in distribution system
7 infrastructure. However, as discussed above, this forecast is likely overstated, as National
8 Grid appears to have ignored the potential for time-varying rates or other programs to
9 reduce this demand.

¹⁴ Frost, Jason; Whited, Melissa; Allison, Avi. Electric Vehicles Are Driving Electric Rates Down. Synapse Energy Economics. June 2020. Available at https://www.synapse-energy.com/sites/default/files/EV_Impacts_June_2020_18-122.pdf.

¹⁵ Analysis of data provided in Attachment DOER-3-11.

1 **Figure 2. National Grid Forecast of EV Peak Load Impacts**



2 *Source: Synapse analysis of data provided in Attachment DOER-3-11*

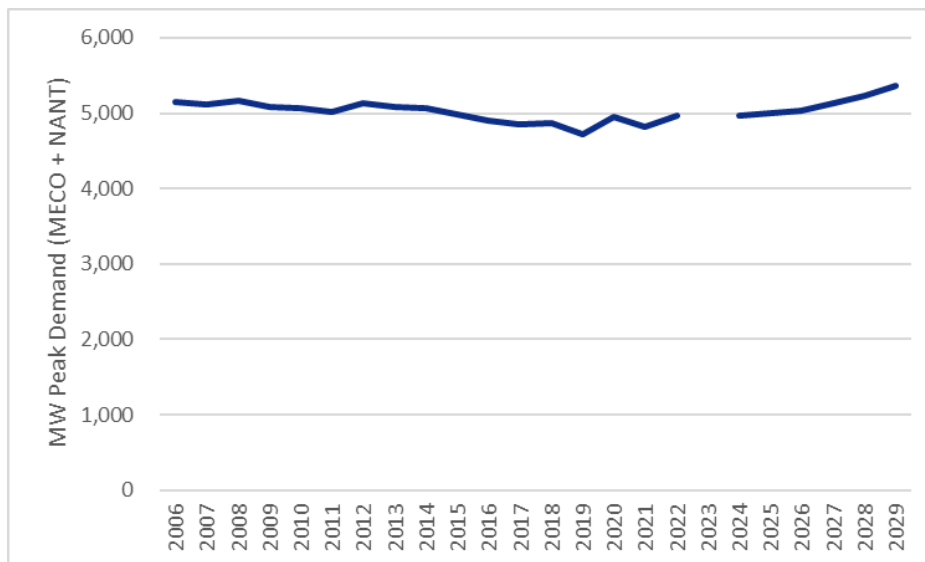
3 **Q. Are there any other examples of areas where the Company may have overstated its**
4 **cost forecast?**

5 A. Yes. As another example, information provided in D.P.U. 24-11 regarding the
6 Company's ESMP raises concerns regarding National Grid's proposed ESMP
7 investments.¹⁶ As a part of the ESMP development process, the Grid Modernization
8 Advisory Council (GMAC) provided recommendations to the distribution companies
9 regarding their ESMPs. The GMAC process included the use of consultants, who
10 provided written comments and analysis of their findings on draft ESMPs in order to
11 support the GMAC members in their review and understanding of the draft ESMPs. The
12 consultant comments highlight these concerns. In particular, the comments point to the

¹⁶ D.P.U. 24-11, Exhibit NG-Policy/Solutions-1.

1 lack of information provided in the ESMP regarding headroom on the Company's system
2 available to accommodate increased levels of electrification, as well as questions
3 regarding whether the Company has optimized its investments in terms of risk and cost.¹⁷
4 In reviewing the Company's forecasted system peak demand, it is evident that the load
5 growth from electrification will be gradual in the near-term. Indeed, the Company's
6 90/10 forecast¹⁸ for 2029 is only 3.6% higher than in 2008, as shown in the figure
7 below.¹⁹

8 **Figure 3. MECO and Nantucket Electric Co. Forecasted Annual Peak (MW) under 90/10 Scenario**



