STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-100, SUB 180

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of		
Investigation of Proposed Net Metering	)	ORDER APPROVING
Policy Changes	)	REVISED NET METERING
	)	TARIFFS

BY THE COMMISSION: On November 29, 2021, Duke Energy Progress, LLC (DEP) and Duke Energy Carolinas, LLC (DEC) (collectively, Duke or Companies), filed a Joint Application for Approval of Net Energy Metering Tariffs in Compliance with N.C. Gen. Stat. § 62-126.4 and S.L. 2021-165 (HB 951) (Application). In the Application, Duke petitions the Commission to issue an order approving its proposed net energy metering tariffs (NEM tariffs). A Memorandum of Understanding (MOU) between Duke and the North Carolina Sustainable Energy Association; the Southern Environmental Law Center on behalf of Vote Solar and the Southern Alliance for Clean Energy; Sunrun, Inc.; and the Solar Energy Industries Association was filed with the Application.

On January 10, 2022, the Commission established this docket and issued an order requesting comments and reply comments on the Application.[1] After extensions of time were granted, initial comments were filed by March 29, 2022, reply comments by May 20, 2022, and further responsive comments by May 27, 2022.

The intervention and participation of the North Carolina Utilities Commission – Public Staff (Public Staff) is recognized as a party of record in all proceedings before the Commission pursuant to N.C.G.S. § 62-15(d) and the North Carolina Attorney General's Office (AGO) intervened pursuant to N.C.G.S. § 62-20. In addition to the Public Staff and AGO, the Commission permitted numerous additional parties to intervene in this proceeding, including the North Carolina Sustainable Energy Association (NCSEA); NC WARN; Carolina Industrial Group for Fair Utility Rates II and Carolina Industrial Group for Fair Utility Rates III (collectively, CIGFUR); the Southern Alliance for Clean Energy (SACE) and Vote Solar; the Environmental Working Group (EWG); 350 Triangle; the North Carolina Alliance to Protect our People and the Places We Live (NC-APPPL); 350 Charlotte; the Solar Energy Industries Association (SEIA); Sundance Power Systems, Inc., Southern Energy Management, Inc., and Yes Solar Solutions (collectively, the North Carolina Rooftop Solar Installers or NCRSI); the North Carolina Climate Solutions Coalition (NCCSC); Donald E. Oulman; Sunrise Movement Durham Hub (Sunrise Durham); and the North Carolina Electric Membership Corporation (NCEMC).

[1] Duke's Application was originally filed in in Docket Nos. E-7, Sub 1214, E-2, Sub 1219, and E-2, Sub 1076.

On March 28, 2022, Mr. Oulman filed initial comments. On March 29, 2022, initial comments were filed by the Public Staff; SEIA; jointly by NCSEA, SACE, and Vote Solar (collectively, NCSEA, et al.); by NCEMC; jointly by NC WARN, NCCSC, and Sunrise Durham (collectively, NC WARN, et al.); jointly by 350 Triangle, 350 Charlotte, and NC-APPPL (collectively, 350 Triangle, et al.); by the AGO; and by EWG. On May 12, 2022, NC WARN, et al.; EWG; 350 Triangle, et al.; and NCSEA, et al. filed reply comments.

On May 19, 2022, Duke and the North Carolina Rooftop Solar Installers filed a Stipulation regarding a transitional rate option (Proposed Bridge Rate) for NEM customers. On May 20, 2022, NCRSI, SEIA, and Duke filed reply comments in support of the Proposed Bridge Rate. Also on May 20, 2022, the Public Staff filed a letter in lieu of reply comments regarding the Proposed Bridge Rate.

On May 26, 2022, EWG filed sur-reply comments opposing the Application and the Proposed Bridge Rate. On May 27, 2022, the Public Staff filed a letter in lieu of further responsive comments supporting the Proposed Bridge Rate; NC WARN, et al. filed joint sur-reply comments; Mr. Oulman filed responsive comments opposing the Stipulation; and NCSEA, et al. filed joint responsive comments supporting the Stipulation.

On June 16, 2022, EWG, 350 Triangle, et al., and NC WARN, et al. filed a joint motion requesting that an evidentiary hearing be held in this matter (Joint Motion). On June 20, 2022, the Commission issued an Order allowing the parties to file responses to the Joint Motion on or before June 24, 2022. Responses were filed on June 23, 2022, by Duke and on June 24, 2022, by NCSEA, et al. On November 8, 2022, the Commission issued an order denying the Joint Motion and requiring the filing of proposed orders and briefs.

NEM HISTORY

The Commission first approved NEM rates in its 2000 Order in Docket No. E-100, Sub 83. Order Allowing Rate Riders to Become Effective and Requesting Comment, *In re Investigation of Proposed Net Metering Rule*, No. E-100, Sub 83 (N.C.U.C. Aug. 4, 2000) (2000 NEM Order). In the 2000 NEM Order, the Commission approved pilot photovoltaic (PV) rate riders for a maximum of 25 customers per utility. The pilot riders provided residential and nonresidential participating customers owning small-scale PV generating facilities of 10 kilowatts (kW) or less in capacity the opportunity to operate their facilities in parallel with the utility, to use the generation from the PV facility to offset some or all of the electricity that would otherwise be supplied to them by the utility, and to receive a credit for any excess generation provided to the utility. Participating nonresidential customers would also be subject to metering and stand-by charges, but residential participants would not pay those charges.

The Commission's October 20, 2005 Order Adopting Net Metering (2005 NEM Order) established an initial framework for NEM in North Carolina. The Commission noted that the Public Staff had concerns about discrimination and cross-subsidies because a

net metering customer, who could impose demand and consume energy during on-peak periods while generating during off-peak periods, would pay a utility nothing for standby service and transmission and distribution facilities and could impose additional administrative costs and burdens on the utility. 2005 NEM Order at 1-2. The 2005 NEM Order noted that all parties conceded the potential for subsidies in favor of participating customers.[2] The Order referred to NEM as a billing arrangement whereby the customer-generator is billed according to the difference over a billing period between the amount of energy consumed by the customer at its premises and the amount of energy generated by the renewable energy facility. Net metering allowed the customer generator to receive a billing credit for excess generation delivered to the utility grid.

Other requirements that the 2005 NEM Order established were: (1) a capacity size limit of 20 kW for residential and 100 kW for nonresidential NEM systems; (2) a prohibition on the use of battery storage; (3) a requirement that customers must be on a time-of-use (TOU) rate schedule; (4) compensation for excess energy credits at rates commensurate with the TOU period (on-peak rates applied to on-peak excess energy); (5) elimination of all types of stand-by charges; and (6) a requirement that excess energy credits apply to a subsequent monthly billing period and that they be reset to zero twice yearly at the beginning of each summer and winter billing season.

The Commission modified the initial NEM tariffs in its July 6, 2006 Order on Reconsideration Modifying Net Metering Tariffs and Riders (2006 NEM Order) by requiring utilities to amend their NEM tariffs and riders to allow for any residual excess on-peak energy not consumed by the participating customer during on-peak periods to be applied against any remaining off-peak consumption during a monthly billing period. 2006 NEM Order at 6. The 2006 NEM Order also, in part, modified the reset of excess energy credits by requiring an annual reset at the beginning of the summer season, eliminating the prohibition on PV generating facilities coupled with batteries, and limiting NEM contracts to a term of no longer than one year unless mutually agreed by the customer and utility. The Commission, however, maintained its position that the TOU-demand rate schedule requirement for NEM was not too complicated as well as its position that renewable energy certificates (RECs) associated with excess energy would

[2] This issue, commonly referred to by the parties and throughout this order as "cross-subsidization," can be explained in the following way. Duke's existing tariffs to residential customers include a fixed charge component, referred to as the monthly "basic facilities charge," and a charge based on electricity consumption. Duke contends that the basic facilities charge, as established in its general rate cases, does not fully cover all the fixed costs of service to an individual residential customer. The Commission has, to date, accepted Duke's cost-of-service studies and has set the basic facilities charge at levels that are less than Duke's cost-of-service studies show are necessary for full recovery of its fixed costs of service. The remaining portion of fixed costs not covered by the basic facilities charge is recovered instead through the variable volumetric charge for energy usage. For non-NEM customers, this paradigm generally leads to full recovery of all fixed and variable costs of service. NEM customers, however, are effectively able to reduce or even eliminate in some instances and for some billing periods their energy charges, thereby avoiding the portion of the utility's fixed costs that are recovered through the variable energy charge and not through the monthly basic facilities charge. The effect of this is that those fixed costs unrecovered from NEM customers must be recovered from non-NEM customers. This potential shifting of a portion of the utility's fixed costs of service from NEM to non-NEM customers is what is called "cross-subsidization."

be transferred to the utility to help offset the costs otherwise borne by the utility and ratepayers in general that were incurred to accommodate NEM. *Id*. at 6-7.

On August 20, 2007, the General Assembly enacted Session Law 2007-397, or Senate Bill 3 (SB 3), which directed the Commission to "[c]onsider whether it is in the public interest to adopt rules for electric public utilities for net metering of renewable energy facilities with a generation capacity of one megawatt or less." N.C.G.S. § 62-133.8(i)(6). In response to SB 3, the Commission issued its Order Amending Net Metering Policy (2009 NEM Order) on March 31, 2009, concluding that the NEM rule needed revision to support the new State policy to further develop renewable energy and enhance the value of NEM as a viable alternative for customers.

The 2009 NEM Order required utilities to offer customer-generators the option of NEM under any rate schedule available to customers in the same rate class but allowed customers on the TOU-demand tariff to retain all the RECs associated with the customer's generation while allowing the utility to obtain the RECs from NEM customers on all other retail rate schedules at no cost as part of the NEM arrangement. The Commission further determined that NEM customers on any TOU rate schedule must have on-peak generation first applied to offset on-peak consumption and excess off-peak generation first applied to offset off-peak consumption.

While the Commission increased the size limit on eligible customer-owned generation to 1 MW and allowed credit for excess electricity generated during a monthly billing period to be carried forward to the following monthly billing period, it maintained the reset of unused and unapplied energy credits to zero at the beginning of the summer season as a means of limiting the size of individual NEM facilities and limiting the program to use by consumer generators only and not by commercial wholesale generators. The Commission also retained the policy of applying stand-by charges to NEM facilities that exceeded 20 kW and 100 kW limits.

In adopting these revisions to North Carolina's NEM policies, the Commission acknowledged the potential of cross-subsidies but decided that such potential was outweighed by the potential for non-quantified benefits and the clearly enunciated State policy favoring development of additional renewable generation. *Id.* at 11. The Commission concluded that in approving these revisions to the net metering policy, the Commission sought to strike a reasonable balance between utilities, net metering customers, and the utilities' non-NEM remaining customers while recognizing the significance of changes in State policy. 2009 NEM Order at 15.

In 2017, the General Assembly passed Session Law 2017-192, or House Bill 589 (HB 589). House Bill 589 encourages "leasing of and subscription to solar energy facilities," while making clear that "cross-subsidization should be avoided by holding harmless … customers that do not participate in such arrangements." N.C.G.S. § 62-126.2. House Bill 589 requires that "[e]ach electric public utility shall file for Commission approval revised net metering rates" and that such rates should be "established only after an investigation of the costs and benefits of customer-sited

generation." N.C.G.S. § 62-126.4(a)-(b). House Bill 589 further requires the Commission to "establish net metering rates under all tariff designs that ensure that the net metering retail customer pays its full fixed cost of service." N.C.G.S. § 62-126.4(b). Although HB 589 mandates that Duke file revised NEM rates, it permits existing NEM customers to take service under existing programs until January 1, 2027. N.C.G.S. § 62-126.4(c).

Lastly, House Bill 951, signed into law on October 13, 2021, provides support for the development of renewable generation as a means of achieving carbon reduction goals. House Bill 951 not only articulates specific carbon policy goals for the utilities, it also requires that utilities pursue a least-cost means of developing their carbon reduction plans that require consideration of power generation, transmission and distribution (T&D), grid modernization, energy storage, energy efficiency (EE), demand-side management (DSM), and the latest technological breakthroughs in order to achieve a least-cost approach. House Bill 951 also requires, among other things, the Commission to evaluate and modify as necessary NEM rates.

APPLICATION FOR REVISED NEM TARIFFS

In its Application, Duke states that it fulfilled the requirements of N.C.G.S. § 62-126.4(b) by conducting an investigation of the costs and benefits of customer-sited generation through its Rate Design Study.[3] According to Duke, the results of the Rate Design Study provide a detailed look at the current costs and benefits of serving NEM customers under existing NEM programs. Using the results of the study, Duke contends that it created rate structures that accurately capture the current costs to serve these customers while ensuring NEM customers pay their full fixed cost of service in accordance with HB 589.

Duke states that the Rate Design Study included robust stakeholder input, feedback, and interaction with a broad range of interested parties over a number of months. Stakeholders included over 20 organizations that represented a broad range of interests. According to Duke, the Rate Design Study and corresponding stakeholder process were critical in developing the NEM tariffs because they allowed Duke to exchange studies, data, and modeling. Duke states that through this process, the Companies received feedback from stakeholders that informed Duke's efforts to comply with HB 589.

