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March 29, 2022

Ms. Kimberley A. Campbell, Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4300

Re: Investigation of Proposed Net Metering Policy Changes
Docket No. E-100, Sub 180

Dear Ms. Campbell,

Attached for filing in the above-referenced docket, on behalf of Intervenors 350 Triangle, 350 Charlotte, and NC-APPPL, is the Joint Initial Comments of 350 Triangle, 350 Charlotte, and NC-APPPL.

By copy of this letter, I am forwarding a copy to all parties of record by electronic delivery.

Sincerely,

Andrea C. Bonvecchio

Enclosure(s)

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-100, SUB 180

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of:	)	JOINT INITIAL COMMENTS
	)	OF
Investigation of Proposed	)	350 TRIANGLE, 350 CHARLOTTE,
	)	AND THE NORTH CAROLINA
Net Metering Policy Changes	)	ALLIANCE TO PROTECT OUR
	)	PEOPLE AND THE PLACES WE LIVE

Intervenors 350 Triangle, 350 Charlotte, and the North Carolina Alliance to Protect Our People and the Places We Live (collectively, the "Intervenors"), through undersigned counsel and pursuant to the North Carolina Utilities Commission ("NCUC")'s Order Requesting Comments entered in the above-referenced docket on January 10, 2022, hereby respectfully submit these Joint Initial Comments regarding Duke Energy Carolinas, LLC ("DEC") and Duke Energy Progress, LLC's ("DEP") (collectively, "Duke Energy") Joint Petition for Approval of Revised Net Energy Metering ("NEM") tariffs (the "Proposal"):

SUMMARY

The NCUC must reject Duke Energy's Proposal in the above-referenced docket because the Proposal is premature prior to the development and completion of an appropriate Carbon Plan and independent Value of Solar Study; because the complex business practices outlined in the Proposal will exacerbate the climate crisis and have deleterious public health impacts in derogation of NCUC's obligations under North Carolina law and public policy; and fails to

recognize the societal benefits of distributed energy resources and incorporate a plan for low-and-moderate-income communities.

Pursuant to applicable law, the NCUC should require an independent Value of Solar Study to determine the full costs and benefits of customer-sited generation prior to revising the current NEM tariffs. Further, to meet the needs of all energy customers and achieve the State's emission reduction goals, Intervenors have outlined a framework to guide the NCUC in its future implementation of climate-friendly NEM tariffs. In consideration of this framework, Intervenors further urge the NCUC to require Duke Energy to file a revised Proposal to address the issues addressed below and incorporate these climate-friendly elements that serve the public interest.

INDEX OF ATTACHMENTS

The following is a list of attachments filed contemporaneously with these Joint Initial Comments:

Attachment A: DEP & DEC's Responses to NC-APPPL's Request No. 1-2.

DISCUSSION

I. Duke Energy's Proposal is Premature, Undermines Carbon Reduction Goals Mandated by House Bill 951, and Violates Other Applicable North Carolina Law and Principles of Public Policy.

The NCUC must reject Duke Energy's Proposal because it fails to clearly state how the proposed NEM tariffs will advance North Carolina's carbon reduction goals. House Bill 951 ("H.B. 951"), signed into law on October 13, 2021, among other obligations requires the NCUC to take all reasonable steps to achieve reductions in the emissions of carbon dioxide from electric generating facilities

owned or operated by certain electric public utilities, including Duke Energy. Specifically, H.B. 951 aims to reduce electric utilities' carbon dioxide ("CO2") emissions by 70% from 2005 levels by the year 2030 and to achieve carbon neutrality by 2050. In order to meet these targets, the NCUC directed Duke Energy to file a proposed plan (the "Carbon Plan") by May 16, 2022, which the NCUC will then adopt and make effective by December 31, 2022.[1]

Duke Energy's NEM tariffs were developed prior to the enactment of H.B. 951 pursuant to a Memorandum of Understanding between Duke Energy and other intervenors in this docket.[2] Duke Energy nevertheless asserts that its Proposal is "consistent with the spirit of H.B. 951" because it "offers a more sustainable path for customer-sited, carbon-free power generation."[3]

However, decisions made pursuant to the NCUC's statutory authority are intended to regulate public utilities that serve the people, economy, and government of North Carolina[4], and therefore, any current or future proposed NEM tariff proposals should be tailored to North Carolina's solar market, residents, energy needs, and climate legislation. Until there is more clarity on the role customer-sited generation will play in achieving the goals of H.B. 951, Duke

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[1] Order Requiring Filing of Carbon Plan and Establishing Procedural Deadlines, Docket No. E-100, Sub 179 (Nov. 19, 2021); Order Granting Extension of Time, Docket No. E-100, Sub 179 (Nov. 29, 2021).

