BEFORE THE
PUBLIC SERVICE COMMISSION
OF MARYLAND

Resource Adequacy	**)**	**Administrative Docket PC66**

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I appreciate the Commission's focus on resource adequacy and its inclusion of innovative solutions, including distributed or demand-side solutions, into its conversation in this proceeding. In these comments, I identify two policies that can be more rapidly adopted than many supply-side solutions to resource adequacy and, when taken together, would reduce demand by Maryland's residential customers by about 700 megawatts, or more than 10% of residential customers' overall capacity needs.

NRG is a Fortune 500 company and one of America's leading energy companies with nearly 8 million customers nationwide, including in Maryland. Recently, NRG announced a partnership with RenewHome and Google Cloud to expand what will be one of, if not the largest residential smart-thermostat Virtual Power Plant ("VPP") in the United States. We are targeting the enrollment of nearly half a million customers in that VPP by the end of the decade.[1] While initially focusing on Texas due to the value its energy-only wholesale market conveys to demand-side resources, NRG ultimately hopes to expand these activities to other jurisdictions. PJM represents a jurisdiction where dispatchable smart thermostats, as part of a VPP, potentially have substantial value due to elevated capacity prices. In this vein, NRG offers comments in this proceeding that focus on ensuring that Maryland's retail regulation is well-geared toward making the demand side of the energy market a full and co-equal participant across from the supply side, and thus better ensure resource adequacy at those times when it is threatened.

[1] NRG (Nov 7, 2024). *NRG, Renew Home and Google Cloud Announce Partnership* [press release]. Link: https://www.nrg.com/about/newsroom/2024/43921.html?sid=GSM-TWITTER-2024November-VPPPartnershipAnnouncement24TW

1. *The Commission should ensure that existing smart thermostat programs are expanded and fully optimized to provide capacity benefits*

Four of the five largest electric distribution companies in Maryland operate direct load control ("DLC") programs whereby customers receive both an upfront and recurring annual financial incentive, in exchange for allowing the utility to dispatch a customer's smart thermostat.[2] Altogether, these smart-thermostat programs have enrolled approximately 55,000 Maryland residential customers, which is about the same number of customers that have enrolled in neighboring, but much smaller Delaware.[3] The DLC smart-thermostat program accounts for only 2.3% of the 2.4 million residential customers in Maryland.

It is not clear how frequently these devices, once subsidized and installed, are activated. They are typically not used to reduce adopting customers' exposure to capacity costs, although they reduce the overall capacity needs of all customers by participation in the PJM market. It would improve both the efficiency and adoption rate of these smart-thermostat programs if the load-serving entities[4] actually responsible for capacity costs (and energy and transmission costs) were also to have dispatch rights to the devices subsidized by utility programming. At least one state regulator has recently found a way to make that happen. Last year, the Public Utilities Commission of Ohio ordered that AEP's smart thermostat programs be co-optimized with a customer's load-serving entity. The PUCO's order requires that energy suppliers be allowed to:[5]

- market smart thermostats devices and the $75 per-device subsidy as part of retail offerings
- exercise dispatch rights to obtain energy and capacity cost reductions, and
- sell aggregations of these devices into the PJM capacity market as Demand Response

The Ohio regulatory model for these smart thermostats thus leverages money that ratepayers are already paying to provide additional capacity to the system, and increase cost reductions for

[2] See, for example, BGE's Connected Rewards program described at their website: https://bgesmartenergy.com/residential/earn-incentives/connectedrewards#gsc.tab=0

[3] Delmarva Power, Delaware Public Service Commission Docket No. 11-330 - Delmarva Power & Light Company's Energy Wise Rewards Residential Direct Load Control Program – First Quarter 2024 Report, p. 1. Maryland utilities also have a direct load control program by which a remote switch installed on an external air-conditioning compressor can be used to cycle the customer's air conditioning. I don't consider that program in these comments.

[4] Providers of Standard Offer Service, competitive retailers, and, once it is established, the Montgomery County community choice aggregation.

[5] Public Utilities Commission of Ohio, Case No. 23-23-EL-SSO et al., Opinion and Order (April 3, 2024) at Pg. 87 and Joint Stipulation and Recommendation (September 6, 2023) at Paragraph 34.

individual customers who opt into the program. Maryland should replicate this policy approach for its existing thermostat programs.

Additionally, attempts should be made to expand the smart thermostat programs, once they are improved. If enrollment were expanded to just 10% of investor-owned utilities' and Southern Maryland Electric Cooperative's total residential customer base, then smart thermostats would constitute 271 MWs of capacity.[6]

To this end, the Commission should prioritize increased adoption of smart thermostats and their enrollment in improved DLC programs. It may do so by allowing third parties to market these devices as part of competitive retail energy offers or in connection with the sale of other home-services products. The Commission should also consider a requirement for Standard Offer Service ("SOS") providers to make a bilateral purchase of capacity from smart thermostats or other distributed energy resources. Since SOS providers themselves do not have a visible consumer relationship, such a requirement would lead to side agreements between SOS providers and third parties who did. This would ensure demand-side resources had a role in SOS.