Duke states that the Rate Design Study explored the possibility that residential NEM customers were not paying their full fixed cost of service — an issue first identified by the Commission in the 2005 and 2009 NEM Orders — resulting in upward pressure on all residential customers' rates. The Rate Design Study's conclusions on this issue were based on both a marginal cost study and an embedded cost study that applied industry-standard rate design metrics to the full output of the PV system. The embedded cost analysis estimated a potential monthly subsidy in favor of each NEM customer between $25 and $30 for DEC and between $35 and $40 for DEP. The marginal cost

[3] Duke's Rate Design Study was required by the Commission in Docket Nos. E-7, Sub 1214 and E-2, Sub 1219 (collectively, the Rate Case Dockets).

framework estimated a potential monthly subsidy in favor of each NEM customer between $30 and $35 for DEC and between $58 and $63 for DEP.

Duke's Application asserts that the under-recovery of both the embedded and marginal costs from residential NEM customers primarily arises from the simplistic NEM rate design currently in effect. The current rate design for non-NEM customers, which recovers both fixed and variable costs in a single rate based on volumetric energy usage, is generally adequate to recover all costs of service for non-NEM customers due to the fact that there is a higher correlation between such customers' demand and total energy usage. However, because NEM customers are able to reduce or avoid significant energy purchases from their utility based on their on-site generation, they are able to avoid paying a significant portion of the demand and other fixed costs that are nonetheless still incurred by the utility in order to serve such customers. The simplistic rate design results in NEM customers receiving bill reductions larger than the actual reduction in the utility's cost to serve them. Thus, Duke asserts that NEM customers are not paying the full cost to provide them with electric service, and this cost recovery gap is currently socialized and collected from all ratepayers. Duke contends that the revised NEM tariffs proposed in the Application resolve the issue of cross-subsidization.

According to Duke, the proposed NEM tariffs are new innovative rate structures in compliance with HB 589 and HB 951 that work in conjunction with TOU and critical peak pricing (CPP) rate schedules to align the costs to serve NEM customers and represent best practices to ensure each customer pays its share of the full fixed costs of service, thereby minimizing the risk of cross-subsidization among participating NEM customers and non-NEM customers. Duke also states that if the NEM tariffs are approved, the basic design and structure of the NEM tariffs would not be changed for ten years to provide consistency and predictability for NEM customers.

The Application describes five specific rate components of the NEM tariffs and explains how each works together to achieve the principles established in HB 589 and HB 951.

Monthly Minimum Bill

The first element is a monthly minimum bill (MMB) amount which will help ensure recovery of costs related to the distribution system that are largely fixed in nature. Duke states that this monthly charge more accurately aligns costs with benefits of serving NEM customers because distribution costs are allocated per customer or vary based on the demand-related costs to serve rather than energy usage per customer. Duke explains the MMB ensures these costs are properly recovered from customers creating such costs. The initial amounts of the MMB are proposed to be $22 for DEC and $28 for DEP. The Application states the MMB will be applied by calculating the sum of the current basic customer charge or basic facilities charge (BFC) in existing rates to which is added the portion of the monthly volumetric energy charges specific to the customer, together with any other distribution costs and riders. If the sum of those charges is less than the

proposed MMB, the MMB charge would apply to residential NEM bills. If the sum of those costs is equal to or greater than the MMB, there would be no MMB charge.

Monthly Grid Access Fee

Second, a new proposed Grid Access Fee (GAF) would apply only to solar facilities with a capacity rating greater than 15 kilowatts direct current (kW_{DC}). The Companies state that customers with large system sizes represent the greatest potential for under-recovery of fixed costs because those customers' billed kilowatt-hours (kWh) can be reduced substantially by the net metering arrangement. Duke states that the GAF helps mitigate this risk by ensuring the recovery of distribution demand costs, which is why the GAF is set in accordance with the distribution demand unit cost. DEP proposes a GAF of $1.50 per kW per month, while DEC proposes a GAF of $2.05 per kW per month for all capacity in excess of 15 kW_{DC}.

Non-Bypassable Charges

The third element of the new tariffs addresses certain riders and charges that are not included in Duke's current energy rates. These non-bypassable charges are designed to recover all costs related to DSM/EE programs, securitized storm costs, and any other similar charges which are authorized by the Commission for recovery through riders that are not dependent on energy usage or volumetric charges. Duke states that this portion of the new NEM tariffs will be based upon the full capacity rating of the NEM facility. DEC's and DEP's proposed non-bypassable charges are $0.36 and $0.44 per kW per month, respectively. The rate is derived from estimating the total kWh bypassed per kW_{DC} of solar. According to Duke, without requiring these charges, the program expenses and non-energy linked costs would be avoided by NEM customers and ultimately collected inappropriately from non-solar customers.

Netting and Exports

The fourth element of the tariffs addresses netting of energy exports and energy consumption from NEM customer generating facilities. Duke states that certain core NEM principles will remain the same, such as a customer's ability to consume the power generated from on-site, customer-owned generating facilities and export power that exceeds the customer's usage to the utility's grid. Customers would also be able to net exported energy to the utility grid against consumption by the customer from the utility grid over the month within each TOU pricing period, with any net consumption billed to the customer at the rate in effect for that pricing period. Duke explains that at the end of the month, NEM customers would be credited for any net monthly exports to the utility grid at an annualized rate (weighted average rate for all hours assuming a fixed block of energy) for avoided energy costs, as specified by the per kWh rates at Duke's Commission-approved avoided cost rates. Duke proposes that during CPP-designated hours, the CPP rate would apply to all energy consumption, and any energy exports during the CPP hours would be considered non-CPP peak exports and would only offset non-CPP peak consumption.

The avoided cost rates that Duke proposes to credit NEM customers for exported power are the Commission-approved rates that the Companies pay to utility-scale qualifying facilities (QFs) under the Public Utility Regulatory Policies Act (PURPA). Duke states that these avoided cost rates, while currently paid to utility-scale QFs, would be appropriate in the NEM context as well, given that these NEM customers deliver the same type of energy to the grid as the utility-scale facilities. By using this methodology, the rates credited to NEM customers for exported generation would accurately capture the benefits provided to the total utility system by the customer-sited generation and would align the costs of serving these customers with the benefits Duke receives in accordance with HB 589 and as reflected in the Rate Design Study.

TOU-CPP Rates

Duke states that the rate structures contained within the NEM tariffs were designed to work in conjunction with the Companies' established TOU-CPP rate schedules to produce rates that are more reflective of the costs and help reduce cost shifts by incentivizing load to be shifted to low-cost times and ensuring cost recovery for higher cost peak periods. Accordingly, the final element of the new NEM tariffs would net exports and consumption within pricing periods established by the TOU-CPP rate schedules, with any net excess energy exported to the grid from a customer-sited facility credited to the customer each month at avoided cost rates. Under the proposed new tariffs there would no longer be any reset of accrued and unused credits to zero on June 1 of each year.

Legacy Customers

Duke's Application proposes to transition legacy NEM customers to the new rate by January 1, 2027, as required by HB 589. Duke states that in order to strike a balance between HB 589's mandate to address cross-subsidies and the reliance interests of customers who installed NEM in advance of the new rates, Duke proposes an alternative NEM rate option for those legacy customers as follows: (1) a monthly bill credit at avoided cost for net excess; (2) a small non-bypassable charge; and (3) a monthly minimum bill of $10 more than the approved basic facilities charge. Duke states that it would offer this option for 15 years from the effective date of the proposed NEM tariffs.

Finally, Duke states that since net exports are compensated at the avoided cost rate approved by the Commission under PURPA, the Companies should be permitted to recover those costs through the Companies' respective fuel riders.

MEMORANDUM OF UNDERSTANDING

Duke filed, as an attachment to the Application, a Memorandum of Understanding (MOU) signed by Duke; NCSEA, et al.; SEIA; and Sunrun, Inc. (collectively, the MOU Parties). Duke states that the MOU represents support from a broad group of stakeholders and provides a NEM solution that is workable for customers. The MOU includes the parties' support for two main components: the NEM tariffs described in the Application (Solar Choice NEM tariffs) and a proposed resolution for incentives for

residential customer-generators (Smart $aver Solar Program) taking service under the revised NEM tariffs.[4]

The MOU also sets out a non-binding understanding that Duke would explore a solar program tailored to low-income customers as a potential future EE or demand response program; that the MOU Parties would review and provide feedback on Duke's marketing materials and disclosures for customers to ensure customer communications are transparent and understandable; and that customers are educated on the NEM tariffs and incentives, including the mechanics of the rate structure. The MOU also provides that the Companies would work collaboratively with stakeholders to develop a policy proposal for the next generation of nonresidential NEM.

STIPULATION BETWEEN DUKE AND NCRSI

On May 19, 2022, Duke filed a Stipulation agreed to by the Companies and NCRSI, which presented a Proposed Bridge Rate for NEM customers. The Stipulation states that the Proposed Bridge Rate would be an alternative to the default TOU rate design proposed in the Application and would be available to all residential customers, regardless of their current rate schedule, who apply for the NEM tariffs on or after January 1, 2023, and until December 31, 2026, subject to the yearly caps on the total applications. The Proposed Bridge Rate includes monthly netting at the applicable avoided cost rate and includes the same MMB and non-bypassable charge that are included within the NEM tariffs. However, the Proposed Bridge Rate does not include a GAF or mandatory TOU rates.

The Stipulation also proposes a modification to the Application's treatment of legacy NEM customers, that is, those NEM customers already taking service under existing NEM tariffs. Under the Stipulation, current NEM customers may remain on their current rate until January 1, 2027, at which point they will transition to the Proposed Bridge Rate or instead choose to move to the NEM-TOU rate in effect at the time. Customers can remain on the Proposed Bridge Rate for 15 calendar years after the date on which the customer first submitted an interconnection application, less the number of years they were on an alternative NEM rate structure prior to January 1, 2027. After that, the customer will move to the NEM-TOU rate in effect at the end of the Proposed Bridge Rate period.

Customers who are Low Income Energy Assistance Program (LIHEAP) recipients, Crisis Intervention Program (CIP) recipients, or live in homes specifically built for low-income and vulnerable customers will be exempt from the MMB under the Proposed Bridge Rate. Customers who receive the MMB exemption must have a PV system with a capacity no greater than 8 kW_{DC}.

The Proposed Bridge Rate would be subject to participation caps, which are limited by the amount of total capacity interconnected in each utility and varies from year to year.

[4] Duke's application for approval of its Smart $aver Solar Program was filed in Docket Nos. E-2, Sub 1287 and E-7, Sub 1261.

If the cap is reached, new NEM customers could still add rooftop solar, but they would only have the option of being on Schedule Purchased Power or one of the applicable TOU rates (RSTC or TOU-CPP). The Proposed Bridge Rate annual capacity allowance would be available on a first come/first serve basis and customers would have one year from the application date to make their system operational or lose their Proposed Bridge Rate capacity reservation.

There are several instances where the Proposed Bridge Rate would terminate early for some or all customers. For example, if the Commission approves the Smart $aver Solar Program for electric heat customers that contains an amount equal to or greater than the total amount an eligible participant is proposed to receive, the Proposed Bridge Rate will terminate only for electric heat customers, and electric heat customers will thereupon not be eligible for the Proposed Bridge Rate. If the Proposed Bridge Rate terminates for electric heat customers, the Proposed Bridge Rate capacity limits would be reduced by 50% from the original caps. The Proposed Bridge Rate would also terminate for applicable customers if at any time during the Proposed Bridge Rate period, an EE program associated with the installation of solar rooftop PV containing a total incentive or combination of incentives that equal at least $0.60/watt for applicable TOU rates is approved by the Commission for all eligible residential customers (regardless of heating source) in Docket Nos. E-2, Sub 1280, and E-7, Sub 1253.

The Stipulation also states that the Companies would propose incentives for DSM/EE measures related to adding solar plus other measures available to eligible gas heat customers. The Stipulation provides that the parties will vigorously advocate in North Carolina for approval of these incentives, as well as the recovery of net lost revenues and the Portfolio Performance Incentive that are permitted for any Commission-approved cost-effective EE or DSM program.

COMMENTS OF THE PARTIES

Initial Comments

The Public Staff

The Public Staff states that as of December 2021, the Energy Information Administration (EIA) estimates that North Carolina has approximately 301 MW of small-scale solar capacity,[5] which ranks the State as 17th in the nation. Of the 16 states that have more total small-scale solar capacity, 75% have initiated or approved reforms to their NEM policies and tariffs. Of the 33 states that have less total small-scale solar capacity, only 27% have initiated or approved reforms to their NEM policies and tariffs.[6] The Public Staff notes that net metering proceedings in other states have been highly contentious. The Public Staff believes that as distributed energy resources (DERs) such

[5] Defined by the EIA as 1 MW or less, typically located at the customer's site to serve local load.

[6] *See* North Carolina Clean Energy Technology Center, *The 50 States of Solar: 2021 Policy Review and Q4 2021 Quarterly Report*, January 2022, at 17-24.

as rooftop solar generation continue to grow and mature, states across the country have been reviewing and will continue to review their respective DER policies, including NEM, to identify the benefits of DERs and reduce cost shifts between customers investing in their own DERs and customers who do not do so.