[2] Memorandum of Understanding, South Carolina Public Service Commission Docket No. 2020-264-E (Dec. 4, 2020), available at: https://dms.psc.sc.gov/Attachments/Matter/6c563956-e357-478a-94ce-6c634e0dd78b.

[3] Duke Energy Carolinas, LLC's and Duke Energy Progress, LLC's Joint Petition for Approval of Revised Net Energy Metering Tariffs, Docket No. E-100, Sub 180 at 7 (Nov. 29, 2021).

[4] N.C. Gen. Stat. § 62-2(a).

Energy's Proposal is premature and will likely undercut rather than support the purpose of the Carbon Plan's development.

Furthermore, § 62-126.4(b) of the North Carolina General Statutes, commonly referred to as House Bill 589 ("H.B. 589"), directs the NCUC to establish NEM rates "only after an investigation of the costs and benefits of customer-sited generation." N.C. Gen. Stat. § 62-126.4(b). Though Duke Energy has evaluated the costs of customer-sited generation, the Proposal includes no evidence of any investigation regarding the associated benefits. The NCUC should require an independent Value of Solar Study to determine the full costs and benefits, both societal and economic, of rooftop solar prior to any NEM tariffs being established. The study must also evaluate the social costs of carbon emissions, particularly as they relate to low-and-middle-income North Carolina communities.

N.C. Gen. Stat. § 62-126.4 also provides the NCUC with a transition period until January 1, 2027 to revise NEM tariffs. Given that five years remain to assess the best path forward, Intervenors request that the NCUC reject Duke's premature Proposal until a Carbon Plan is in place and a final independent Value of Solar Study is available. In the interim, the NCUC should wait until all work related to Duke Energy's Low-Income Affordability Collaborative is complete, and the distributed energy resource pilots described in Duke Energy's Memorandum of Understanding with other intervenors in this docket have been adopted.[5]

[5] Duke Energy Carolinas, LLC and Duke Energy Progress LLC's Memorandum of Understanding with Vote Solar Docket Nos. E-7, Sub 1214 and E-2, Sub 1219 (Feb. 10, 2022), available at: https://starw1.ncuc.gov/NCUC/ViewFile.aspx?Id=e8b27cba-e8bc-4df1-8542-934c1f984612.

Although Duke Energy's Proposal deals with a specific aspect of renewable energy policy, it must be considered as an integral component of a unified approach to the necessary transition to renewable energy production and distribution that achieves the goals of H.B. 951 and the statutory mandate of H.B. 589.

The Proposal must be rejected as premature until Duke Energy demonstrates that it has considered both the costs and benefits of solar through independent analysis and until a final Carbon Plan is developed that reflects the framework provided by H.B. 951.

II. The Climate Crisis Demands the Prioritization of Renewable Electricity Generation.

Duke Energy's Proposal and its disincentives for rooftop solar must be considered in light of the imminent global climate crisis and its impacts on the state of North Carolina and its citizens. These growing impacts are inevitable if fossil fuel use continues unabated. Increasing the state's dependency on fossil fuels for energy production, as Duke Energy's Proposal does, is not in the public interest or in line with state standards for carbon emissions reductions targets as described above.

Just last month, the Intergovernmental Panel on Climate Change ("IPCC") finalized the second part of its Sixth Assessment Report, *Climate Change 2022: Impacts, Adaptation and Vulnerability*.[6] The IPCC report highlights the

[6] Intergovernmental Panel on Climate Change, Summary for Policymakers, Climate Change 2022: Impacts, Adaptation and Vulnerability, The Working Group II Contribution to the IPCC Sixth Assessment Report,

consequences of inaction and the need to respond to increasing climate risks, which further underscores the urgent need for effective actions to reduce carbon emissions through the deployment of renewable energy generation sources.

