

Petition of Massachusetts Electric Company and Nantucket Electric Company each d/b/a National Grid for Approval to Offer Optional Electric Vehicle Time-of-Use Rates	) ) ) ) ) )	D.P.U. 23-85
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Acadia Center appreciates the opportunity to provide written comments in response to the November 14, 2023, Request for Comments in Department of Public Utilities (DPU) Docket 23-85, Petition of Massachusetts Electric Company and Nantucket Electric Company each d/b/a National Grid for Approval to offer Optional Electric Vehicle Time-of-Use Rates.

Chapter 179 of the Acts of 2022, An Act Driving Clean Energy and Offshore Wind, requires the Commonwealth’s electric distribution companies (EDC) to file a proposal for time-of-use rates for residential customers charging an electric vehicle. Below, Acadia Center outlines several recommendations for revising the proposal to make the TOU rates for customers more effective.

## 1

Time-of-use (TOU) rates, a category of Time-Varying Rates (TVR) that uses a tiered pricing structure for pre-determined peak, off-peak, and sometimes shoulder time periods, can offer several benefits, including:

- Providing customers an opportunity to lower their electricity bills by adjusting their electricity usage throughout the day;
- Reducing peak demand and strain on the electricity system, especially as the Commonwealth moves toward increased electrification of end uses;
- Enabling more optimal daily and annual utilization of distribution system infrastructure; and
- Reducing the reliance on fossil fuel-powered generation to meet the periods of highest demand.

Electric vehicles are a key example of why time-of-use rates are important. Without proper incentives, some residential customers with EVs might opt to charge their vehicle in the late afternoon or early evening, assuming they used it to travel to work. From a system perspective, late afternoons are often peak hours. A simple on/off-peak TOU rate can provide an incentive to charge an EV during non-peak hours, such as overnight, helping to lower fueling costs for EV owners and reducing strain on the electricity grid during daily peaks. TOU rates can help to reduce overall system costs and provide customers with opportunities to save money by taking advantage of lower-cost hours.

## **II. RECOMMENDATIONS IN RESPONSE TO THE COMPANY'S EV TOU RATE PROPOSAL**

The Company's proposed EV TOU rates are a productive step forward, but could be improved in order to maximize the benefits delivered to customers and to the grid.

## **National Grid Should Offer a Narrower Peak Window, Shoulder Peak Periods, and Seasonal Differentiation**

Acadia Center urges the Department to consider whether the proposed 1-9pm peak window for Rate EV-1 is sufficiently narrow to motivate meaningful behavior change when it comes to EV charging and shifting peak usage. In general, TOU periods should be short enough that they accurately reflect underlying system costs during periods of stress. Shorter periods of higher costs are easier for customers to understand and respond to in terms of shifting energy usage. Furthermore, with the growing adoption of solar photovoltaic (PV) generation across the Commonwealth, early afternoon hours may increasingly present valuable midday charging opportunities, which peak period pricing may frustrate. The Department should also consider whether including a shoulder period, as well as seasonal rates, may provide additional benefits for consumers.

The Department can look to utilities in California as an example. PG&E, for instance, offers EV customers a separately-metered TOU rate with a peak of 2-9pm Monday-Friday and 3pm-7pm on Saturday, Sunday, and holidays; a partial-peak from 7am-2pm and 9-11pm Monday-Friday, except holidays; and an off-peak period for all other hours (Rate EV-B).<sup>1</sup> Rate EV-B also offers seasonal versions of the rate with different pricing between summer and winter. At minimum, Acadia Center recommends that the Department express a commitment to explore these more advanced TOU characteristics in the future.

### **The Department Should Ensure Sufficiently Large Peak-to-Off-Peak Price Ratios**

It is important to consider the pricing differential between peak and off-peak periods and to ensure that the ratio is large enough for customers to see a noticeable difference in their bills and therefore motivate changes in behavior. According to the Regulatory Assistance Project, in

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<sup>1</sup> [https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC\\_SCHS\\_EV%20\(Sch\).pdf](https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC_SCHS_EV%20(Sch).pdf)

order to maximize peak demand reductions during peak hours, TOU periods in general must be sufficiently narrow and the annual average price differential between on-peak and off-peak should be at least 3:1.<sup>2</sup> Again taking PG&E's Rate EV-B as an example, its summer peak prices for the generation and distribution charges are almost three times and 3.4 times as large as the off-peak prices, respectively.<sup>3</sup> Acadia Center urges the Department to consider whether the Company's peak-to-off-peak price differentials are of sufficient magnitude to motivate meaningful behavior change.