The Public Staff also reviewed over 400 statements of position filed in response to the NEM tariffs, finding that the most common topics mentioned related to making rooftop solar more accessible, generally due to climate change concerns; a fear that the NEM tariffs could harm the solar industry; and a desire for corporate and environmental responsibility. After a review of these consumer statements, the Public Staff believes there are some misconceptions as to the cross-subsidy issue being addressed or the impact of the modifications on the economics of NEM. The Public Staff states that Duke's proposal will not do away with or prohibit NEM. Rather, the Application appears to offer straightforward reforms of the structure of the NEM program that comply with the requirements of HB 589 and HB 951 and should reduce the cross-subsidization of NEM customers by non-NEM ratepayers.

The Public Staff notes that another common topic found in the consumer statements raised concerns about the increased complexity of the NEM tariffs. As such, the Public Staff supports Duke's commitment in the MOU to develop an online savings calculator that will be shared and previewed with the MOU Parties for feedback.

Embedded and Marginal Cost Studies

The Public Staff generally found the methodology and results of the embedded and marginal cost studies included in Duke's Rate Design Study to be a reasonable analysis of the cost, benefits, and cross-subsidies associated with NEM. According to the Public Staff, the primary purpose of the NEM tariffs is to reduce the cross-subsidy borne by non-NEM customers, which the proposed modifications to Riders NM and the new Rider RSC largely achieve. The Public Staff states that while the total subsidy is not eliminated, it is significantly reduced.

The Public Staff first describes the Companies' embedded cost study, stating that Duke first calculates the difference between the cost to serve a non-NEM customer and the cost to serve a NEM customer, based upon unit costs from their respective cost-of-service studies filed in the Rate Case Dockets. This reduction in the cost to serve a NEM customer represents the quantifiable system benefits of NEM. Next, Duke estimates the average revenue reduction (equal to the estimated customer annual bill savings relative to a non-NEM customer) expected for a NEM customer under the existing NEM tariffs and the proposed NEM tariffs, using a SAS[7] model that estimates hundreds of customer bills under various rate structures using actual AMI customer data. The Public Staff states the embedded cost cross-subsidy is calculated by subtracting the benefits (cost of service reduction) from the costs (utility revenue reduction). When the revenue

[7] SAS stands for Statistical Analysis System, developed by SAS Institute, Inc., a multi-national developer of analytics software based in Cary, North Carolina.

reduction is greater than the reduction in cost to serve, the difference represents costs that must be recovered from all ratepayers.

The Public Staff then describes Duke's marginal cost study, stating that the Companies first calculate the benefits of solar generation by conducting multiple DSM model runs using a residential NEM solar generation profile as the input. These benefits include avoided energy, avoided capacity, and avoided T&D costs. The revenue reduction from NEM customers is estimated in the same manner as the revenue reduction for the embedded cost study. The marginal cost cross-subsidy is calculated by subtracting the solar generation benefits from the revenue reduction. The Public Staff states that when the revenue reduction is greater than the reduction in cost to serve, the difference represents costs that must be recovered from all ratepayers.

According to the Public Staff, the embedded and marginal cost studies estimate the reduction in cross-subsidies under expected future conditions. The actual, realized reduction in cross-subsidies may be more or less, depending on many factors. Because both analyses represent a point-in-time perspective, the Public Staff believes it is impossible to absolutely eliminate any cross-subsidy. The Public Staff contends that while it could be argued that elimination of all cross-subsidy is an appropriate strategy to pursue (i.e., a target reduction of 100%), it believes that reductions within 90% to 110%, on an embedded cost basis, are within an appropriate band of reasonableness and that the proposed new NEM tariffs achieve that goal. While the marginal cost study is informative, the Public Staff believes that the embedded cost study best represents the overall retail rate and revenue situation of the Companies.

The Public Staff also believes that Duke has made a reasonable effort to comply with N.C.G.S. § 62-126.4(b), which requires Duke to develop rates that are nondiscriminatory and to ensure that the net metering retail customer pays its full fixed cost of service. Quantifying the full fixed cost of service is often a highly debated topic in general rate case proceedings. The Public Staff asserts that some intervening parties contend that the utilities have little to no fixed costs to serve customers (i.e., all costs of service vary in proportion to the units of energy sold). Duke and the Public Staff have argued that fixed costs of service exist, particularly those costs that are related to the demand and customer functions of utility service. The Public Staff states that the Application discusses the simple two-part rate design currently found in the basic residential service rate schedules and with such a simple design, all things being equal, the fixed costs of service must be recovered through the basic customer charge and the energy charges that comprise the basic residential schedules.

The Public Staff notes that once approved by the Commission, rate schedules are presumed just and reasonable for the recovery of the full costs to serve customers (both fixed and variable costs of service) based on an average level of consumption for each customer as represented by the utility's cost-of-service study. The embedded cost model results in some residential customers paying more than their share of fixed costs, while others pay less. In other words, higher usage customers pay a higher share of fixed costs and lower usage customers pay a lower share of the fixed costs, but on average,

residential customers as a whole are paying their full, allocated share of the fixed cost of service, including both NEM customers and non-NEM customers.

The Public Staff also assessed the marginal cost of compliance with House Bill 589. The Public Staff states that the marginal cost study suggests NEM customers are not paying their full share of costs required to serve them, including the fixed costs of service. The Public Staff, however, notes the cross-subsidies highlighted by the marginal cost study (78% reduction for DEC and 49% reduction for DEP) are not appropriate to use in this case for two reasons. First, the utilities do not set marginal rates for residential service. According to the Public Staff, marginal rate designs are more appropriate for customer classes that desire some level of non-firm service and have more sophisticated rate designs. Residential electric utility service has never been considered "non-firm" utility service. The Public Staff states that the Commission has routinely and appropriately maintained all residential customers in a single customer class that includes all residential sub-classes on all residential rate schedules (NEM and non-NEM customers alike and whether they are all-electric, gas-electric, TOU customers, etc.) because, as a whole, residential customers are not materially different in their consumption behaviors.

Second, The Public Staff contends the benefits that NEM customers bring to the residential customer class and to the utility system result primarily from lower demands, particularly during certain peak periods, and lower overall energy usage. NEM customers directly receive some benefits in the form of lower electric utility bills, and the system benefits from lower variable costs (fuel and other operational expenses) to serve the residential class. These lower system costs translate into lower rates that are paid not only by non-NEM customers but also by the NEM customers to the extent of their consumption of energy from the utility. The Public Staff states that Duke's balance of costs and benefits represents a reasonable compromise between NEM and non-NEM residential customers. The Public Staff further believes that this balance must be monitored on a regular basis, as costs and benefits change and as more non-utility DERs are added.

The Public Staff contends that while an independent third-party value of solar study, which several parties requested, may provide some additional insights into the benefits solar generation can provide, the majority of known and verifiable benefits of solar generation were analyzed through the marginal and embedded cost studies. The Public Staff stressed that the value of distributed energy resources must be based upon quantifiable benefits and costs to the utility. The Public Staff also notes that while the value of avoided T&D is included in Duke's studies, it is not included in the Net Excess Energy Credit (NEEC) calculation.

Rate Components

The Public Staff reviewed the proposed MMB, GAF, the non-bypassable charges, the new netting of exports against consumption, and the TOU-CPP rate schedule and notes that it believes that the specific fee amounts that customers would pay under the

NEM tariffs may be changed in future general rate cases, just as any other rate schedule may.

The Public Staff states that through discovery, Duke indicated that the GAF is intended to recover higher than average distribution-related costs that are imposed by larger NEM systems, rather than socializing those costs across all ratepayers. Duke further provided that the 15 kW_{DC} threshold was a negotiated level that was well above the average nameplate capacity for most residential rooftop solar systems. In contrast, the MMB is intended to recover distribution-related costs associated with an average residential system.

Regarding the non-bypassable charges, the Public Staff states that in response to the Public Staff's discovery, Duke indicated that the DSM/EE, storm cost recovery, and other similar charges recover costs that are not incurred on a per kWh basis (i.e., not classified as energy costs). A customer's rooftop solar panels do not reduce the costs that are recovered from these riders. By making these riders non-bypassable, NEM customers would contribute fully toward these costs. Duke further indicated that other riders that are recovered on a kWh basis would not be subject to this component of the proposed NEM tariff. Those riders are related to excess deferred income taxes, fuel, and the competitive procurement of renewable energy.

The Public Staff states that the proposed netting of energy consumption and exports within the same peak period would reduce, though not completely eliminate, cross-subsidization. By netting exports and consumption in the same rate periods, the Public Staff asserts that Duke's proposal assigns the same value to both exports and consumption. According to the Public Staff, the NEM customer, therefore, receives full retail credit for all exports within a pricing period, up to the level of the customer's consumption; any net excess energy exported to the grid would be credited at the NEEC rate. Excess generation produced in a particular pricing period cannot be used to reduce consumption during other pricing periods. Net consumption during each pricing period will be billed at the TOU-CPP rate for that pricing period.

The only exception to the netting process as thus described is related to CPP periods. Under the TOU-CPP rate schedules, Duke is permitted to call up to 20 CPP days per calendar year. During a CPP-designated day, the CPP rate will be charged for all consumption during the on-peak pricing period. The CPP rate is approximately 82% higher than the on-peak rate in DEC and 86% higher than the on-peak rate in DEP. Duke proposes that during CPP hours, the CPP rate will apply to all consumed energy, while any energy exports during CPP hours will only offset on-peak consumption. In response to the Public Staff's discovery, Duke indicated that valuing exports during CPP-designated hours at on-peak rates rather than CPP rates was based on using an average annualized avoided cost rate as a proxy for what otherwise would be a more complicated calculation.

At the end of each month, the total net exports during each pricing period, if any, are summed and multiplied by the NEEC to calculate the monthly bill credit issued to the customer. The initial NEEC proposed in each new NEM tariff is based upon avoided cost

rates approved in Docket No. E-100, Sub 175. Duke indicated that it will update the NEEC upon the approval of new avoided costs. Along with the possibility of updating the fees in general rate case proceedings, the NEEC rates may be updated within the context of the biennial avoided cost proceedings.

The Public Staff supports the use of the NEEC but has concerns with how Duke calculates it. The Public Staff recommends that the NEEC rate reflect a solar generation profile, rather than a flat always-available generation profile, in recognition that the vast majority of net metered generation facilities are solar and also recommends the use of a five-year avoided cost rate. Further, the Public Staff believes that the Commission should deem customer-sited generation QFs under PURPA.

In its embedded and marginal cost studies, Duke estimates the impact to NEM customer savings from each component of the NEM tariffs. The Public Staff states that Duke considers the customer savings to represent the revenues that Duke does not collect from NEM customers because of the customer's solar generation, and the reduction in the utility's cost to serve NEM customers represents the benefits of NEM. DEP estimates that the average NEM customer monthly savings (relative to a home with no solar) is $98 under the current Rider NM. The proposed Rider RSC would reduce savings to approximately $68. DEC estimates that the average NEM customer monthly savings (relative to a home with no solar) is $80 under the current Rider NM and $56 under Rider RSC. The largest reduction in NEM customer savings results from adopting the TOU-CPP rate schedule with intra-period netting. On average, the customer savings under the proposed NEM revisions are reduced approximately 30%.

Based on the data provided by Duke, the Public Staff states that it analyzed the impacts of the NEM tariffs on quartiles of residential customers. The customer data was separated based on solar generation in kWh as a percent of load in kWh. The top quartile of customers on average generates 102.84% of their electricity needs, leading to a current average bill of $26.38. Under the proposal, their bill would on average increase to $57.65. On the other end of the spectrum, the bottom quartile of customers only generates 50.3% of their electricity needs, leading to an average monthly bill of $100.77. Under the proposal, their average bill would increase to $117.49. The first quartile percent change in bill would be 118.53% while the last quartile would increase by 16.59%. The Public Staff believes that, generally, the NEM customers that would see the largest increase in their bills under the NEM tariffs are those that are exporting the greatest amount of energy to the grid, often times generating more energy than their annual load requirements. NEM customers who have systems with capacities greater than their load requirements may also be exporting larger amounts of energy to the grid.

The Public Staff disagrees with Duke's proposed treatment of CPP exports and consumed energy. Specifically, the Public Staff believes that exports during the CPP period should be netted against consumption within the CPP period rather than netted against consumption within the on-peak period. The Public Staff argues that Duke has not provided sufficient justification for this provision. The Public Staff believes, because CPP days are designated based upon an analysis of system conditions, expected load,

and the number of days in which CPP has been implemented in the calendar year, that exports during a CPP period are more valuable than exports during non-CPP on-peak periods. The Public Staff recommends that Duke revise its proposed NEM tariffs to net CPP exports against CPP consumption. While Duke tested the hypothesis of valuing CPP exports at the CPP rate, and the results suggested that valuing CPP exports at the CPP rate would have a negligible effect on the costs and benefits to NEM customers, it would have the added benefits of simplifying the tariffs and incentivizing NEM customers with energy storage to dispatch their energy storage devices in such a way as to reduce overall grid demand during CPP periods. The Public Staff asserts this would benefit not only NEM customers but all customers.