In 2019, the United Nations indicated that decisive action must be taken by 2030 to avoid "irreparable damage to our planet."[7] While emission reduction measures beyond 2030 are an essential component of long-term mitigation, the climate crisis warrants *immediate* action. Rapid reductions in climate-forcing emissions provide the last best chance to avoid the worst outcomes of warming poles and melting permafrost that will cause widespread climate destabilization and feedback loops, as outlined in the IPCC Report. Already warming oceans and changing climate patterns have contributed to an exponential rise in both the expense and human tragedy associated with severe weather events, in North Carolina and across the globe.

Natural gas, derived domestically primarily through an invasive geologic drilling process called hydraulic fracturing, or "fracking," is 70-90% methane (chemical formula CH4).[8] The fracking process is highly inefficient and results in a great deal of wasted methane escaping into the atmosphere, where methane is a

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https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf.

[7] United Nations General Assembly Seventy-Third Session, Meeting on Climate and Sustainable Development, *Only 11 Years Left to Prevent Irreversible Damage from Climate Change, Speakers Warn during General Assembly High-Level Meeting*, United Nations (Mar. 28, 2019), https://www.un.org/press/en/2019/ga12131.doc.htm.

[8] American Petroleum Institute, *What is Natural Gas?*, https://www.api.org/news-policy-and-issues/natural-gas-solutions/what-is-natural-gas (last visited Mar. 26, 2022); *see also* United States Department of Energy, *Natural Gas Fuel Basics*, https://afdc.energy.gov/fuels/natural_gas_basics.html (last visited Mar. 26, 2022).

powerful greenhouse gas. Increased fracking activity in North American shale deposits has contributed to a rapid and significant rise in global methane emissions.[9] Methane is estimated to be responsible for about 30% of the current global warming and is approximately 80 times more potent than CO2 in contributing to the greenhouse effect.[10] In addition, methane contributes to the accumulation of ozone or smog, a pollutant that affects lung development in children as well as people afflicted with asthma, lung, and heart disease and can even cause respiratory distress and discomfort in healthy populations. Ozone also damages food crops such as corn, wheat, and soybeans.

While natural gas burns more cleanly than coal at the smokestack, methane from the mining, processing, transport, and use of natural gas also has enormous health and environmental impacts, and is, from a climate perspective, even worse than coal-burning fossil fuel utility production. In May 2021, announcing the findings of the UN Global Methane Assessment,[11] UN Environment Programme executive director Inger Andersen made clear that reducing methane is the

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[9] Stephen Leahy, *Fracking boom tied to methane spike in Earth's atmosphere*, National Geographic (Aug. 15, 2019), https://www.nationalgeographic.com/environment/article/fracking-boom-tied-to-methane- spike-in-earths-atmosphere.

[10] United Nations, *Methane emissions are driving climate change. Here's how to reduce them*, United Nations Environment Programme 50 (Aug. 20, 2021), https://www.unep.org/news-and-stories/story/methane-emissions- are-driving-climate-change-heres-how-reduce-them.

[11] United Nations, G*lobal Methane Assessment: Benefits and Costs of Mitigating Methane Emissions*, United Nations Environment Programme 50 (May 6, 2021), https://www.unep.org/resources/report/global-methane-assessment-benefits-and-costs-mitigating-methane-emissions.

"strongest lever we have to slow climate change over the next 25 years and complements necessary efforts to reduce carbon dioxide."[12]

A recent study led by Dr. Drew Shindell of Duke University described the opportunities for reducing methane in key sectors, including oil and gas.[13] The study showed that undertaking realistic and achievable methane reduction measures across key sectors globally by 2030 would avoid nearly 0.3°C of global warming by 2040, and prevent 255,000 premature deaths, 775,000 asthma-related hospital visits, 73 billion hours of lost labor from extreme heat, and 26 million metric tons of crop losses globally.[14]

Reducing methane emissions would result in significant air quality improvements for North Carolinians and a measurable reduction in potent and harmful heat-trapping gas, thereby saving North Carolinians billions of dollars in avoided costs for health care and disaster preparedness, relief, and rebuilding. By way of example, in 2018, Hurricane Florence resulted in losses of $26.4 billion, followed a few weeks later by Hurricane Michael, costing $27.5 billion. From 2010 to 2019, North Carolina sustained crop losses of $1.3 billion due to drought, flooding, hurricanes, and other extreme weather events.

