STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-100, SUB 83

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of Investigation of Net Metering	) ORDER AMENDING) NET METERING POLICY

BY THE COMMISSION: On October 20, 2005, the Commission issued an Order Adopting Net Metering in the above-captioned docket requiring the electric public utilities in this State to file tariffs or riders to allow net metering effective on or before January 1, 2006. On July 6, 2006, the Commission issued an Order on Reconsideration Modifying Net Metering Tariffs and Riders.

As stated in the October 20, 2005 Order, "net metering" generally refers to a billing arrangement whereby a customer that owns and operates an electric generating facility is billed according to the difference over a billing period between the amount of energy the customer consumes and the amount of energy it generates. In its Orders, the Commission required utilities to offer net metering to a customer that owns and operates a solar photovoltaic (PV), wind-powered, micro-hydro, or biomass-fueled electric generating facility. The facility may have a capacity of up to 20 kilowatts (kW) for a residential customer-generator and 100 kW for a non-residential customer-generator and shall interconnect and operate in parallel with the utility's distribution system. Each utility was ordered to make net metering available to customer-generators on a first-come, first-served basis in conjunction with its approved small generator interconnection standard up to an aggregate limit of 0.2% of the utility's North Carolina jurisdictional retail peak load for the previous year. The Commission's Orders specified that net metering customers must be on a time-of-use (TOU) demand rate schedule[1] and that the utility may not charge the customer-generator any standby, capacity, metering or other fees or charges other than those approved for all customers under the applicable TOU-demand rate schedule. The kilowatt-hour credit, if any, shall be applied to the following monthly billing period, but shall be reset to zero at the beginning of each summer billing season. Any renewable energy certificates (RECs) associated with this excess generation shall also be granted to the utility when the excess generation credit balance is zeroed out.

[1] The Commission has approved both TOU-energy and TOU-demand rate schedules for use in North Carolina. Under TOU-energy rate schedules, a customer is billed at a different rate for energy used during on-peak and off-peak hours. Under TOU-demand rate schedules, the on-peak and off-peak rates are slightly lower than under the TOU-energy rate schedules, but the customer also incurs a demand charge based upon its highest energy usage during any 15-minute period during the month.

Following issuance of the October 20, 2005 Order, the North Carolina Sustainable Energy Association (NCSEA) filed a Motion for Reconsideration of several issues alleging that the net metering policy "is too complicated and restrictive and it creates uncertainty." In addition to its objection to the requirement for use of a TOU-demand rate schedule due to the complexity of understanding such schedules, the NCSEA argued that net metering customers should be allowed to install systems with batteries, that micro-hydro generation should be allowed as an eligible technology, and that all associated RECs should remain with the customer-generator.

On February 3, 2006, the Public Staff filed a response to the Motion for Reconsideration in which it noted that the current State energy policy generally favored the availability of TOU rates and that the Commission had stated its intent to monitor and review implementation and use of net metering, which would allow reconsideration of the requirement to use TOU-demand rate schedules after more experience was gained.

In its July 6, 2006 Order on Reconsideration, the Commission stated that the requirement of TOU-demand rates addresses concerns about potential discrimination and cross-subsidization between those customers who do and those who do not choose to net meter. It also declined to find that such rates were too complicated. With regard to ownership of RECs, the Commission held that it had properly allocated costs when it granted excess energy and RECs to the utility to offset, in part, the costs that would be borne by the utility and non-participating ratepayers, but barred the utility from charging additional standby, metering, or other charges. The Commission stated that:

> [w]hile the magnitude of these costs and benefits are uncertain and cannot be reasonably predicted, the Commission remains convinced that its decision appropriately allocates these costs and benefits among net metering customers, utilities, and their remaining ratepayers.

Duke Energy Carolinas, LLC (Duke); Progress Energy Carolinas, Inc. (Progress); and Virginia Electric and Power Company, d/b/a Dominion North Carolina Power (Dominion), filed net metering tariffs as required by the Commission. As of October 1, 2008, only four customers are reported to have chosen to net meter. Most customer-generators eligible for service under the net metering tariffs have instead chosen to sell all of the energy from their generating facilities to the utility to which they are interconnected pursuant to an avoided cost rate schedule and to participate in the NC GreenPower program.[2]

[2] As of February 28, 2009, NC GreenPower purchases RECs from 219 solar PV facilities. NC GreenPower does not provide an incentive payment to customers who choose to net meter. Duke currently has 35 customers on its Rider SCG (Small Customer Generator) that generate electricity to offset their purchases and that sell excess energy to Duke at its avoided cost rates. These customers are eligible to participate in NC GreenPower to the extent of any excess energy sales to Duke.

SESSION LAW 2007-397 (SENATE BILL 3)

Since the Commission initially allowed net metering in 2005, the General Assembly amended North Carolina energy policy by enacting Session Law 2007-397 (Senate Bill 3) to promote the development of renewable energy in this State. G.S. 62-2(a)(10). As part of this comprehensive energy legislation, the General Assembly 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." G.S. 62-133.8(i)(6).

On June 9, 2008, the Commission issued an Order Establishing Procedural Schedule to comply with this mandate from the General Assembly. The Commission noted that cross-subsidization from non-participating customers to customer-generators is the central issue in deciding whether to expand net metering to larger generators of one megawatt (MW) or less, quoting from its October 20, 2005 Order:

> The Commission notes that all parties concede that allowing net metering will result in the potential for subsidies for those customers. A number of other benefits, however, have been advanced that could potentially offset any such subsidies. On balance, recognizing the benefit of additional renewable electric generation in this state, the Commission concludes that this represents an appropriate next step forward.