Renewable Energy Certificates

Duke proposes to continue to retain ownership of all Renewable Energy Certificates (RECs) produced by NEM customers under the proposed new NEM tariffs. These RECs will continue to be used for compliance with N.C.G.S. § 62-133.8. The Public Staff states, however, the value of these RECs has not been included in the embedded cost analysis or marginal cost analysis described above. The Public Staff asserts that granting the RECs to the utility will further decrease any potential cross-subsidy issues. The Public Staff explains, using an illustrative $3 per REC price, that DEC estimates that the embedded solar cross-subsidy with utility REC ownership will be reduced by approximately 112% and the marginal solar cross-subsidy will be reduced by approximately 87%. DEP estimates that the embedded solar cross-subsidy with utility REC ownership will be reduced by approximately 102% and the marginal solar cross-subsidy will be reduced by approximately 54%.

The Public Staff understands Duke's proposal to require utility ownership of all RECs generated by customer-sited generation. The Public Staff states a similar provision exists in Rider NM, where utility ownership of RECs was designed to mitigate the cost shift from NEM customers to non-NEM customers. However, the Public Staff argues that the proposed NEM tariffs essentially eliminate the embedded cost shift and reduce the marginal cost shift. In addition, utility ownership of RECs would result in an embedded cost shift reduction of over 100% in both DEC and DEP, indicating that on an embedded cost basis, NEM customers now would be subsidizing non-NEM customers.

Given the reduction in cross-subsidies as a result of the NEM tariffs, the Public Staff believes requiring utility ownership of all RECs is no longer necessary. The Public Staff asserts that solar RECs from NEM customers do not provide significant value to Duke, as the REC value was not included in Duke's embedded or marginal cost studies. Furthermore, a significant quantity of zero cost solar RECs was recently procured through the Competitive Procurement of Renewable Energy (CPRE) Program. However, according to the Public Staff, because a small marginal cost shift still exists, all ratepayers would benefit from Duke using zero cost RECs from NEM customers to meet Renewable Energy and Energy Efficiency Portfolio Standard (REPS) compliance. The Public Staff states that at the same time, ratepayers should be allowed to own attributes of the energy they generate from capital investments they have made in their property. To balance

these competing factors, the Public Staff proposes an opt-out provision from utility REC ownership. The Public Staff states that if a NEM customer expresses a desire to own the customer's RECs, Duke should provide a pathway for customers to retain REC ownership through an affirmative opt-out process. The Public Staff asserts that while solar RECs may not have significant value today, in a future carbon-constrained scenario where solar RECs appreciably gain value, it would be appropriate to provide a pathway for motivated ratepayers to retain these RECs. NEM customers could sell their RECs into voluntary REC markets or REC aggregators, or they may decide not to do anything with their RECs.

The Public Staff, therefore, recommends that the Commission require Duke to refile its NEM Tariffs to add an option for customers to opt-out of utility REC ownership. The utility would retain all RECs produced for those customers that do not opt-out. The Public Staff also requests that Duke maintain records on customers requesting to opt-out so that the Public Staff can audit Duke's REPS cost recovery proceedings to ensure RECs from NEM customers who opt-out are not double counted for Duke's REPS compliance.

Energy Storage

The Public Staff is concerned that the NEM tariffs, as filed, do not consider how energy storage might be adopted, installed, and dispatched by NEM customers over the next decade. The Public Staff recommends that the Commission direct Duke to study and consider how the NEM tariffs might be modified in the near future to better facilitate and accommodate energy storage coupled with renewable generation. This analysis should include assurance that the projected reductions to cost cross-subsidies are maintained even if significant quantities of behind-the-meter (BTM) energy storage are installed at NEM facilities and that customers with NEM storage are adequately compensated for the value they provide to the grid.

Nonresidential NEM

The Public Staff states that the Application does not specifically address how nonresidential NEM would be treated. In response to the Public Staff's discovery, Duke indicated that the Application focused on residential NEM because concerns over cross-subsidization are more pronounced for residential NEM customers, in part due to the fact that current residential NEM customers do not have the demand charges and more sophisticated rate designs that are applied to most nonresidential NEM customers. Duke further indicated that it plans to discuss nonresidential NEM rate designs with stakeholders at a later time. The Public Staff did not specifically review in depth the cross-subsidy issue for nonresidential NEM as part of its investigation into the Application. The Public Staff agrees that the cross-subsidy issue is not as critical for nonresidential NEM as it is for residential NEM.

Oversight and Recommendations

The Public Staff recommends that the Commission approve Duke's proposed new NEM tariffs to be used for a period of four years. The Public Staff suggests that six months

prior to expiration of this period, Duke should make a filing to propose any appropriate modifications to its NEM tariffs. The Public Staff states that if the Commission determines revisions are necessary, Duke should allow customers who take service under the then-existing NEM tariffs to keep their contracts unmodified for a period of ten years, and any changes resulting to the structure of the NEM tariffs would apply to subsequent contract periods.

To assess the ongoing performance and administration of NEM tariffs, the Public Staff believes it is appropriate to require Duke to file annual reports on the implementation of its revised NEM program and tariffs. The Public Staff also proposes to coordinate with Duke and other interested parties to determine the format and content of the annual report.

NC WARN, et al.

NC WARN, et al. oppose the revised NEM tariffs proposed by Duke for a variety of reasons. First, according to NC WARN, et al., N.C.G.S. § 62-126.4(b) requires that the Commission establish NEM rates under "all tariff designs," yet Duke has sought to require all NEM customers — including existing non-TOU NEM customers — to operate under TOU tariffs with CPP windows that are disadvantageous to rooftop solar. NC WARN, et al. contend that Duke's proposed NEM tariffs violate the mandate and intent of N.C.G.S. § 62-126.4(b) by failing to propose tariffs under all tariff designs as required by statute, including for non-TOU customers.

NC WARN, et al. further state that N.C.G.S. § 62-126.4(b) requires that the new NEM rates be established only after an investigation of the costs and benefits of customer-sited generation. NC WARN, et al. argue that Duke failed to conduct any such investigation in this matter and relied instead on an outdated cost-of-service study from 2018 that focuses on the costs of rooftop solar but fails to examine the benefits, both societal and otherwise, of rooftop solar. NC WARN, et al. assert that the Commission must lead a value of solar study and establish revised NEM tariffs based upon the results of that Commission-led study.

NC WARN et al. allege that customer and societal impacts should be examined in every cost-benefit analysis of NEM solar. NC WARN, et al. argue that the applicable standard in conducting this investigation should be the National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources (NSPM-DER) because, in part, it recommends that certain societal impacts be included in the investigation. NC WARN, et al. also point to the NSPM-DER to guide the Commission's independent investigation.

NC WARN, et al. further assert that Duke's evaluation of embedded costs and marginal costs in its Rate Design Study is not an evaluation of the value or benefits of NEM solar. NC WARN, et al. state that in response to data requests, Duke provided that as part of the Comprehensive Rate Review stakeholder process, the Companies performed a value of solar study, which was shared with stakeholders. NC WARN, et al. contend that the Comprehensive Rate Review stakeholder process was inadequate as a

value of solar study because the NEM portion of the Rate Design stakeholder process was placed on a "fast track" process and was the subject of discussion over a relatively short period of time. NC WARN, et al. argue that the substantive information about Duke's proposed TOU windows was disclosed too late to adequately prepare for discussions during the stakeholder process.

Next, NC WARN, et al. contend that Duke's proposed NEM tariffs would disincentivize the installation of rooftop solar, citing data request responses in which Duke acknowledged that the proposed NEM tariffs would reduce the economic value of rooftop solar for NEM customers by approximately 30%. NC WARN, et al. describe this as a "catastrophic disincentive of rooftop solar" in light of carbon reduction goals. NC WARN, et al. Joint Initial Comments at 3.

In addition, NC WARN, et al. state that the proposed NEM tariffs would impose an unnecessarily extravagant MMB upon NEM customers in a manner that is redundant with the BFC that is already in place by the utilities. In addition, NC WARN, et al. contend that Duke failed to establish any cost shift from NEM residential customers to non-NEM residential customers, which could feasibly justify the MMB. According to NC WARN, et al., in its cost shifting analysis, Duke failed to account for the elimination of T&D investments that would result from the proliferation of rooftop solar, and Duke failed to correctly analyze the potential savings achieved by NEM solar when it is used as a substitute for remote utility-scale solar that is reliant upon new or upgraded transmission to enable it to be delivered to demand centers.

Finally, NC WARN, et al. state that Duke's proposed NEM tariffs omit several important provisions, such as battery storage. NC WARN, et al. suggest that it is important that customers be allowed to avoid high on-peak pricing through battery storage technology. NC WARN, et al. also contend that the proposed NEM tariffs fail to include provisions for low- and fixed-income customers. As such, NC WARN, et al. recommend that an equitable, well-funded on-bill financing and/or on-bill repayment program, tied to the electric meter and not to the customer, would potentially lessen the barriers presented in Duke's Application. NC WARN, et al. recommend that the Commission order the Companies to propose new NEM tariffs which address these issues.

EWG

Like NC WARN, et al., EWG argues that the Rate Design Study did not include an investigation of the value or benefits of customer-sited generation and suggests that an investigation of costs and benefits should be conducted consistent with the NSPM-DER. EWG believes the NEM tariffs proposed by Duke are unduly complex, discriminatory against residential solar customers, not supported by transparent data or analysis, heavily rely on fixed charges that are unfair, and violate applicable law and public policy.

Donald Oulman

Mr. Oulman, a Durham County resident, installed a 6.5 kW PV solar system on the roof of his home in April 2016. Through his own analysis, Mr. Oulman believes that Duke's proposed NEM rate structure versus the current non-TOU tariff would result in a 100% increase in his cost of electricity for the one-year period that he evaluated. Mr. Oulman argues that under the proposed NEM rate structure, the excess energy that he banks during high solar production months would no longer benefit usage during low solar production months as it does under the existing NEM rate structure.

Mr. Oulman states that the windows for summer and non-summer on-peak energy demand in the Companies' TOU-CPP tariff do not reflect Duke's actual peak energy demand in such a way that disadvantages solar energy in favor of fossil fuel energy sources. Mr. Oulman notes that distributed PV solar rooftop energy producers in the service territory provide Duke with numerous economic and environmental benefits. According to Mr. Oulman, Duke's proposed changes to the NEM rate structure will retroactively create a significant change in the economics of his decision to install a PV solar system on his home and that it will have the same impact on all other homeowners who made, and will make, similar decisions to install rooftop PV solar systems.

NCSEA, et al.

NCSEA, et al. state that conversations between multiple parties resulted in the Application and MOU filed by Duke. NCSEA, et al. note their support for Duke's proposed rate structures under the NEM tariffs. NCSEA, et al. state that the requirement that NEM customers take service under a TOU-CPP rate schedule can provide significant benefits for both customer-generators and the grid. NCSEA et al. explain that the sharply differentiated TOU-CPP rates will provide savings for customers who incorporate on-site storage to use excess solar output to reduce on-peak usage, savings that are not available to NEM customers on a non-TOU rate schedule. Additionally, distributed on-site storage has the potential to be a source of dispatchable capacity for Duke for which customers can be compensated in exchange for the periodic control of storage discharge by Duke.

NCSEA, et al. also note that the proposed new NEM tariffs include components such as the MMB that will encourage right-sizing of solar systems and discourage over-building. NCSEA, et al. state the GAF for large systems over 15 kW will play an important role as well by recovering additional revenue from the largest residential customers who may have the roof space, available land, or financial means to install very large systems. Finally, NCSEA, et al. state that the MMB and non-bypassable riders ensure that solar customers contribute a certain amount each month to system costs that are not dependent on the amount of energy consumed.

NCSEA, et al. state that the benefits of distributed solar for the electric system are significantly enhanced when solar is paired with storage. NCSEA, et al. recommend that interested parties work on developing an incentive program for on-site storage.

Additionally, NCSEA, et al. note there is also a need to improve the accuracy of the avoided cost rates that will be used to compensate net monthly exports from solar-plus-storage systems. According to NCSEA, et al., storage can allow a customer to be a net exporter of valuable on-peak kWh, but compensating these kWh at an annual average avoided cost rate grossly undervalues this output.

NCSEA, et al. submitted a report on the proposed NEM tariffs and Smart $aver Solar Program prepared by R. Thomas Beach and Patrick G. McGuire of Crossborder Energy. The report includes an assessment of the cost-effectiveness of the proposed NEM tariffs and the Smart $aver Solar Program incentive and found that the bill savings from solar adoption are similar to those available under the existing NEM paradigm, but only if the Smart $aver Solar Program incentive is included. The report also concludes that the requirement that NEM customers take service under a TOU-CPP rate schedule can provide significant benefits for both customer-generators and the grid because customer-generators will have the opportunity to realize significant savings from incremental off-peak electric use, such as for electric vehicle charging.

SEIA

SEIA requests that the Commission approve Duke's NEM proposal with the caveat that a "sustainable market" in North Carolina depends upon approval of the MOU. SEIA Initial Comments at 5. SEIA notes its recognition that the Companies' proposals — which introduce new rate components while retaining monthly netting and avoiding draconian fixed charge increases — could be a potential model for the future growth of customer-sited distribution energy programs of all types that recognize the total value of a DER.