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[12] United Nations, *Cut methane emissions to avert global temperature rise, UN-backed study urges*, United Nations News (May 6, 2021), https://news.un.org/en/story/2021/05/1091402.

[13] Climate and Clean Air Coalition, et al., Global Methane Assessment Benefits and Costs of Mitigating Methane Emissions Summary for Decision Makers (2021), https://www.ccacoalition.org/en/resources/global-methane-assessment-summary-decision-makers.

[14] *Id.* at 5.

North Carolina public policy recognizes the importance of taking meaningful action to curb the ongoing climate crisis. The climate impacts of Duke Energy's policies must be considered in its proposed NEM tariff. The Proposal's disincentives for solar and consequent increased dependence on fossil fuels would halt and reverse the state's progress toward achieving its carbon reduction goals, imposing additional social and economic costs onto North Carolina's citizens. On this basis, the Proposal must be rejected.

III. Duke Energy's Proposal is Devoid of a Plan for Low- and Moderate-Income Communities and Any Future Proposals Must Provide for the Implementation of an Improved Distributed Solar Energy Program.

Under North Carolina law, every rate demanded or received by a public utility must be "just and reasonable." N.C. Gen. Stat. § 62-131(a). The burden is on the public utilities to demonstrate that any rate change is just and reasonable. N.C. Gen. Stat. § 62-134(c). Duke Energy's Proposal does not meet these statutory mandates because it does not include a plan for low- and moderate-income households. The NCUC must reject Duke Energy's Proposal for failure to meet these statutory obligations.

Equitable community solar projects have successfully been deployed throughout the United States, benefiting renters and residents of multi-tenant buildings. Such projects can help provide Duke Energy with a framework for distributed solar implementation in North Carolina.[15] An improved distributed solar energy program will increase equity of access by supporting the participation of

[15] Solar United Neighbors, Energy Equity and Inclusion Case Statement, https://www.solarunitedneighbors.org/wp-content/uploads/2021/11/Case-statement_final.pdf (last visited Mar. 26, 2022).

diverse customer segments in the solar energy market and clean energy transition. An equitable distributed solar program may include any non-utility-scale, locally based, community-supported, and community-benefiting means of deploying renewable energy solutions to multiple households.

Virtual Net Metering ("VNM") could also be developed for use in conjunction with community solar programs to facilitate community aggregated generation and distribution. The VNM approach would help allocate the value of exported electricity among all customer-generators "behind the meter" in an aggregated installation. As explained below, a distributed solar energy deployment model may also contribute to system stability, local supply, resiliency, satisfaction of peak demands during both summer and winter periods, and avoidance of new generation and infrastructure construction.

Intervenors respectfully request that the NCUC reject Duke Energy's Proposal until a plan is developed that addresses community aggregation and low-and-moderate-income customers as required by statute.

IV. Duke Energy's Proposal Disincentivizes Customer-Sited Solar While Unjustly Profiting Off of Customer-Sited Generated Energy.

Customer-sited energy generation reduces Duke Energy's capital costs for new energy generation because customers carry all capital costs relating to equipment and installation of on-site generation. Rather than incentivizing customers to carry those capital costs, the proposal penalizes customer generators by 1) imposing additional fixed charges – the "Minimum Monthly Bill" and 2) by significantly reducing the value of customer generated energy exported to the grid.

Duke Energy fails to include any calculation of the impacts from the proposed tariffs for solar customers' return on their investment in their Proposal. Commentators generally agree that there will be a negative impact on solar customers, but the degree of the impact from these changes is strongly debated. Some reports describe the changes as "slightly smaller credits and slightly increased charges" under the proposed NEM revisions.[16]

Others, however, based on Duke Energy's responses to data requests, project that the proposed tariffs will reduce the economic value of rooftop solar for NEM customers by about thirty percent (30%) or more.[17] This rate-based cost signal discourages investment in on-site generation and would eliminate the energy generating and social benefits of customer-sited clean energy generation.

The proposed pricing differential between rates charged for energy consumed and credits given for energy exported to the grid is inequitable and is

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[16] John Downey, *Duke Energy, pro-solar groups agree on proposed rules and rates for residential solar customers*, Charlotte Business Journal (Dec. 1, 2021), https://www.newsbreak.com/news/2449405938350/duke-energy-pro-solar-groups-agree-on-proposed-rules-and-rates-for-residential-solar-customers.