### **The Department Should Explicitly Allow Submetering**

Acadia Center is concerned with the requirement for EV owners to install a separate meter in order to subscribe to Rate EV-1. This may add unnecessary costs for consumers and create a barrier to increased adoption. Submetering (also known as embedded metering) is an alternative method for accurately measuring the electricity usage of an EV without the need to install a separate utility-owned meter. While some utility companies may claim that submetering is not adequate for "revenue grade" metering and billing, the California PUC recently issued a decision explicitly allowing submetering using EV equipment.<sup>4</sup> In explaining its decision, the California PUC stated that submetering technology meets sufficient standards of accuracy and would "provide accurate billing and transparency."<sup>5</sup> By allowing submetering, the Department can help ratepayers avoid the expense of installing a separate meter.

### **The Company Should Accurately Incorporate All Avoided Costs Into Its Rate Design**

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<sup>2</sup> Time-Varying Rates in New England: Opportunities for Reform; A Look at New England Rate Design: Issue Brief #4. David Littell and Joni Sliger, RAP. October 2020.

<sup>3</sup> [https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC\\_SCHS\\_EV%20\(Sch\).pdf](https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC_SCHS_EV%20(Sch).pdf)

<sup>4</sup> California PUC Rulemaking 18-12-006. Decision Adopting Plug-In Electric Vehicle Submetering Protocol and Electric Vehicle Supply Equipment Communication Protocols, June 30, 2022. See more: <https://www.cpuc.ca.gov/news-and-updates/all-news/cpuc-decision-makes-california-first-state-in-the-nation-to-allow-submetering-of-electric-vehicles>

<sup>5</sup> California PUC Rulemaking 18-12-006, page 38.

The proposed EV-1 includes a TOU charge for Basic Service and Distribution Energy. Acadia Center urges the Department to consider whether the Company's explanation for the lack of a TOU transmission energy rate is sufficient, or whether shifting EV usage to off-peak hours would in fact reduce transmission system costs and should therefore be priced into the TOU rate. As a point of comparison, NSTAR Electric's EV TOU proposal in DPU 23-84 includes a TOU transmission charge (but not a TOU distribution charge).<sup>6</sup> Acadia Center recommends that the Department require each EDC to include both a TOU distribution charge and TOU transmission charge.

Acadia Center also urges the Department to ensure that the Company includes the value of all potential benefits and avoided costs from shifting demand to off-peak hours, including improved reliability, avoided greenhouse gas emissions, as well as the reduced need to build new infrastructure in the future as demand shifts away from peak periods.

### **The Department Should Explore Opportunities to Accelerate the Deployment of TOU Rates and Should Expand the Availability of Off-Peak Charging Rebates**

Time-of-use rates are a critical tool for helping to meet the Commonwealth's climate and energy goals, and a delay in implementation may prevent consumers from realizing the full benefits of Advanced Metering Infrastructure (AMI). The Company notes that it will begin a three-year rollout of AMI meters starting in mid-2025 and will "[wait] one year after the first AMI meters are installed before offering any approved TOU rates to customers."<sup>7</sup> Considering the likely thousands of EVs to be added to the Commonwealth's roads in the intervening years, Acadia Center urges the Department to consider whether the prolonged timeline for TOU rollout is reasonable or if there are opportunities to accelerate deployment. We also recommend that the

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<sup>6</sup> D.P.U. 23-84 Exhibit ES-TOU-1.

<sup>7</sup> D.P.U. 23-85 Exhibit NG-1, page 23.

Department require the availability of off-peak EV charging rebates in the near term, which can be an opportunity to incentivize off-peak usage before formal TOU rates become available.

### **The Department Should Commit to Exploring Opt-Out Time-of-Use Rates**

Opt-out time-of-use rates generally achieve higher levels of long-term customer enrollment compared to opt-in rates and can help maximize the benefits for both customers and the Commonwealth.<sup>8</sup> While H.5060, An Act Driving Clean Energy and Offshore Wind, requires the EDCs to develop opt-in TOU rates for EV customers, Acadia Center urges the Department to explore opt-out time-of-use rates in the future.

Respectfully submitted,

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<sup>8</sup> Time-Varying Rates in New England: Opportunities for Reform; A Look at New England Rate Design: Issue Brief #4. David Littell and Joni Sliger, RAP. October 2020. p. 9.