SEIA cautions that the proposed rate changes will likely reduce the average system size of solar facilities in Duke's territories as well as the value of self-generation compared to the status quo. Without considering the availability of the upfront Smart $aver Solar incentive, SEIA states that it would tend to agree with critics that the changes may slow growth of the nascent rooftop solar market in North Carolina. However, SEIA asserts that the incentive for the Smart $aver Solar Program is durable and openly available to all who meet eligibility requirements and are willing to participate, is cost-effective, and provides demonstrable net savings to non-participating customers. As such, SEIA states that the industry can learn to adopt and thrive under this new paradigm, achieving a durable overall framework to grow the customer-sited solar market well into the future. In SEIA's view, pairing NEM reform with demand-response and under an EE framework (for behind-the-meter consumption) is the innovative foundation of many future programs that will also increase load flexibility, directly offset carbon emissions from the Companies' in-state generation fleet, and provide customers more control over their monthly electric bills.

NCEMC

NCEMC states that it does not take a position on the specific rates included in Duke's proposed NEM tariffs, the MOU, or the related Smart $aver Solar Program but that it has several general observations. NCEMC states its view that Duke's proposed NEM tariffs seek to ensure that each NEM customer "pays its full fixed costs of service" consistent with N.C.G.S. § 62-126.4 through better alignment of the NEM rates with the costs to serve NEM customers, as opposed to socializing the revenue shortfall from NEM customers among all customers like the current NEM tariffs do. NCEMC notes its general agreement with Duke that a combination of approaches can provide a framework to more appropriately capture the benefits provided to the power system by BTM generation, provide tools and flexibility to better align the cost and benefits of serving those customers, and minimize the risk of cross-subsidization.

NCEMC further explains its view that with regard to TOU and CPP rates, time-differentiated rates that are reflective of the value of energy that the electric supplier would otherwise generate or purchase to provide energy to the customer can help to align costs and also provide price signals to current NEM customers as well as future customers considering investing in BTM generation. The pairing of BTM generation with other devices such as energy storage or demand response mechanism can, according to NCEMC, further increase the value of the DERs to both the customer and the electric supplier in a more cost-effective fashion. Finally, NCEMC notes its agreement with Duke's proposal to include a MMB, stating that doing so will assign distribution system costs and other costs that do not typically vary with customer incurring those charges.

350 Triangle, et al.

350 Triangle, et al. argue that the complex business practices outlined in the Application will exacerbate the climate crisis and have deleterious public health impacts in derogation of the Commission's obligations under North Carolina law and public policy. 350 Triangle et al. contend that although Duke has evaluated the costs of customer-sited generation, its NEM proposal includes no evidence of any investigation regarding the associated benefits. According to 350 Triangle, et al., the Commission should require an independent value of solar study to determine the full costs and benefits, both societal and economic, of rooftop solar prior to establishing revised NEM tariffs.

350 Triangle, et al. argue that until the Companies address societal benefits, the Application must be rejected. 350 Triangle, et al. state that rooftop solar is an underutilized resource that could have the potential to meet 30% of North Carolina's energy needs and a resource that enriches communities by supporting businesses and creating jobs, attracting new companies to our economy, and by generating zero emissions energy. 350 Triangle, et al. also note that distributed energy generation contributes to a resilient and diverse grid distribution system because it allows flexibility during grid disturbance events. 350 Triangle, et al. believe that discouraging the installation of rooftop solar inappropriately devalues its benefits, such as microgrids, which can help mitigate the risks of centralized vulnerabilities common to the existing power grid.

350 Triangle, et al. also argue that customer-sited generation reduces Duke's capital costs for new energy generation because customers carry all capital costs related to equipment and installation of on-site generation. According to 350 Triangle, et al., rather than incentivizing customers to carry those capital costs, the proposal penalizes customer generators by (1) imposing a MMB and (2) significantly reducing the value of customer-generated energy exported to the grid. Additionally, 350 Triangle, et al. contend that the pricing differential between rates charged for energy consumed and credits given for energy exported to the grid is inequitable and is unfair to customer generators. 350 Triangle, et al. ask the Commission to reject Duke's Application and require the Companies to file a revised application that takes into account the benefits and costs of customer-sited energy generation and contains climate-friendly elements that serve the public interest.

NCRSI

In their initial comments, NCRSI contended that Duke's proposed NEM tariffs are not just and reasonable and violate the spirit and letter of HB 589. First, NCRSI suggested that N.C.G.S. § 62-126.4 calls for an independent study of the costs and benefits of customer-sited generation to be conducted by the Commission and not by the utility. In light of the fact that Duke proposed NEM rates that will last for the next ten years, NCRSI asserted that there should have been a wider array of stakeholders involved in the discussions about setting new NEM rates, with the stakeholders that are most directly impacted by the new tariffs — including NCRSI — having been left out of the stakeholder process. In NCRSI's view, the proposed NEM tariffs, if approved, would negatively impact the rooftop solar industry.

Despite Duke's claims that impacts of the proposed NEM tariffs would be minimal, NCRSI explained that Duke customers with solar systems installed would experience a reduction in value to the customer of 20% to 35% over the life of the solar system under the proposed NEM rate structures, primarily due to the financial disadvantages of sizing a system closer to a home's actual energy usage. The result of this would, in NCRSI's view, be that customers' ability to own their own power supplies would be reduced and North Carolina's progress toward achieving carbon reduction goals would be slowed.

NCRSI also warned that the proposed NEM rates are overly complicated and will require solar installers to calculate the value of new solar installations for their customers, which they tout as an impossible task given the complexity of the proposed rates and credits. NCRSI explained that under the current NEM tariffs, they need 24 energy data points to model solar effectively but would need 17,520 data points to continue to model solar effectively under the proposed NEM tariffs, without even factoring in CPP rates. This, in NCRSI's view, added magnitudes of complication to the design process while adding no value for solar system owners. The implementation of the proposed TOU rates, in NCRSI's view, could result in customers installing panels that face a different direction than is ideal for maximum energy production purely for the sake of earning a credit for kWh at peak times. NCRSI stated their concern that customers will be taken advantage of and that the complexity and vagueness of the proposed NEM tariffs would make it so

difficult to estimate solar benefits that actual benefits would fall outside the range of projections, resulting in an erosion of confidence in the industry and a loss of credibility.

NCRSI also asserted that the avoided cost rate for QFs is too low (the lowest in the past 20 years) and that Duke should not be permitted to lock in the current NEEC for the next ten years at the Commission-approved avoided cost rate under PURPA. Instead, NCRSI suggested that in considering a reasonable export rate, the Commission should weigh the costs and benefits of any generation resources symmetrically and should develop a process that identifies known or reasonably expected measurable costs and benefits that can be factored into the ratemaking process for NEM rates that compensate eligible customer-generators for energy exported to the grid in a forward-looking, long-term, and incremental analysis. NCRSI cited to recent 2021 orders from the Kentucky Public Service Commission (KPSC) in which the KPSC considered avoided distribution capacity costs, avoided carbon costs, environmental compliance, and job benefits in setting its NEM rates, and ask that this Commission consider the same and, perhaps, other factors when setting NEM rates.[8]

AGO

The AGO's comments primarily address Duke's Rate Design Study. According to the AGO, the Rate Design Study did not analyze potential benefits of customer-sited generation, despite the many benefits that it brings. The AGO states that these potential benefits are many — from reducing carbon emissions by offsetting fossil fuel generation to improving grid resiliency. The AGO states that the General Assembly's passage of HB 951 demonstrates its recognition of the need for revised metering rates, with residential solar playing an undoubtedly significant role in achieving the goals contained therein. The AGO also emphasizes the importance that the NEM rates fully reflect the value that residential rooftop solar provides to the electric system, to Duke, and to the State, and that additional investigation is likely necessary to gain such an understanding.

Reply Comments Filed Before the Stipulation

NC WARN, et al.

NC WARN, et al. reiterate their initial arguments stating that several parties agree that Duke did not conduct the necessary investigation pursuant to statute. NC WARN, et al. contend that the proposed NEM tariffs are too complex and will reduce the economic value of rooftop solar. NC WARN, et al. continue to advocate for a Commission-led value of solar study. NC WARN et al. argue that when appropriate corrections are made to Duke's cost-benefit analysis, Duke's concern about cost shift are debunked.

[8] *See* Kentucky Public Service Commission Case No. 2020-00174, Order (May 12, 2021); and Case Nos. 2020-00349 and 350, Order (Sept. 24, 2021).

EWG

EWG reasserts its position that the revised NEM tariffs work against public policy goals, violate clear statutory requirements and regulatory best practices, would discourage investment in customer-sited generation, and would hinder development of the least-cost, safe, and resilient electric system. EWG notes that there is broad agreement from multiple intervenors that Duke's Application does not meet statutory requirements and should be rejected by the Commission or delayed until there has been an investigation of the costs and benefits of customer-sited generation.

EWG disagrees with the Public Staff's position that Duke's cost-of-service study is sufficient to meet the statutory requirement of an evaluation of the benefits and costs of customer-sited solar. EWG also argues that there is no evidence that NEM customers are not already paying their full cost of service. EWG posits that the residential class of customers, as a whole, may already be paying more than their share of cost of service and that by singling out NEM customers only from the residential class for a MMB charge, the Companies are acting discriminatorily.

EWG agrees with NC WARN's contention that Duke's proposal does not address all tariff designs as required by statute and does not address nonresidential NEM customers. EWG further contends that PURPA does not support limiting NEM compensation to avoided costs.

350 Triangle, et al.

350 Triangle, et al. reiterate that Duke's proposal is not supported by an investigation of the costs and benefits of customer-sited generation because it fails to meaningfully analyze the benefits of NEM solar as required by statute, including social, economic, and environmental benefits of solar. Additionally, 350 Triangle, et al. urge the Commission to require an independent investigation based on NSPM-DER standards.

350 Triangle, et al. also agree with other intervenors' argument that the proposal further violates the mandate of HB 589, which directs the Commission to establish NEM rates under all tariff designs. According to 350 Triangle, et al., Duke's proposal does not address nonresidential NEM customers, and only one mandatory TOU-CPP residential rate design is being proposed for all customers.

350 Triangle, et al. argue that without the Smart $aver Solar Program, bill savings for a typical customer-generator would drop significantly. 350 Triangle, et al. state that if the Commission rejects the Smart $aver Solar Program, the MOU should be disregarded. 350 Triangle, et al. agree with the Public Staff's recommendations that when revised NEM tariffs are eventually adopted, the Commission should require Duke to file annual reports on the implementation if its revised NEM program and tariffs and the Commission should direct Duke to better facilitate and accommodate energy storage coupled with renewable generation.

NCSEA, et al.

NCSEA, et al. highlight numerous points of agreement between various intervenors. They note that the AGO agrees that the MOU must be considered in tandem with the Smart $aver Solar Program and that distributed solar energy can contribute to carbon reduction goals. They believe that the carbon reduction benefits from rooftop solar can be compensated through avoided cost rates used to compensate rooftop solar customers for their excess generation.

NCSEA, et al. state that they participated in the Comprehensive Rate Review meetings during which Duke provided information to stakeholders regarding its analyses of benefits and costs relating to net metering and the reasons why it planned to propose TOU-CPP rates. NCSEA, et al. have no objection to the further study of the benefits and costs of rooftop solar. However, they are concerned that too much delay and uncertainty about future net metering rates will make it increasingly difficult for installers to responsibly sell solar PV systems. NCSEA, et al. request that the Commission find a way to balance the interests of the parties that are seeking further study with the need for market certainty with regard to incentives and future NEM rate design.

NCSEA, et al. agree with the Public Staff that it is appropriate to value any solar production that goes on the grid during CPP events at the CPP rate rather than just at the peak rate. Because those CPP time periods represent the most resource-constrained time periods on Duke's systems, it makes sense to appropriately net out any excess solar generation during those CPP events at the designated rate.

Reply Comments Filed After the Stipulation

The Public Staff

The Public Staff filed a Letter in Lieu of Comments stating that it spoke with Duke about the Stipulation and, in particular, the Proposed Bridge Rate. The Public Staff states that after a short inquiry and initial review of the Stipulation, it generally supports the Stipulation and Duke's intent to offer the Proposed Bridge Rate as an alternative to the TOU-CPP tariffs set out in the Application and modified by the Public Staff's Initial Comments.

The Public Staff also states that it reviewed the initial comments of other parties and does not agree with the interpretation of N.C.G.S. § 62-126.4(b) provided by NC WARN, et al. in their joint initial comments. The Public Staff states that it agrees with Duke that the statute's intent is to ensure that NEM customers pay at least their full fixed cost of service and not that there should be a NEM option under all rate designs. Therefore, the Public Staff requests that the Commission reject NC WARN, et al.'s interpretation of N.C.G.S. § 62-126.4(b) and find that Duke has met its statutory requirement.