[17] Letter from Robert Kingery, et al., rooftop solar installers operating in North Carolina, to Governor Roy Cooper (Mar. 10, 2022), https://info.southern-energy.com/hubfs/HES/HES%20-%20Net%20Metering%20Doc%202022/Protecting%20North%20Carolina%E2%80%99s%20Growing%20Rooftop%20Solar%20Power%20Industry.pdf; *see also* Initial Comments of Donald E. Oulman, Docket No. E-100, Sub 180 CS at 2 (Mar. 28, 2022), available at: https://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=8be98c1a-9c1d-47a2-b68a-741f4cdc5561 (proposed NEM rate structure versus the current flat-rate tariff would result in a 100% increase in cost of electricity); *and* Comments of Stephen Jurovics, Ph.D, et al., Docket No. E-100, Sub 180 CS at 2 (Mar. 7, 2022), available at: https://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=cce09d7d-b957-4102-83e6-57ebdad3b587 (proposed NEM $79.52 tariff is a 3-fold increase vs the current $26.44 tariff).

patently unfair to customer generators. Under the proposed Rider RSC, DEC customers generators would be charged $0.168762 - $0.192297 per kWh for energy consumed during peak periods or $0.077044 - $0.084187 per kWh during non-peak periods. They would be credited at those same rates for solar power exported to the grid during those periods, but only for the number of kWh equal to their imports during those periods. Any "Net Excess Energy" would be credited at a flat rate of only $0.0268 per kWh, regardless of the time of generation.[18]

Not only is the credit proposed for energy generating consumers unfair and inequitable, the differential between rates charged and credits allowed also demonstrates that Duke Energy is trying to reap an unfair windfall with this pricing scheme.

V. Duke Energy's Proposal Disregards the Societal Benefits of Distributed Energy Resources.

Duke Energy's Proposal fails to evaluate the societal benefits of customer-sited generation. These benefits include offsetting fossil fuel generation thereby reducing carbon emissions, enhancing local economies, and improving grid

[18] *See* Duke Energy Carolinas, LLC's and Duke Energy Progress, LLC's Joint Petition for Approval of Revised Net Energy Metering Tariffs, Docket No. E-100, Sub 180, Ex. No. 1, pdf p. 31, Rider RSC (NC) (DEC); *see also* Duke Energy Carolinas, LLC's Compliance Tariffs for Dynamic Rate Pilots and Advanced TOU Rates, Docket Nos. E-7, Sub 1146 and E-7, Sub 1253, pdf pp. 54 and 57. Similarly, DEP customer-generators would be charged $0.19315 on-peak and $0.09756 off-peak per kWh, while receiving credit at only $0.0264 per kWh for net excess generation. *See* Duke Energy Progress, LLC's Compliance Tariffs, Docket Nos. E-2, Subs 1219 and 1280, pdf pp. 8-9; *see also* Duke Energy Carolinas, LLC's and Duke Energy Progress, LLC's Joint Petition for Approval of Revised Net Energy Metering Tariffs, Docket No. E-100, Sub 180, Ex. No. 2, pdf p. 41, Rider RSC-2 (DEP).

resiliency. Until these benefits are accounted for, the NCUC must reject Duke Energy's Proposal.

As presented, Duke Energy's Proposal will stunt the growth of solar adoption in North Carolina, which, as of 2021, is rated third nationally for solar growth[19], indicating that solar energy has the potential to play a vital role in achieving the goals of H.B. 951 as outlined above. Duke Energy's Proposal makes it more expensive to install rooftop solar and unnecessarily complicates the process of compensating NEM customers for the energy that they contribute to the grid. The Proposal discourages consumers from solar energy when it should be encouraging and incentivizing its adoption to combat the climate crisis. Facilitating the growth of rooftop solar would reduce grid power demand and help to eliminate the need to expand upon expensive and polluting fossil fuel infrastructure.

A. Rooftop solar in North Carolina enriches local economies and is an underutilized resource.

Between 2017 and 2021, DEP spent an average of $280 million on coal and $706 million on natural gas in terms of purchased fuel and transport costs, while DEC spent an average of $600 million and $467 million on coal and natural gas, respectively.[20] In total, during that 5-year period, Duke Energy spent over $10 billion to import coal and natural gas for North Carolina consumption. These

[19] Sarah Nick, et al., Renewables on the Rise 2021: The rapid growth of renewables, electric vehicles and other building blocks of a clean energy future, Frontier Group and Environment America Research & Policy Center (Nov. 2021), https://environmentamerica.org/sites/environment/files/Renewables-On-The-Rise-21.pdf at 6 (Table 1: Top States for Solar Electricity Growth, 2011 to 2020).