2. The Commission should take steps to implement opt-out time-of-use rates

After years of effort, the three participating utilities in PC44's Time-of-Use rate design work have enrolled a total of 2,660 customers in the time-of-use rates that resulted from that docket's work, out of a base of nearly 2 million residential customers.[7] This 1.4% rate of enrollment is small, and sadly the rate of new enrollments seem to be slowing with BG&E enrolling only 448 new customers, Pepco only 34 new customers, and Delmarva Power only 5 new customers in a one-year period spanning May 2023 to May 2024.

The low levels of enrollment mean that the demand reductions that resulted from a random statistical sampling of Maryland residential customers in PC44's earlier work are not being achieved. Between 2019 and 2021, a pilot for time-of-use rates showed that residential customers achieved demand reductions of between 9.3% and 13.7% during the summer, when the PJM system peaks and which PJM uses as the basis for procuring and billing capacity to customers.

[6] Based on BG&E's evaluation, measurement, and verification framework, upon which a 1.15 kW per device demand-reduction capability can be calculated. Maryland Public Service Commission Case No. 9705, Baltimore Gas and Electric 2024-2026 EmPOWER MD Program Filing (February 15, 2024), Attachment 1, Table ES 1 Net, row Connected Rewards SM.

[7] Report of PC44 Time-of-Use Rate Design Workgroup (Sept. 6, 2024) at 5. Total residential customers figure sourced from EIA Form 861 (2023).

One of the most significant levels of enrollment in time-of-use rates in the United States is Southern California Edison, where 83% of the utility's supply customers are enrolled in time-of-use rates.[8] If 83% of the residential SOS customers of Maryland's four investor-owned utilities were enrolled in time-of-use rates, and achieved demand reductions on the low end of observed results from the PC44 pilot, then overall residential capacity needs would fall by 7.8%, a reduction of 436 MWs of capacity.[9]

What is the reason for the high levels of enrollment in SCE? It is simple: The utility has an *opt-out* rate design for time-of-use. Simply put, there is little reason to expect an opt-in model of time-of-use rates to produce substantial customer enrollments, and empirically they have not in Maryland. As I have more extensively noted elsewhere, a default rate that is a flat rate does not respect the basic conventions of cost-of-service ratemaking and it does not reflect the realities of the electric grid—specifically, the fact that periods of high demand impose costs that are related to demand.[10] The recent capacity market outcome in PJM puts a dollar sign and an exclamation point on this observation. The Commission should expeditiously move to make both the SOS rate and electric distribution companies' delivery charges to be time-of-use by default.

Making SOS and utility distribution rates time-of-use would continue to afford customers the choice to select another product, including a flat-rate product, from the competitive retail market, but it would establish time-of-use rates as the standard. When it began PC44, such a step may have been unusual for a state regulator. But today, in 2024, five state regulatory commissions, including California, Colorado, Hawaii, Michigan, and Missouri, have ordered the adoption of opt-out time-of-use rates for their electric utilities, and numerous public power utilities have also adopted such rate structures, including utilities like Long Island Power Authority that are in restructured markets. There are few better candidates for rate design focused on eliciting demand-side responsiveness than Maryland, where the siting and development of supply

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[8] Based on EIA Form 861 data (2023).

[9] .83 * .093 = 7.8%. Capacity figures from BGE, Delmarva Power, PEPCO and Potomac Edison, *Request for Proposal for Full Requirements Wholesale Electric Power Supply* (Sep 9, 2022); Delmarva Power, *Overview of the SOS RFP Process, Table 2 Delmarva Power MD Preliminary SOS Capacity PLC;* Potomac Electric, *Overview of the SOS RFP Process, Table 2 PEPCO MD Preliminary SOS Capacity PLC;* Potomac Edison, *The Potomac Edison Company Bid Plan* (Oct 3, 2024)..

[10] Travis Kavulla, *Why is the Smart Grid So Dumb? Missing Incentives in Regulatory Policy for an Active Demand Side in the Electricity Sector* (2023), Energy Systems Integration Group. https://www.esig.energy/wp-content/uploads/2023/01/Why-Is-the-Smart-Grid-So-Dumb-Missing-Incentives-in-Regulatory-Policy-for-an-Active-Demand-Side-in-the-Electricity-Sector.pdf

resources is particularly challenging, and where it has put itself into a situation where it is largely reliant on supply imports from elsewhere.

Finally, there is no statutory barrier to the Commission's adoption of time-of-use rates as an opt-out. While the DRIVE Act of 2024 requires Maryland's investor-owned utilities to file opt-in time-of-use rates by mid-2025, and requires further evaluation of the potential for opt-out rates, nothing in that law requires the Commission to wait for years to pass before taking a more decisive action.[11] In view of PJM's capacity-market results and because further analysis would duplicate the sound work done in PC44—a pilot that has been a model for other states' review of these same topics—the Commission should undertake a more expeditious process to ensure time-of-use rates are the standard for its regulated utilities in the state.

3. Conclusion

Demand-side solutions are not the only or even the largest solution to Maryland's resource adequacy challenges. But they do represent solutions with a shorter runway to achievement, an avoidance of controversial physical infrastructure, and a return on advanced metering investments that are presently being under-utilized. I thank the Commission for its attention to these matters, and look forward to further discussing these matters further at the Commission's upcoming technical conference.

[11] The Distributed Renewable Integration and Vehicle Electrification (DRIVE) Act (Ch. 476, 2024).