NCRSI

According to NCRSI, the Stipulation is an improvement to the proposed NEM rates. NCRSI state the Proposed Bridge Rate will mitigate the devaluation of solar relative to Duke's Application through 2026 by ensuring that all rooftop solar customers, subject to caps, can opt-out of the more onerous TOU rates proposed by Duke unless the Smart $aver Solar Program, or equivalent incentive, is approved by the Commission. In the longer term, NCRSI urge the Commission to work with all stakeholders to develop NEM rates that fully reflect the value that customer-owned solar provides to Duke's generation, transmission, and distribution systems and the value of solar to North Carolina's statutory carbon reduction goals. Accordingly, NCRSI recommend that the Commission approve the Stipulation in its entirety.

SEIA

SEIA recommends approval of the Stipulation, noting its belief that the Stipulation is additive to the original program structure described in the Smart $aver Solar Program and allows greater flexibility and consumer choice for customers looking to adopt solar in Duke's North Carolina service territory. According to SEIA, the Stipulation allows the solar industry the additional time that is needed to alter its business models and practices to accommodate new and innovative tariff structures through the Proposed Bridge Rate. SEIA notes its support of expanding program offerings to both electric and gas heating customers, which it asserts will at least double the existing market for potential adopters and expand the program to an even wider range of participants. SEIA states that approving this Stipulation, as well as any solar efficiency incentive program within the broader umbrella of demand-side customer programs, would signal the importance that these systems and their functions play in transitioning North Carolina's energy economy to one that is cleaner and more resilient, while creating greater agency for consumers when it comes to choosing the sources of their energy.

Duke

Duke rebuts arguments made by several parties that claim the Rate Design Study did not meet the requirements of HB 589, as well as claims that a value of solar study should be conducted instead. According to Duke, value of solar studies utilize similar analysis of marginal and embedded costs that Duke employed in this proceeding. The Companies' analysis considered costs and benefits, including the value of solar energy, in the context of Duke's service territories in North Carolina. As such, Duke argues that a value of solar analysis would yield little, if any, benefit. In addition, Duke contends that the NSPM-DER has only been applied in three states. In contrast, Duke states that its analysis used methodologies for valuing DSM/EE and cost allocation that have been approved by the Commission and are based on practices widely utilized across the country.

Duke states that the results of the Rate Design Study arise from Commission-approved and industry-accepted methodologies, utilize the most recent

Commission-approved cost-of-service data, and properly account for recognized costs and benefits arising from NEM customers. Duke states that by employing both embedded and marginal cost studies, it ensured a wide range of costs and benefits were examined. According to Duke, both the marginal and embedded cost studies recognized benefits in terms of energy, distribution capacity, transmission capacity, and production capacity. Duke further contends that the investigation was utilized to create rate structures that accurately capture the currently recognized benefits and costs to serve these customers and ensure that NEM customers pay their full fixed cost of service in accordance with HB 589. Duke also argues that the 2018 test year for the cost-of-service study was appropriate because neither of the Companies have had a rate case since the compliance cost-of-service studies were filed based on the 2018 test year, and no costs have been added to base rates since the 2018 year. Thus, according to Duke, it would not be prudent to consider the recovery of costs that are not currently in retail rates.

According to Duke, both the Proposed Bridge Rate in the Stipulation and the NEM tariffs result from broad stakeholder engagement and account for a wide range of interests. The TOU-CPP option under the NEM tariffs was developed through the Rate Design Study process, during which Duke engaged in in-depth dialogue with stakeholders on NEM over the course of seven workshops. Evaluation of residential NEM was included in the working group labeled “fast track.” Duke argues the fast track process allowed more focused debate outside of the broader Rate Design Study. Duke asserts that NEM reform — including detailed and comprehensive explanations of the proposed NEM tariffs, the TOU rates, and bill impacts — was discussed over the course of several months, with participation from over 20 stakeholders.

Duke responded to the argument of NC WARN, et al. that the cross-subsidy estimates provided by the Companies were unreliable because the analysis focused on residential customers. Duke asserts that residential customers are the primary driver of cross-subsidies on its system because under the current rate structure, NEM customers use less energy throughout the year than non-NEM customers. However, NEM customers need the same service during the winter peak, causing the volumetric rates to over-represent cost avoided when a customer only reduces energy consumption. Further, Duke states that a similar unwarranted cross-subsidy arises when utilities overpay for the power exported to the grid by NEM customers because the volumetric charge for residential customers includes the recovery of non-energy costs, which are not necessarily reduced due to these exports.

Duke reiterates its support for the fee components of its proposed NEM tariffs stating that they are all necessary to ensure that cross-subsidization is minimized. Duke states that the Commission approved the TOU-CPP rate schedules in Docket Nos. E-2, Sub 1280 and E-7, Sub 1253. Duke states that it ensured these TOU-CPP rates accurately reflect peak, off-peak, and discount times on Duke’s systems by examining Duke’s historic marginal energy costs, loss-of-load expectations from the latest Resource Adequacy Studies, load research forecasts, and solar production forecasts. Duke states the TOU-CPP rates more closely align costs with benefits because they can better account for the fact that both energy and capacity costs differ greatly based on the time

when customers utilize the utility system. Duke contends that the MMB mirrors the minimum cost to serve NEM customers and is not a penalty as 350 Triangle, et al. suggest. Additionally, Duke points out that the applicable riders and the fixed charge count in full towards the MMB and reduce the impact of the MMB. According to Duke's estimates, the MMB would increase the average NEM bill by approximately $1 per month in DEC and $3 per month in DEP service territories.

Duke states that both the GAF and non-bypassable charges are tied to the size of a customer's system. The GAF is only applied to solar facilities in excess of 15 kW in order to mitigate the risk of cross-subsidy by ensuring recovery of distribution demand costs. Duke goes on to state the non-bypassable charge will be applied as a monthly charge per kW_{DC} of the customer generator's capacity. Duke contends that the non-bypassable charges are required because without them the program expenses and non-energy linked costs would be avoided by NEM customers and ultimately collected disproportionately from non-NEM customers. Duke asserts that these mechanisms are necessarily more complex than the current volumetric rates under the existing NEM programs and, as such, they are developing a bill calculator that will help customers estimate savings from adding rooftop solar. Duke states that the calculator will model all aspects of a customer's bill, including the MMB, GAF, and non-bypassable charges, and will help customers overcome some of the additional complexity in adopting rate designs better aligned with cost causation. A similar calculator was deployed in South Carolina.

The Companies also agree with the Public Staff that the avoided cost docket is the appropriate forum for deciding excess export rates for NEM customers, which would have the NEEC updated every two years for all customers under the NEM tariffs, concurrent with the avoided cost rates. Further, Duke agrees with the Public Staff to base the NEEC rates on a five-year term, including both energy and capacity credits where applicable and weighted using a typical rooftop solar production profile. Duke states that weighting avoided cost credits based on a typical rooftop solar production profile will help ensure that annualized NEEC rates accurately reflect the average value of energy and capacity from NEM customers over TOU periods and across months.

Duke rebuts statements made by other parties that claim the proposed NEM tariffs will intentionally drive down the market for NEM in North Carolina, contending that the tariffs allow customers to obtain savings similar to if not better than the current NEM tariffs. Duke acknowledges that its modeling shows that the proposed NEM tariffs would reduce annual savings compared to current NEM programs but that the estimate does not account for reforms that provide incentives to NEM customers where they choose to complement actions that benefit all customers, such as TOU-CPP pricing signals or the Smart $aver Solar Program. Customers can take advantage of the TOU-CPP rates and increase their bill savings by consuming power during off-peak and discount time periods when electricity costs are lower and choose to export power during on-peak and critical peak periods when the power is more valuable to the system.

Duke agrees with the Public Staff that the Companies should study and consider how the NEM tariffs may be altered to better facilitate and accommodate energy storage

paired with renewable generation. Duke states that further study of energy storage is appropriate to better understand potential interactions between NEM generation and energy storage.

Duke does not agree with the Public Staff that requiring utility ownership of RECs is no longer necessary in light of the significant reduction in the cross-subsidy under the proposed NEM tariffs. The Companies believe maintaining ownership of RECs allows the benefits to flow to all customers, which Duke contends helps further reduce the potential marginal cost cross-subsidy.

Duke argues that NC WARN et al.'s argument that HB 589 requires a non-TOU NEM tariff because the statute states that the Commission shall establish net metering rates under "all tariff designs" is unfounded. N.C.G.S. § 62-126.4(b). Duke contends that NC WARN et al. omit important context by not including the latter portion of the sentence, which focuses exclusively on ensuring that each "net metering retail customer pays its full fixed cost of service." *Id.* According to Duke, this omission changes the meaning of the sentence, which when read in context is about ensuring that NEM customers pay at least their full fixed cost of service — not about maintaining the ability to net meter under all rate designs. Duke argues this is particularly important given that the current non-TOU rate design is what created the cross-subsidization issue in the first place. The Companies believe that if the General Assembly intended to mandate a specific tariff design, the statute would have done so. Duke further asserts that the proposed tariffs address the statute's requirement that NEM customers pay their full fixed cost of service.

Duke then states that the proposed NEM tariffs address residential and not nonresidential tariffs because the current residential NEM rate design, as also acknowledged by the Public Staff, is the primary driver of cross-subsidization. This is due to nonresidential rate structures including mechanisms such as demand charges to better align costs with benefits. The Companies agree with the Public Staff that nonresidential NEM reform should be addressed in the future and state that Duke agreed in the MOU to develop a policy proposal for the nonresidential NEM. Duke argues that not having new nonresidential NEM proposals should not delay the approval of the NEM tariffs currently before the Commission. Duke also contends that while the proposed NEM tariffs and Smart $aver Solar Program work in conjunction to provide increased benefits to all customers, the Commission should not link consideration of these proposals.

Concerning the Stipulation, Duke states that the Proposed Bridge Rate will replace the legacy NEM rate proposed in the Application. Duke also asserts that the Stipulation provides for a gradual transition from the current NEM tariffs to the new NEM tariffs while still complying with HB 589.

Further Responsive Comments

The Public Staff

In its Letter in Lieu of Further Responsive Comments, the Public Staff states that it reviewed the Stipulation and reply comments of the parties and does not object to the Proposed Bridge Rate.

EWG

EWG urges the Commission to reject the Application as well as the Proposed Bridge Rate and continues to argue that Duke's cost-of-service study is not sufficient to satisfy statutory requirements. EWG provides additional argument in support of its position that the Companies' cost-of-service analysis did not analyze the benefits of customer-sited generation and that costs and benefits must be evaluated using the NSPM-DER as has been done in a number of other states. EWG argues that full consideration of all of the benefits of distributed energy generation is consistent with the requirements of HB 951. EWG disagrees with Duke that an independent value of solar study would cause needless delay. EWG believes the study is a statutory requirement and that the status quo would remain in effect during such time.

NCSEA, et al.

NCSEA, et al., fully support the Stipulation. NCSEA, et al. state the Proposed Bridge Rate is a reasonable modification of Duke's proposed NEM tariffs, building upon the provision contained in the MOU. NCSEA, et al. assert that the Proposed Bridge Rate provides additional customer choice for a defined time period, addresses the concerns about the proposed Smart $aver Solar Program being unavailable for customers with gas-heated homes, and eases the transition to the TOU-CPP rates. NCSEA, et al. also note their support of the exemption from the MMB requirement for low-income and vulnerable households as a creative way to help ensure that the bill-saving benefits of rooftop solar will be available to lower-income households. Finally, NCSEA, et al. state that the commitment in the Stipulation to pursue an additional incentive program that would be compatible with gas-heated households, which cannot participate in the Smart $aver Solar Program, is consistent with the expectation in the MOU and would be a welcome addition to the innovative package of new solar proposals that are reflected in these agreements with Duke.

Donald Oulman

Mr. Oulman asserts that the Stipulation worsens the financial harm to him in terms of the out-of-pocket costs that he will incur as compared to the proposed NEM tariffs in Duke's Application. Mr. Oulman notes that it is his understanding that the Stipulation also decreases the amount of time that he could stay on a lower bridge rate from the time set forth in the proposed NEM tariffs and that it appears as though customers who installed solar in 2011 or earlier may receive no benefit from the Proposed Bridge Rate at all. Mr.

Oulman explains that if the Commission allows Duke to materially change the NEM tariffs prior to the end of the useful life of his PV solar system, it will unfairly impact the financial basis for his good faith investment.

NC WARN, et al.

NC WARN, et al. again restate their initial arguments on statutory compliance. NC WARN, et al. express concerns about the accelerated timeframe for NEM discussions during the Rate Design Study stakeholder process and argue that substantive information was provided in a manner that eliminated the possibility of meaningful discussion. NC WARN, et al. state that there is ample time to conduct an investigation into the costs and benefits of rooftop solar and that Duke's request for new NEM tariffs by January 1, 2023, is arbitrary and not required by any law. NC WARN, et al. argue the applicable statute, N.C.G.S. § 62-126.4(c), provides no deadline for implementation of new NEM tariffs. To the contrary, the statute provides that retail customers may continue net metering under the net metering rate in effect at the time of interconnection until January 1, 2027.