[20] **Attachment A**, DEP & DEC's Responses to NC-APPPL's Data Request No. 1-2.

expensive imports pollute North Carolina's air and water, contribute greenhouse gases to the atmosphere, and harm the health of its residents, particularly those living near fossil fuel plants.

As of the end of 2021, North Carolina was home to 213 solar companies, including 39 manufacturers and 84 installers and developers.[21] Duke Energy's Proposal substantially undermines the future of North Carolina's solar industry and its prospective customers, as well as the broader North Carolina economy. Solar companies create local jobs while competing to provide the best value for North Carolina consumers. Limiting the growth of these companies by disincentivizing customer-sited solar would throttle a currently thriving competitive market.

North Carolina's increasing share of clean energy generation also helps attract companies that are determined to provide services and products using clean, renewable, domestic power. And, like wind power, the supply costs of solar generated energy are free.

Rooftop solar is a significant resource that could provide almost 40% of present total national electric sector sales.[22] North Carolina ranks 31st nationally in terms of solar installations per capita.[23] However, according to a National Renewable Energy Laboratory analysis, North Carolina has the potential to

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[21] Solar Energy Industries Association, *North Carolina Solar*, https://www.seia.org/state-solar-policy/north-carolina-solar (last visited Mar. 26, 2022).

[22] Pieter Gagnon, et al., Rooftop Solar Photovoltaic Technical Potential in the United States, National Renewable Energy Laboratory (Jan. 2016), https://www.nrel.gov/docs/fy16osti/65586.pdf at 19.

[23] Solar Energy Insights, *States with the Most Solar Installations Per Capita*, https://solarpower.guide/solar-energy-insights/states-most-solar-installations (last visted Mar. 26, 2022).

generate over 30% of the state's energy needs with 35 GW of installed rooftop capacity, deploying 252 million square meters of suitable rooftop.[24]

There are an estimated 19,400 favorable residential solar rooftops in North Carolina.[25] If each of these households derived even half their electricity needs from residential rooftop solar arrays, the grid load would decrease by about 9,700 MW.[26] Full residential potential plus potential commercial and industrial rooftop solar capabilities would reduce grid load by 28,700 MW.[27] Adding brownfield solar development would increase total solar potential to 86,000 MW.[28] Fulfilling North Carolina's residential solar potential alone could replace about 38% of North Carolina's coal and natural gas generating capacity at a lower direct cost to consumers.[29] Indirect costs and externalities associated with reduced negative health impacts from fossil fuel production would also decline significantly.

North Carolina currently has the demonstrated capacity for solar installation at a rate of about 1,000 MW per year, primarily on the utility-scale. By promoting solar policies that encourage rooftop solar, North Carolina could be building resilience while cleaning the grid. Fulfilling the residential potential would create

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[24] Gagnon, *supra* note 19.
[25] Bill Powers, P.E., North Carolina Clean Path 2025: Achieving an Economical Clean Energy Future (Aug. 2017), https://www.ncwarn.org/wp-content/uploads/NC-CLEAN-PATH-2025-FINAL-8-9-17.pdf at 57 (Table 25. Estimate of North Carolina Local Solar and Brownfield PV Potential).
[26] *Id.*
[27] *Id.* at 57 (Table 26. Estimate of North Carolina Rooftop Solar Potential).
[28] *Id.*at 57 (Table 25. Estimate of North Carolina Local Solar and Brownfield PV Potential).
[29] *Id.* at 37-38.

approximately 14,000 jobs across the state.[30] As demonstrated in other states with more favorable policies, significant rates of solar growth are already occurring.[31]

B. Distributed generation is integral to energy resiliency and diversity.

For historical reasons, North Carolina's electric power system is almost exclusively reliant upon centralized generation. However, the manifold benefits of distributed energy generation are challenging many of the assumptions that drove centralization in the past. At the same time, climate disturbance is heightening the need for energy system resilience. A resilient distribution system utilizes local resources such as customer-owned solar photovoltaics ("PV") and battery storage to quickly reconfigure power flows and recover electricity services during disturbance events. Distributed generation can help prepare for and adapt to changing conditions to withstand and rapidly recover from disturbances like weather events, accidents, and cyberattacks.[32]

Discouraging the installation of rooftop solar inappropriately devalues its benefits, one of which is microgrids. The microgrid is a valuable and increasingly necessary component of a safe grid, both locally and nationally. Solar powered microgrids can provide electricity when the main grid is down, whether due to storms, accidents, or sabotage. Customers with solar plus battery storage are not

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[30] *Id.* at 39-40.