9
10 *Source: Synapse analysis of data provided in Attachment DOER-3-10-1.*

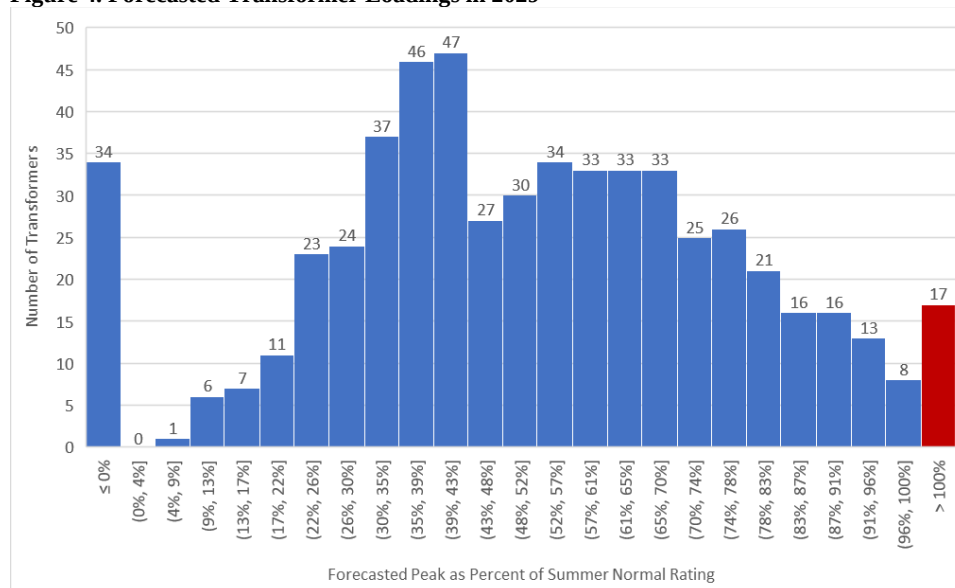
¹⁷ GMAC Consultant Comments, February 22, 2024, at 58-59. Synapse Energy Economics was one of the authors of these comments. Comments available at : <https://www.mass.gov/doc/consultant-comments-on-the-2024-esmps/download>.

¹⁸ A 90/10 forecast is based on extreme weather that is expected once every ten years. This is in contrast to a "normal" year which is denoted as a 50/50 forecast.

¹⁹ Attachment DOER-3-10-1.

Moreover, the Company's 90/10 forecast for its transformers indicates that by 2029, most transformers still have significant capacity to accommodate additional load. Only 3 percent of transformers (17 out of 568) are expected to exceed summer normal ratings in 2029 under the 90/10 forecast.²⁰ These transformers may require upgrades, or the overloadings may be addressed through other measures, such as load transfers to other circuits.

Figure 4. Forecasted Transformer Loadings in 2029



Source: Synapse analysis of data provided in Attachment DOER-3-10-2.

²⁰ Analysis of data provided in response to DOER 3-10-2.

1 In sum, the Company has not sufficiently justified a specific level of capital investments
2 to be included under a PBR revenue cap. As an alternative, I recommend that the
3 Department consider adoption of a capital cost tracker with a review and approval
4 process similar to that adopted in Rhode Island.

5 **Q. Please explain how the Rhode Island-style cost tracker operates.**

6 A. As the Company explains, Rhode Island’s Infrastructure, Safety, and Reliability (ISR)
7 mechanism “allows for rates to be set annually using forward-looking capital investment
8 estimates, along with O&M cost estimates in certain limited cases (such as property tax
9 and vegetation management), subject to true-up. ISR revenue is collected concurrently
10 with cost incurrence, eliminating regulatory lag other than relatively small fluctuations in
11 the true-up reconciliation amounts.”²¹

12 Importantly, however, the Company must submit an annual plan addressing its proposed
13 capital spending and cooperate with the Division of Public Utilities and Carriers to reach
14 an agreement on a proposed plan for these categories of costs for the prospective fiscal
15 year within sixty days. The plan is then filed with the Rhode Island Public Utilities
16 Commission (Commission) for review and approval within ninety days.²² The

²¹ Response to DOER-3-13(d).

²² R.I. Gen Laws § 39-1-27.7.1

1 Commission retains broad discretion in considering its approval of the ISR Plan proposed
2 by the Company.

3 I recommend that the Department consider adopting a similar mechanism for National
4 Grid in Massachusetts for the next three years, with appropriate modifications to ensure
5 that adequate time is available for scrutiny and testimony regarding the proposed plan by
6 key stakeholders, including Department staff, the Office of the Attorney General, and the
7 Department of Energy Resources. The Department would then approve, approve in part,
8 or reject the plan. This pre-approval would provide the Company with certainty that the
9 decision to make the investments in the plan would not be questioned in a subsequent
10 prudency review, although significant deviations in cost or failure to implement projects
11 in a reasonable manner could later result in a cost disallowance or finding of imprudence.

12 **Q. What are the benefits of this annual review and approval process for capital**
13 **investments?**

14 A. A cost tracker with a cap based on the Company's five-year capital forecast (i.e., the
15 ISRE mechanism) raises numerous concerns regarding cost control, particularly with the
16 need for investments in the later years of the forecast. A cost tracker with an annual
17 review and approval of the budget substantially reduces uncertainty regarding the need
18 for investments and allows stakeholders to raise concerns or propose alternatives in
19 advance of the investment being made.

1 **Q. Do you propose that this Rhode Island-like mechanism continue indefinitely?**

2 A. No. If adopted by the Department, I recommend that during the next three years, the
3 Company work with stakeholders to refine its near-term capital forecasts. Once
4 stakeholders and the Company have become more comfortable with this process, it may
5 be possible to return to a PBR framework that provides stronger incentives for cost
6 control.

7 **Q. Does this conclude your testimony?**

8 A. Yes, it does.