NC WARN, et al. also argue that the Stipulation does not correct serious defects in the Companies' Application and note that the Stipulation does not replace or change the NEM tariffs proposed in the Application but offers an alternative to those tariffs. NC WARN, et al. state the Proposed Bridge Rate is a minor adjunct to the long-term 10-year NEM tariffs proposed in Duke's Application. NC WARN, et al. note the 4-year eligibility period, annual participation caps, and treatment of legacy NEM customers as areas of concern. NC WARN, et al. also voice concern over the short period of time to review the Stipulation and the fact that the Stipulation is nonunanimous. NC WARN, et al. argue that the Commission should reject Duke's Application and lead a cost-benefit analysis of NEM generation which would include a value of solar study.

DISCUSSION AND CONCLUSIONS

Statutory Compliance

It has been over 22 years since the Commission initially approved NEM as a pilot program in 2000. Since that time, the Commission has issued a series of orders, and the General Assembly has passed several pieces of legislation that have significantly changed the landscape of renewable energy generation in North Carolina. Further, rooftop solar technology has evolved during that time, including steep declines in solar panel prices, leading to the proliferation of NEM installations that were not envisioned at the turn of the century. Throughout the two decades since the NEM tariff was approved, one of the main issues at the center of all NEM tariff proceedings has been whether and the extent to which nonparticipating customers subsidize NEM customers due to the structure and terms of the NEM tariffs.

In the Commission's 2005 and 2006 NEM Orders, the Commission acknowledged that all parties conceded that NEM could result in potential subsidies for NEM customers but stated that other benefits had been proposed by supporters that could potentially

offset such subsidies. To minimize those potential subsidies, the Commission established size limits on NEM installations, required customers be on a TOU rate schedule, and granted RECs associated with excess energy at NEM installations to the utility.

After the enactment of SB 3 in 2007, the Commission issued its 2009 NEM Order modifying the utilities' NEM programs. The 2009 NEM Order increased the maximum size of NEM systems to 1 MW to match the language in SB 3, shifted the reset credit for net exports that are carried over month-to-month to the beginning of the summer billing season, and made taking NEM service under a TOU tariff optional. The Commission held that the modifications to the NEM programs were made to recognize the change in State policy and to strike a reasonable balance between utilities, NEM customers, and non-NEM customers.

The legislature addressed cross-subsidization in 2017 when it passed HB 589. House Bill 589 required that "each electric public utility shall file for Commission approval revised net metering rates" and that such rates should be "established only after an investigation of the costs and benefits of customer-sited generation." N.C.G.S. § 62-126.4(a)-(b). House Bill 589 also stated that "cross-subsidization should be avoided by holding harmless electric public utilities customers that do not participate in such arrangements." N.C.G.S. § 62-126.2. Thereafter, House Bill 951 was enacted in October of 2021, which also required the Commission to revise existing NEM rates.

With this history in mind, the Commission considers whether Duke's proposed new NEM tariffs meet the statutory requirements established in HB 589. As part of the Rate Design Study required by the Commission in the Rate Case Dockets, Duke, along with a number of stakeholders, conducted an investigation of the current NEM tariffs. The Rate Design Study found that after considering both benefits and costs, there is potential for significant cross-subsidies for each NEM customer in both the embedded cost analysis ($25 to $30 per NEM customer per month for DEC and $35 to $40 for DEP) and the marginal cost analysis ($30 to $35 per NEM customer per month for DEC and $58 to $63 for DEP).

In response to these findings, Duke, through a stakeholder process, developed the proposed new NEM tariffs which include rate mechanisms such as the MMB, GAF, non-bypassable charges, and export credit to help lessen or eliminate the cross-subsidies. Approval of the proposed new NEM tariffs was supported by a wide coalition of parties representing utility, environmental, and solar interests who signed onto the MOU filed with the Application. The Public Staff, while not signing onto the MOU, stated in its initial comments that it generally found that the methodology and results from the Rate Design Study related to NEM were a reasonable analysis of the cost, benefits, and cross-subsidies associated with NEM and that Duke made a reasonable effort to comply with HB 589. The Public Staff also noted that the agreements enshrined in the MOU should substantially reduce the number of contested issues relative to contentious processes in other states.

Other parties, including NC WARN, et al., EWG, and 350 Triangle, et al. state that the Commission should deny the Application, arguing that Duke has yet to meet the requirements of HB 589 because it has not developed NEM rates under "all tariff designs." Further, these parties, as well as the AGO, contend that a proper investigation was not conducted because HB 589 tasks the Commission with investigating NEM rates, which should include a broader analysis of the full benefits and costs of NEM than the cost-of-service study relied on by Duke.

The Commission is not persuaded by NC WARN, et al., EWG, and 350 Triangle, et al.'s argument that Duke has not met its statutory obligations under HB 589. First, the Commission agrees with Duke and the Public Staff that the statute's intent is to ensure that new NEM rates were filed and approved "after an investigation of the costs and benefits of customer-sited generation" and that those rates "under all tariff designs . . . ensure that the net metering retail customer pays its full fixed cost of service." N.C.G.S. § 62-126.4(a) and (b). The Commission is persuaded by the plain language and express intent of HB 589. The most natural reading of the language of subsection 126.4(b) is that the Commission is to ensure that under whatever tariff designs net metering is being offered the rates set must be sufficient to recover all fixed costs of service. On the other hand, the reading of the language advocated by some of the parties is forced and effectively rewrites the sentence. It would, in effect, insert an "and" into the language of the subsection, causing it to read as a conjunctive: "The Commission shall (1) establish net metering rates under all tariff designs and shall (2) ensure that the net metering customer pays its full fixed cost of service." If the General Assembly intended for the Commission to develop a NEM option for all tariff designs, it would have more clearly and explicitly directed such. Instead, the fundamental operative requirement expressly advanced by the General Assembly is to ensure that NEM customers pay their "full fixed cost of service." Through this lens, the Commission is satisfied that Duke has met its statutory obligation. In addition, there are many rate designs currently in use — DEP alone has approximately 26 different rate schedules for residential, nonresidential, and lighting customers. It would not be practical, nor would it meet the intent and spirit of HB 589 and 951, to direct Duke to craft a separate NEM tariff for each of its rate schedules. As noted by the Public Staff, Duke made a reasonable effort to comply with HB 589. The Public Staff further noted that the subject of fixed costs and the recovery of those costs are often highly debated topics in rate case proceedings. As such, Duke's proposal provides an adequate mechanism to reduce the cross-subsidy of fixed cost recovery by incorporating a number of rate design elements into its proposal, including the requirement that NEM customers take service under a time-of-use rate schedule to enable intra-period netting.

Further, the Commission does not interpret HB 589 to require a simultaneous filing of modifications to the nonresidential NEM programs. As noted by the Public Staff, the issue of cross-subsidization for nonresidential customers is not as prominent and need not be contemplated at this time in an effort to meet the statutory requirements because those rate schedules do not have the same risk of cross-subsidization. Duke contends in its reply comments that this lower risk is largely due to the use of rate designs that include demand charges, which from a cost-causation perspective are primarily designed to

recover fixed costs. As Duke and the Public Staff contend and the Commission concludes, the simplicity of the current residential NEM tariffs has led to cross-subsidization within the residential class because significant fixed costs are recovered via volumetric charges in residential tariffs. Further, Duke states in its reply comments that it is necessary to address nonresidential NEM reform in a subsequent Commission proceeding and via the MOU has agreed to work collaboratively with stakeholders on this issue. The Commission also notes that Duke filed proposed new NEM tariffs for nonresidential customers in Docket Nos. E-2, Sub 1300 and E-7, Sub 1276. Accordingly, the Commission finds that Duke's proposed residential NEM tariffs have met the statutory requirement to develop NEM rates that address a NEM customer's full fixed cost of service. The Commission will address the merits of the proposed nonresidential NEM tariffs in Docket Nos. E-2, Sub 1300 and E-7, Sub 1276, and declines to order a separate study now.

The Commission also disagrees with the argument that HB 589 requires the Commission to conduct its own investigation of the costs and benefits of customer-sited generation. The statute states that "rates shall be . . . established only after an investigation of the costs and benefits of customer-sited generation." N.C.G.S. § 62-126.4(b) The statute then requires the Commission to establish the rates. *Id.* Nothing in the plain language of the statute mandates that the investigation must be conducted by the Commission, only that an investigation take place prior to rates being established. While the statute provides the Commission with the ability to direct an investigation, nothing in the plain language of the statute requires the Commission, itself, to conduct the investigation. The Commission concludes that the statute only mandates that an investigation be conducted prior to the establishment of rates, which has occurred.

Nor does the statute require that the "investigation" be in any particular format or using any particular procedure. It does not mandate a contested evidentiary hearing, nor does it require that the investigation be conducted, overseen, or moderated by a third party. Chapter 62 of the General Statutes empowers the Commission to conduct many types of proceedings, including several types of "investigations," and the Commission concludes that the General Assembly intentionally chose the generic term "investigation" with the intent that the Commission would assemble, review, and consider such information as it deemed appropriate to the nature of the topic and the issues needing resolution. The Commission also disagrees that the investigation was insufficient to meet the statutory requirement. The statute requires an investigation of the costs and benefits of customer-sited generation. *Id*. NC WARN, et al., EWG, and 350 Triangle, et al. assert the Commission or Duke must conduct a value of solar study prior to the approval of new NEM tariffs. The analyses in the embedded and marginal cost studies that Duke conducted as part of its Rate Design Study capture the majority, if not all, of the known and verifiable benefits of solar generation. The Commission further finds that Duke's use of the cost-of-service studies conducted in 2019, as part of DEC's and DEP's last general rate cases, is appropriate. Those 2019 studies, using a 2018 test year, were used as the basis for developing the Companies' current retail rates and were the most recent cost-of-service studies approved by the Commission. Given that the cost-of-service studies used for this investigation were the last ones conducted and no costs have been

added to base rates since that time, the Commission finds that the 2018 test year for the cost-of-service study and the embedded and marginal cost analyses were sufficient to determine the need for the proposed NEM tariffs.

NC WARN, et al. further contend that Duke has failed to give proper consideration to the benefits of avoided T&D costs and ancillary services attributable to NEM generation. NC WARN, et al. further cite the failure to consider T&D-related losses and capacity. Duke's reply comments restated the fact that both the embedded and marginal cost studies recognized the benefits of not having to build T&D assets. However, Duke's reply comments did not consider the avoided T&D benefits in its NEEC calculations.

The record in this proceeding relative to including the benefits of avoided T&D costs in the NEEC is inconclusive and the Commission will not require that such benefits be added to the NEEC calculations at this time, but rather will revisit the matter in future avoided cost proceedings. The Commission notes that the parties make a distinction between what T&D assets could be avoided initially by NEM as well as those assets that would be deferred in the future. The Commission reiterates its position that only known and measurable benefits and costs should be included in the determination of the NEEC. Consistent with the Commission's November 22, 2022 Order Establishing Standard Rates and Contract Terms for Qualifying Facilities (Avoided Cost Order) in Docket No. E-100, Sub 175, Duke's inclusion of costs and benefits associated with not building T&D assets is based on the capacity and reliability benefits associated with NEM. The Commission cannot speculate on future deferrals of T&D costs. The Commission is also not persuaded that NEM will always provide a grid deferral benefit, which alone justifies the exclusion of avoided T&D benefits from the NEEC. The costs and benefits of NEM facilities have changed since the Commission issued its 2009 NEM Order, and the Commission recognizes that those costs and benefits will continue to change in the future. The Commission stated in the Avoided Cost Order that it is not appropriate currently to include the implied cost of carbon in the calculation of avoided cost rates because it is not known and verifiable. Avoided Cost Order at 29-30. Given that the benefits of NEM may be more readily known and verifiable in the future, the Commission finds and concludes that it is appropriate to revisit the appropriate NEEC and whether avoided T&D and carbon costs should be included in the calculation of the NEEC in future avoided cost proceedings.

Finally, the Commission notes that in addition to the study and stakeholder review process used by Duke in its comprehensive Rate Design Study, benefits of customer-sited generation was also a topic of discussion and commentary in recent proceedings in Docket No. E-100, Sub 179 (2022 Carbon Plan Proceedings). Duke in its proposals and several intervenors in their own submissions considered, evaluated, and discussed the use of behind-the-meter generation to achieve the goals of HB 951 and the general system benefits of doing so. The Commission has given consideration to this information in its determination in the present docket and notes that since both HB 589 and HB 951 address review and revision of the present NEM programs, it is appropriate to consider such information.

The Commission finds and concludes that Duke, through its comprehensive Rate Design Study and stakeholder process, properly conducted an investigation of the costs and benefits of customer-sited generation as required by HB 589 and has presented those results to the Commission in this docket.[9] All parties have had an opportunity to comment on the details and the merits of such study. Accordingly, the Commission finds and concludes, based on all the foregoing materials of record, that the requirements established in HB 589 and N.C.G.S. § 62-126.4 have been satisfied in a manner sufficient to enable the Commission to establish new NEM tariffs as mandated by those enactments. The Commission further finds and concludes that given the dynamic nature of the inputs of these calculations, a periodic review of these costs and benefits is appropriate.

NEM Tariff Components

The Commission determines that the proposed NEM tariffs are reasonable. However, the Commission finds that some of the proposed tariff components — including netting during CPP periods, the NEEC calculation, and RECs ownership — should be modified before it will grant approval. The Commission addresses the NEM tariff components and modifications in the following discussion.