[31] Solar Energy Industries Association, *Solar Industry Research Data*, https://www.seia.org/solar-industry-research-data (last visited Mar. 26, 2022).

[32] U.S. Department of Energy, *Resilient Distribution Systems Powered by Solar Energy*, Office of Energy Efficiency & Renewable Energy Solar Energy Technologies Office, https://www.energy.gov/eere/solar/resilient-distribution-systems-powered-solar-energy (last visited Mar. 26, 2022).

only able to power themselves, but they can also provide power to their neighbors while access to the main grid is shut off by inverters.[33]

Furthermore, microgrids help mitigate risk by avoiding the centralized vulnerabilities common to the existing power grid. For example, the U.S. military utilizes microgrids[34] to maintain power during critical missions and has established partnerships with both the public and private sectors to help with overall energy resilience.[35] Microgrids can help improve overall national security by ensuring that power stays on during attacks designed to target power sources as well as during weather events that can knock out a centralized system.[36]

Microgrids are essential for any energy system to function in an emergency and go hand-in-hand with promoting a solar plus battery future. The benefits of distributed generation are substantial, and the NCUC should prioritize customer reliability in its adoption of future NEM tariffs.

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[33] U.S. Department of Energy, *Solar and Resilience Basics*, Office of Energy Efficiency & Renewable Energy Solar Energy Technologies Office, https://www.energy.gov/eere/solar/solar-and-resilience-basics (last visited Mar. 26, 2022).

[34] Emma Merchant, *US Military Microgrids Are Using More Renewables and Batteries*, Wood Mackenzie Business (Nov. 9, 2018), https://www.greentechmedia.com/articles/read/for-the-u-s-military-energy-resilience-has-long-been-a-priority.

[35] *Id.*

[36] Desmond Wheatley, *Can Microgrids Help Reduce The Vulnerabilities Of The U.S. Power Grid?,* Forbes (Nov. 11, 2021), https://www.forbes.com/sites/forbesbusinesscouncil/2021/11/11/can-microgrids-help-reduce-the-vulnerabilities-of-the-us-power-grid/?sh=76eaffde511e.

VI. Intervenors' Proposed Framework for a Climate Friendly NEM Tariff that Serves the Public Interest.

The statutory framework of Chapter 62 of the North Carolina General Statutes vests the NCUC with authority to regulate public utilities and establish NEM rates.[37] Therefore, because the NCUC oversees and administers the establishment of NEM tariffs, a framework that considers the societal benefits of solar generation and is aimed towards reducing fossil fuel dependency is essential.

To meet the needs of energy customers in North Carolina, achieve the greenhouse gas reduction goals stipulated in H.B. 951, and address the limitations of Duke Energy's Proposal, Intervenors offer the following elements to guide the NCUC in its future implementation of climate friendly NEM tariffs:

1. As a more demonstrable way to correct the cost-shift that Duke Energy alleges in its Proposal, Duke Energy should establish programs to allow low-income customers to benefit from solar power. Examples include on-bill financing of solar and batteries, an improved community solar program with virtual net metering,[38] or a rooftop solar low-income "power" fund to which rooftop solar customers could donate all or a portion of their excess generation,[39] with donations matched by the Duke Energy Foundation.

2. Require Duke Energy to offer a 10-year rebate program and demand response program for homeowners and businesses with solar and battery storage to facilitate Virtual Power Plants ("VPPs") to help Duke Energy mitigate its winter/summer peak demand problem by purchasing

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[37] N.C. Gen. Stat. §§ 62-2(b), 62-126.4.

[38] Low Income Solar Policy Guide, *Net Metering/Virtual Net Metering*, https://www.lowincomesolar.org/toolbox/net-metering/ (last visited Mar. 28, 2022).

