



January 19, 2023

Ms. Shonta Dunston  
Chief Clerk  
North Carolina Utilities Commission  
4325 Mail Service Center  
Raleigh, North Carolina 27699

**RE: Consideration of Certain Standards to Promote Utility Demand  
Response Pursuant to the Infrastructure Investment and Jobs Act  
Docket No. E-100, Sub 189**

Dear Ms. Dunston,

On November 10, 2022, the North Carolina Utilities Commission (“Commission”) opened Docket No. E-100 Sub 189 and issued an *Order Allowing Comments*. That order drew a preliminary conclusion that the Commission’s previous efforts to regulate the relevant utilities’ demand response programs satisfies Section 40104 of the Infrastructure Investment and Jobs Act’s (“IIJA”) requirement for the Commission to have considered or implemented demand response or demand flexibility standards. This order also found good cause to allow interested parties to file written comments regarding this preliminary conclusion. On December 22, 2022, the North Carolina Sustainable Energy Association (“NCSEA”) submitted a letter in lieu of comments supporting the Commission’s preliminary conclusion while elaborating on the need for continuous study of emerging technologies in order to realize the benefits that innovative demand response programs can provide. NCSEA and the Carolinas Clean Energy Business Association (“CCEBA”) respectfully

submit additional comments in this letter in lieu of reply comments.

Winter Storm Elliott wreaked havoc on North Carolina’s grid. Never before have Duke Energy Carolinas, LLC and Duke Energy Progress LLC (“DEC” and “DEP” respectively, jointly “Duke Energy”) been forced to institute blackouts in order to preserve the overall grid from potential failure. The frequency and intensity of such storms is only increasing<sup>1</sup>—North Carolina will be hit again. While much of the discussion following the Christmas Eve rolling outages focused on the derating of fossil fuel generation facilities and the inability to acquire additional capacity from outside Duke Energy’s system, demand response—including more “behind-the-meter” energy savings and production technologies—could have played a crucial role in preventing this crisis from becoming a rolling blackout catastrophe and could play a bigger role in the future.

Existing demand response prevented more widespread outages and damage in two key ways. Duke relied on demand-side management programs to reduce about 400 MW of load and called upon citizen across North Carolina to voluntarily reduce their own usage while neighbors were in need. Before Duke Energy resorted to rolling blackouts, and pursuant to the General Load Reduction Plan (“GLRP”), Duke Energy decreased demand by around 200 MW in both DEC and DEP service areas by utilizing existing demand response mechanisms.<sup>2</sup> Additional demand response

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<sup>1</sup> 18 billion-dollar weather disasters struck the United States in 2022, tied for third behind only 2021’s 20 such disasters and 2020’s 22 such events. *Record drought gripped much of the U.S. in 2022*, NOAA (Jan. 10, 2023), <https://www.noaa.gov/news/record-drought-gripped-much-of-us-in-2022>; *US hit by 18 separate billion-dollar weather and climate disasters last year: NOAA*, THE HILL (Jan. 10, 2023), <https://thehill.com/policy/energy-environment/3807107-us-hit-by-18-separate-billion-dollar-weather-and-climate-disasters-last-year-noaa/>.

<sup>2</sup> N.C. Util. Comm’n, Recording of Staff Conference 1/3/2023, at 25:00, 30:40, 2:03:40, <https://www.youtube.com/watch?v=xARPPMFpOA4>.

was achieved by wholesale customers.<sup>3</sup> The load management actions detailed in Duke Energy's 2022 GLRP include startup of customer owned standby generators, activation of residential air conditioner control, activation of interruptible contract provisions, activation of the interruptible wholesale customers, and activation of the Powershare programs.<sup>4</sup> Cumulatively, the GLRP projects these actions could conserve 450MW on an average December 22nd day, though the projection more than doubles over summer months when residential programs—as currently designed—are more effective.<sup>5</sup>

Following these load management actions, the GLRP calls for voluntary reductions first to large customers and government agencies and then to the general public.<sup>6</sup> Duke Energy issued a general appeal for energy conservation from the general public at 4:45am on Saturday December 24, with subsequent alerts asking for conservation until 10am on Monday December 26.<sup>7</sup> While the specific amount of load reduction attained by those individuals who chose to act is not known at this time, it is clear that more North Carolina households would have been affected by the Christmas Eve outages but for these actions.

Demand response is a critical tool for ensuring future grid reliability and resilience. 400MW of load reduction on December 23 and 24 represents only 1.5% of Duke Energy's generating capacity. This low level of load reduction should be

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<sup>3</sup> *Id.* at 2:03:40.

<sup>4</sup> 2022 GENERAL LOAD REDUCTION AND SYSTEM RESTORATION PLAN OF DUKE ENERGY CAROLINAS, LLC AND DUKE ENERGY PROGRESS, LLC, DOCKET NO. E-100 SUB 10A, 7 (May 12, 2022), *available at* <https://starw1.ncuc.gov/NCUC/ViewFile.aspx?Id=53d38043-aa93-4f7a-a82f-d38a09d90355>.

<sup>5</sup> *Id.* at 8.

<sup>6</sup> *Id.* at 9-10.