The Commission is persuaded by Duke's contention that the MMB, GAF, and non-bypassable charges included in the proposed NEM tariffs are essential components in ensuring that the Companies recoup a reasonable portion of the fixed and other rider costs from NEM customers, thus addressing the cross-subsidy issue. The MMB recovers distribution-related costs associated with an average residential system. These costs, which are normally recovered through the volumetric charge, may not be recovered from NEM customers who consume fewer kWh than a non-participating customer. Until it can be definitively determined that distribution-related costs to serve NEM residential customers are significantly less than the fixed cost to serve non-NEM residential customers, the Commission finds that MMB reflects the minimum cost to serve NEM customers and is therefore necessary to ensure that NEM customers are paying their own cost to serve. The Commission further finds that the GAF as applied to solar facilities over 15 kW is also a key element to mitigate the risk of cross-subsidies by ensuring recovery of distribution demand costs. The Commission also finds that the non-bypassable charges, which include the DSM/EE rider, securitized storm cost recovery, and other similar charges as may be specifically approved by the Commission, are necessary to guarantee that program expenses and non-energy-related costs are collected from all residential customers, including NEM customers. The costs included in the non-bypassable charges are costs the utility incurs that cannot be reduced or avoided by behind-the-meter generating facilities. Thus, the Commission finds and concludes that

[9] Duke's Comprehensive Rate Design Study considered costs and benefits using both an embedded cost of service model and a marginal cost of service model. Because the utilities' current rates are established using an embedded cost of service model, the Commission has relied on the results of that model in arriving at its conclusions in this order. However, the Commission notes that the alternative marginal cost analysis is fully consistent with these conclusions and would not support different results from those reached here.

the MMB, GAF, and non-bypassable charges are necessary to help abate subsidization of NEM customers by non-NEM customers and are therefore appropriate for inclusion in the NEM tariffs.

These mechanisms are necessarily more complex than the current tariffs, and thus the Commission directs Duke to develop an online savings calculator that will model all aspects of a customer's bill to enable customers to estimate savings as stated in the MOU and Duke's reply comments. The Commission directs Duke to work with stakeholders to develop and publicize the online savings calculator within 60 days of the date of this order and at least 30 days prior to the effective date of the NEM tariffs.

Netting of Consumption and Exports

The Commission agrees with Duke's proposal regarding the netting of consumed energy and exports within the same peak period because it assigns the same value to both consumption and exports that take place during the same period with any excess exports being credited at the avoided cost rate. The Commission, however, finds the Public Staff's position, which was supported by NCSEA, et al. regarding netting during CPP periods reasonable and appropriate. The Commission finds that Duke's proposal, which does not net exports during the CPP period with consumption during the CPP period, is not appropriate. Duke stated in its reply comments that it did not object to this revision as recommended by the Public Staff. Accordingly, the Commission accepts Duke's proposal as modified by the Public Staff.

NEEC Calculation

Duke proposed to credit NEM customers for net excess energy exported to the grid during any billing period at the Commission's approved avoided cost rates that have historically been paid to utility-scale QFs and requested that NEM generating facilities be "deemed to be" QFs under PURPA. In initial comments, the North Carolina Rooftop Solar Installers stated that the avoided cost rates for QFs are too low, and that Duke should not be permitted to lock in the current NEEC for the next ten years at the Commission-approved avoided cost rate under PURPA. The Public Staff agreed with Duke that NEM generating facilities should be compensated for total net exports using the avoided cost rate approved by the Commission in the biennial avoided cost proceeding. However, the Public Staff expressed concern over Duke's calculation of the NEEC and recommended modifications to the calculation of the NEEC. The Public Staff further noted that the calculation of the NEEC should be addressed in the biennial avoided cost proceeding. In its reply comments, Duke supported the Public Staff's proposal to establish the NEEC in the avoided cost proceeding calculated using a five-year term, including both energy and capacity credits where applicable, and weighted using a typical rooftop solar production profile. Duke also indicated that it would update the NEEC upon periodic approval of new avoided cost rates.

Based upon the materials of record in this docket, the Commission concludes that it is appropriate for the NEM tariffs to provide that net excess energy exported to the grid

by a NEM customer be credited to the customer at the Commission's approved avoided cost rates used for purposes of PURPA. NEM generating facilities are not "deemed to be" QFs under PURPA by virtue of their participation in net metering, and the Commission notes that in any event, only generating facilities that are eligible to qualify as QFs under PURPA will also be able to meet the eligibility requirements established for service under the proposed NEM tariffs. The important point is that the Commission's decision that the NEEC calculation should be based on avoided cost rates is consistent with the Federal Energy Regulatory Commission's decision regarding the treatment of NEM programs under PURPA. *MidAmerican Energy Co.*, 94 FERC ¶ 61, 340, at 6 (2001). Moreover, the use of avoided cost rates for purposes of determining the NEEC is fully consistent with the goal of N.C.G.S. § 62-126.4(b) to eliminate subsidies in favor of NEM customers. Non-NEM ratepayers will neither benefit nor will they be penalized if NEM customers are compensated at a rate which equals what the utility itself would have paid to procure the same quantities of energy from another resource.

The Commission concludes that the Public Staff's proposal to address the NEEC in the biennial avoided cost proceeding is reasonable. The Commission will address the calculation of the NEEC in the avoided cost docket and directs Duke to file in future avoided cost proceedings its calculation of the NEEC.

Renewable Energy Certificates

The Commission is persuaded by the Public Staff's argument that the utilities no longer need to retain ownership of RECs associated with NEM customer generation. However, the Commission rejects the Public Staff's recommendation to include an opt-out provision in the new NEM tariffs. The Commission originally allowed the utilities to collect from NEM customers any unused credits for excess generation and RECs created from that excess generation for the benefit of the utilities' non-NEM customers to lessen the potential for cross-subsidization. Under the current NEM policy, the utility is granted ownership of all RECs earned by NEM customers not on a TOU-demand rate schedule. Now, as the Public Staff correctly asserts, the reduction in cross-subsidies that will result from the approval of these new NEM tariffs reduces the need to transfer RECs to Duke and non-NEM customers.

Duke contends that the utilities should continue to obtain these RECs to allow the benefits to flow to all customers and further reduce the marginal cost cross-subsidy. The Commission does not find Duke's argument persuasive. The embedded cost shift is essentially eliminated and the marginal cost cross-subsidy should be minimal under the new tariffs. The Commission therefore finds it appropriate for NEM customers to retain ownership of their own RECs and concludes that Duke's proposed NEM tariffs should be modified to reflect this change.

Proposed Bridge Rate

The Commission finds reasonable and approves the agreement reached by Duke and NCRSI regarding the option for legacy and future NEM customers to transition to the

new NEM tariffs through the Proposed Bridge Rate. Duke stated that this Proposed Bridge Rate will replace the legacy NEM rate proposed in the Application. House Bill 589 allows for current NEM customers to remain on current NEM rates until January 1, 2027. The Proposed Bridge Rate provides an alternative to the default TOU rate design in the original Application that requires a CPP-oriented rate schedule for legacy NEM customers and new NEM customers who enroll between January 1, 2023, and December 31, 2026. The Commission finds that the NEM tariffs, as Duke initially proposed in its Application, are the most direct way to quickly minimize and potentially eliminate cross-subsidization. The Commission last adjusted the NEM tariffs when it issued the 2009 NEM Order modifying rates to meet State policy changes while striking a reasonable balance between utilities, NEM customers, and non-NEM customers. The Commission is doing the same here by recognizing the need to balance the interest of NEM customers, non-NEM customers, the utilities, and compliance with HB 589. The Commission finds that the annual capacity caps for participation in the Proposed Bridge Rate will provide an additional rate option for NEM customers while ensuring that the new NEM tariffs are phased in over time. Therefore, the Commission finds and concludes based on all the foregoing materials of record that the Proposed Bridge Rate meets the intent of HB 589 by allowing legacy NEM customers to remain on their current rate schedule, while the utilities minimize the cross-subsidization of those customers by phasing in the new tariffs over time.

As pointed out by the Public Staff, NEM reform proceedings in other states can be exceedingly contentious. The Commission acknowledges the give and take of the stakeholder process and appreciates the extensive work and compromises made by all parties to reach agreement and resolve contested issues prior to the filing of the NEM tariffs, as reflected in the MOU and the Stipulation. Accordingly, the Commission approves the Proposed Bridge Rate described in the Stipulation to provide multiple options for current and future NEM customers to avoid rate shock while transitioning to the new rates and to provide a gradual reduction in cross-subsidies for both groups of customers.

Reserved Issues - DSM/EE Incentives and Programs Contained in the MOU and Stipulation and Matters Related to Energy Storage

The MOU executed and attached to the Application contemplated an agreement on the proposed NEM tariffs currently before the Commission together with the Smart $aver Solar Program that was filed in Docket Nos. E-2, Sub 1287 and E-7, Sub 1261. The Stipulation also includes references to the Smart $aver incentive program as part of the agreement between the parties. Notwithstanding this, Duke states that, while the Smart $aver Solar Program was developed to work in conjunction with the proposed NEM tariffs, approval of the two matters should not be linked. The Commission agrees with Duke that approval of the Smart $aver Solar Program is not required in order to establish new NEM tariffs and has therefore chosen to address the Smart $aver Solar Program separately in Docket Nos. E-2, Sub 1287 and E-7, Sub 1261.

Further, the Commission acknowledges the parties' concerns that energy storage is not specifically addressed in the proposed new NEM tariffs and also acknowledges that energy storage paired with behind-the-meter generation could potentially increase the value of the DERs to both the customer and the electric supplier in a more cost-effective fashion. The Commission removed the prohibition on storage in its 2006 NEM Order and recognizes that energy storage may have an increasingly important role in customer-sited generation in the future. However, after consideration, the Commission concludes that before Duke's NEM tariffs are further modified to address the operation of storage coupled with customer-sited generation, additional field learning and experimentation would be beneficial. Accordingly, the Commission has chosen to address matters relating to the inclusion of storage as part of a NEM generating facility in its consideration and decision in Docket Nos. E-2, Sub 1287 and E-7, Sub 1261, and interested parties are referred to the Commission's order in those dockets.

IT IS, THEREFORE, ORDERED as follows:

1. That the NEM tariffs proposed in the Application, as modified above and subject to the ordering paragraphs below, are approved effective July 1, 2023, for a period of four years from the effective date. Six months prior to the expiration of these rates, Duke shall make a filing to continue its NEM tariffs with any modifications that are appropriate to address any further cross-subsidization issues discovered, to accommodate and recognize any new or additional benefits that have been validated by known and measurable data, to address the integration of storage with behind the meter generation as discussed above, or to otherwise comply with any statutory or regulatory changes that may occur;

2. That the NEM tariffs approved herein should be periodically updated as changes in costs and benefits occur as the result of changes to base revenues approved in a general rate case filed pursuant to N.C.G.S. § 62-133, or biennial avoided cost proceedings. Any modified NEM tariffs resulting from these periodic updates should allow customers taking service under these newly approved tariffs to remain on the tariffs for a period of ten years;

3. That the rates for the Monthly Minimum Bill, Grid Access Fee, and non-bypassable charges as identified in the Application are hereby approved;

4. That the NEM tariffs shall net exports against consumption in the same pricing periods, including the CPP periods, and shall be netted monthly;

5. That the NEEC shall be established in the Commission's biennial avoided cost proceeding;

6. That no later than 60 days from the date of this Order, Duke shall develop, with input from stakeholders, an online bill savings calculator that will model all aspects of a customer's bill to enable customers to estimate savings;

7. That the Proposed Bridge Rate as described in the Stipulation is approved;

8. That Duke shall revise the NEM tariffs to allow the NEM customer to retain all RECs produced by the NEM facility, rather than the utility;

9. That Duke shall file annual reports on the implementation of NEM service. Duke is to work with stakeholders, including the Public Staff, to develop the format and content of the annual report, which should include, at a minimum:

a. the number of customers on each NEM rate schedule;

b. the amount of load in each NEM rate schedule, including a comparison to NEM projections used in Duke's Integrated Resource Plans;

c. the average kW capacity per NEM customer;

d. the number of customers with storage and the capacity of that storage;

e. an updated marginal and embedded cost study in the same manner as presented with the Application;

f. an assessment of interconnection costs and related issues, including costs of any upgrades assigned to NEM customer;

g. any costs incurred by the utilities to resolve any load conditions, required network, or other upgrades to distribution facilities;

h. a load analysis of consumption;

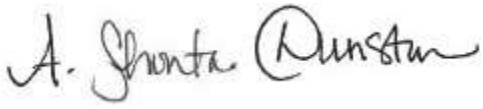
i. and exports over each TOU-CPP period; and

10. That Duke shall file with the Commission, within 10 days following the date of this order, revised NEM tariffs compliant with this order and showing an effective date July 1, 2023, for the tariffs.

ISSUED BY ORDER OF THE COMMISSION.

This the 23rd day of March, 2023.

NORTH CAROLINA UTILITIES COMMISSION



A. Shonta Dunston, Chief Clerk