[39] *See, e.g.*, Electric Power Division, *Net Metering Guide, Credit Allocation*, Commonwealth of Massachusetts, https://www.mass.gov/guides/net-metering-guide#-1.-net-metering-basics- (last visited Mar. 28, 2022); Janine Migden-Ostrander, et al., *Excess Rooftop Solar Generation, A Source of Help for Neighbors*, Regulatory Assistance Project (Oct. 17, 2017), https://www.raponline.org/blog/excess-rooftop-solar-generation-source-help-neighbors/.

homeowners' stored energy during peak demand periods, as utilities around the country and elsewhere are doing.[40]

3. Require broad-based customer engagement on time-of-use rates and rebates tied to beneficial usage behavior, where technology such as a smart device management tool is offered to enable beneficial usage. Key components can be rebates for heat-pumps, energy storage, solar-plus-storage systems, and electric vehicle chargers tied to grid-beneficial operation.

4. Require a larger difference between rates paid off- and on-peak so as to send a meaningful price signal to customers.[41]

5. Allow third-party companies adequate access to the market to aggregate Distributed Energy Resources ("DERs") for maximum benefit to the grid.[42]

6. Require rapid deployment of energy efficiency programs so that daily variation in demand from heating and cooling is minimized to balance load and generation, which will continue to be a challenge as the region electrifies and the grid comes to host more variable resources.

7. Improve customer controlled smart meter technology so that they can more effectively manage and maximize the value of their DERs to the grid.

8. NEM customers should continue to be compensated at the current and straightforward retail rate for all power delivered to the grid, with no exports compensated at "avoided cost" or reduced rates. This would provide a quicker payback of a customer's solar investment and much simpler modeling of that payback by rooftop solar companies, thus promoting rather than inhibiting the growth of rooftop solar.

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[40] Ethan Howland, *Utilities advance virtual power plant projects*, American Public Power Association (Sept. 6, 2019), https://www.publicpower.org/periodical/article/utilities-advance-virtual-power-plant-projects; Lotte Lehmbruck, et al., Behind and Beyond the Meter Digitalization, Aggregation, Optimization, Monetization Chapter 10, Academic Press (2020).

[41] *See*, *e.g.*, Dominion Energy South Carolina, Inc., Rate 5 Residential Service Time of Use Pursuant to Public Service Commission of South Carolina Order No. 2021-570, https://www.dominionenergy.com/-/media/pdfs/south-carolina/rates-and-tariffs/rate5.pdf.

[42] Gavin Bade, *DER Aggregation 101: what you need to know*, Utility Dive (July 1, 2017), https://www.utilitydive.com/news/der-aggregation-101-what-you-need-to-know/447837/.

CONCLUSION

Duke Energy's Proposal must be rejected. It is premature and undermines the carbon reduction goals mandated by H.B. 951 by disincentivizing rooftop solar, and undercuts rather than supports the development of the in-process Carbon Plan. Furthermore, Duke Energy's Proposal must be rejected because it disregards the societal benefits of distributed energy resources and does not include a plan for low-and moderate-income communities, thereby failing to prove that their proposed rate changes are just and reasonable, as required by North Carolina law.

In light of the foregoing considerations, the NCUC must reject Duke Energy's Proposal. Prior to establishing future NEM tariffs, Intervenors request that the NCUC require an independent Value of Solar Study to determine the full costs and benefits of solar pursuant to § 62-126.4(b) of the North Carolina General Statutes. Intervenors further urge, that upon completion of an independent Value of Solar Study, the NCUC to require Duke Energy to file a revised Proposal that takes into account the benefits and costs of customer-sited energy generation and contains climate-friendly elements that serve the public interest.

[Signature Page to Follow]

Respectfully submitted this 29th day of March, 2022.

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CERTIFICATE OF SERVICE

I hereby certify that I have this day served a copy of the foregoing *Joint Initial Comments of 350 Triangle, 350 Charlotte, and the North Carolina Alliance to Protect Our People and the Places We Live* upon each of the parties of record in these proceedings or their attorneys of record by deposit in the U.S. Mail, postage prepaid, or by email transmission.

This the 29th day of March, 2022.

LAW OFFICE OF F. BRYAN BRICE, JR.

By: /s/ Andrea C. Bonvecchio
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