<sup>7</sup> DUKE ENERGY CAROLINAS, LLC AND DUKE ENERGY PROGRESS, LLC PRESENTATION & GENERATING UNIT STATUS SUMMARY DOCUMENT, M-100 SUB 163, 13-20 (Jan. 4, 2023), *available at* <https://starw1.ncuc.gov/NCUC/ViewFile.aspx?Id=63276e03-87af-42d5-b2c2-97293fc5fe83>.

greatly increased where economically possible to avoid similar situations in the future. The design of customer programs is essential to realizing these benefits, including more behind-the-meter flexibility.<sup>8</sup> The voluntary actions of residential customers show the untapped potential of this resource. Battery storage technology deployment is advancing rapidly<sup>9</sup> and will be a critical resource to utilize in the future—particularly as behind-the-meter storage and solar + storage systems continue to proliferate because of commercial and industrial customer demand, new incentives in federal legislation, continuing cost declines, and as new technologies and control systems become commercially available.<sup>10</sup>

Cost-effective demand-response programs are integral to the least-cost resource mix, as they lower peak demand across Duke’s system in times of strain. Behind-the-meter systems—where individual customers choose to bear the costs of installation and maintenance—represent a particularly cost-effective way of integrating more clean energy generation, reducing demand, and attaining more grid flexibility. The present restrictions on customers installing behind-the-meter technologies have lowered overall deployment and should be reviewed.<sup>11</sup>

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<sup>8</sup> See generally Arnaud de Giovanni, et al, *Can decentralized energy get good enough, fast enough?*, EY (Nov. 15 2022), [https://www.ey.com/en\\_pt/recap/can-decentralized-energy-get-good-enough-fast-enough](https://www.ey.com/en_pt/recap/can-decentralized-energy-get-good-enough-fast-enough); Lynne Kiesling, *Innovations and Decentralized Energy Markets*, THE CENTER FOR GROWTH AND OPPORTUNITY AT UTAH STATE UNIVERSITY (Mar. 2020), <https://www.thecco.org/research/innovations-and-decentralized-energy-markets/#regulatory-frameworks-for-a-decentralized-digital-energy-future>.

<sup>9</sup> Q3 2022 saw the U.S. add the most battery storage ever in MWh-terms, and second most ever in MW-terms. The rate of deployment is only expected to increase over the near future. See U.S. Energy Storage Monitor: Q4 2022 Executive Summary, WOODS MACKENZIE (Dec. 2022), <https://www.woodmac.com/industry/power-and-renewables/us-energy-storage-monitor/>.

<sup>10</sup> See Kang Miao Tan, et al, *Empowering smart grid: A comprehensive review of energy storage technology and application with renewable energy integration*, 39 J. OF ENERGY STORAGE 102591 (July 2021), <https://www.sciencedirect.com/science/article/abs/pii/S2352152X21003340>.

<sup>11</sup> Duke Energy has not said how much it would have paid to independent power to supply needed energy on December 23 and 24, but energy in times of short demand can cost \$1000/MWh or more. The Commission should study and compare the different ways of meeting demand during a crisis, including a

More demand response is needed to prepare North Carolina's grid for the next extreme weather event. NCSEA and CCEBA encourage the Commission to take every opportunity before it, including the upcoming 2024 CIPRP process, the review of the EE/DSM Cost Recovery Mechanism to be initiated by Duke Energy pursuant to the 2022 Carbon Plan, and the ongoing development of customer programs within Duke Energy's rate cases and elsewhere.

NCSEA and CCEBA thank the Commission for its consideration of these matters. By copy of this letter, I am serving copies of the attached to all parties of record by electronic delivery. Please do not hesitate to contact me if any questions or concerns arise in connection with this filing.

Thank you,

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cost-benefit analysis of alternative options. Alternatives to study should include purchasing energy, demand response, behind-the-meter consumer investments, and the economic losses of energy consumers from rotating blackouts.

/s/ Ethan Blumenthal  
Ethan Blumenthal  
Regulatory Counsel for NCSEA  
N.C. State Bar No. 53388  
4800 Six Forks Road, Suite 300  
Raleigh, NC 27609  
(704) 618-7282  
[ethan@energync.org](mailto:ethan@energync.org)

/s/ John D. Burns  
John D. Burns  
NC Bar No. 24152  
General Counsel  
Carolinas Clean Energy Business  
Association  
811 Ninth Street  
Ste. 120-158  
Durham, NC 27705  
919-306-6906  
[counsel@carolinasceba.com](mailto:counsel@carolinasceba.com)

Enclosures  
cc: Parties of Record

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I hereby certify that all persons on the docket service list have been served true and accurate copies of the foregoing filing by hand delivery, first class mail deposited in the U.S. mail, postage pre-paid, or by email transmission with the party's consent.

This the 19<sup>th</sup> day of January, 2023.

/s/ Ethan Blumenthal  
Ethan Blumenthal  
Regulatory Counsel for NCSEA  
N.C. State Bar No. 53388  
4800 Six Forks Road, Suite 300  
Raleigh, NC 27609  
(704) 618-7282  
ethan@energync.org