The June 9, 2008 Order also noted that the Commission's rules currently limit both the size of individual generators and the total amount of generation eligible for net metering. The Commission pointed out, as well, that the Renewable Energy and Energy Efficiency Portfolio Standard (REPS) established by Senate Bill 3 and the Commission's rules implementing the REPS have created a new market for the RECs associated with net-metered renewable energy facilities. The Commission determined that, pursuant to the mandate imposed upon it in Senate Bill 3, it would consider whether to allow net metering of solar PV, wind-powered, micro-hydro, or biomass-fueled electric generating facilities up to 1 MW or some smaller size; whether to allow additional types of generating facilities to net meter; and whether to change other terms and conditions under which generating facilities currently are allowed to net meter.

PARTIES, FILINGS, AND PUBLIC HEARINGS

In its June 9, 2008 Order, the Commission requested that the parties file testimony and exhibits addressing seven specific questions as well as any additional information for the Commission's consideration. The seven questions involved consideration of the following issues: quantification of the potential cross-subsidization under several scenarios; whether RECs should be accrued by the utility or retained by the generator; whether the total generation eligible for net metering should be increased; whether additional kinds of electric generating facilities should be eligible for net metering; and comparison of the overall economics of net metering larger renewable customer-owned generators under various scenarios for REC ownership versus the

bids utilities have received in response to their requests for proposals for renewable energy and/or RECs for REPS compliance.

On August 20, 2008, the North Carolina Chapter of the Sierra Club requested that the Commission hold public hearings in Charlotte and Raleigh as part of its consideration of the net metering issues specified in the Commission's June 9, 2008 Order. Sierra Club stated its belief that the Commission would benefit from hearing directly from small businesses and individuals who would like to participate in net metering. On August 29, 2008, the Commission issued an Order scheduling public hearings in Charlotte and Raleigh, requiring publication of notice, and revising the procedural schedule for filing rebuttal testimony and exhibits and for filing proposed orders and briefs.

Progress, Duke, Dominion, NCSEA, and the Public Staff continued to actively participate as parties to this docket. In addition, interventions were filed and granted for Interstate Renewable Energy Council (IREC) and for Wal-Mart Stores East, LP, and Sam's East, Inc. (collectively, Wal-Mart). Other parties previously allowed to intervene in this docket include American Solar Energy Society; American Wind Energy Association; Carolina Utility Customers Association, Inc.; Enerdyne Power Systems, Inc.; North Carolina Association of County Commissioners; North Carolina Consumers Council, Inc.; Solar Energy Industries Association; Southern Environmental Law Center; the City of Greensboro; the City of Durham; the Town of Chapel Hill; and Rhonda Smith-Frazier. The intervention and prior participation of the Attorney General is recognized pursuant to G.S. 62-20.

On August 29, 2008, expert witness testimony was filed by Richard P. Mignogna and Donald Morrow on behalf of NCSEA; David F. Koogler on behalf of Dominion; Jane L. McManeus and Christopher M. Fallon on behalf of Duke; Laura A. Bateman on behalf of Progress; and Michael T. Sheehan and Gary L. Nakarado on behalf of IREC.

On September 5, 2008, Carolinas Clean Air Coalition filed a letter requesting that the Commission schedule public hearings in Asheville and in Raleigh. On September 12, 2008, the Commission issued an order denying that request because the Commission had already scheduled public hearings in Charlotte and Raleigh.

On September 30, 2008, and October 2, 2008, the Commission held public hearings, as scheduled, in Raleigh and Charlotte. Altogether, 22 members of the public spoke at the hearings. Five of the public witnesses stated that they work for renewable energy businesses. Three of the public witnesses stated that they work for environmental policy organizations. Most of the public witnesses stated that policies regarding net metering should be changed so as to make distributed solar generation financially viable for homeowners and businesses. One witness testified that if Duke is allowed to earn a fair return on its investments in distributed solar energy, the Commission should extend that same fair return to customers who do the same. Many witnesses testified that better net metering policies will encourage distributed renewable generation and that distributed renewable generation should be encouraged because it

will provide environmental benefits, create jobs, reduce energy losses on the distribution and transmission systems, and provide sources of emergency power. About one-third of the public witnesses stated that the Commission should allow larger generators to participate in net metering, that the price utilities pay for power should equal the retail price they charge for power, and that customers should be allowed to own all of the RECs associated with their electric generation. Several public witnesses stated that customer-generators should not be required to participate in net metering via a TOU-demand tariff and that monthly fees or charges and interconnection fees should be waived. Many people stated that they find the process of self-generation to be cost-prohibitive and confusing and that it involves too much paperwork. Several public witnesses stated that North Carolina's net metering policies compare poorly with those in other states.

In addition, the Commission received eight consumer statement letters in this docket echoing the comments made at the public hearings. In addition, several were from homeowners who had installed solar PV systems and arranged to sell the output to NC GreenPower. They stated that initial contracts with NC GreenPower are short-term (five years) and expressed support for fair policies that would make net metering a viable option for them.

On or about November 10, 2008, parties submitted rebuttal testimony as follows: Rosalie R. Day on behalf of NCSEA; Gary L. Nakarado on behalf of IREC; Edmund P. Finamore on behalf of Wal-Mart; Christopher M. Fallon and Jane L. McManeus on behalf of Duke; and Laura A. Bateman on behalf of Progress.

Duke, IREC, Wal-Mart, NCSEA, and the Public Staff filed briefs on December 22, 2008. Dominion and Progress filed comments in lieu of a brief.

POSITIONS OF THE PARTIES

As stated in the June 9, 2008 Order, the primary issue before the Commission pursuant to Senate Bill 3 is whether to allow larger renewable generators up to 1 MW to be eligible to net meter. The Commission sought input regarding the degree to which net metering involves cross-subsidies and the potential for cross-subsidization where the associated RECs are either accrued by the utility or retained by the generator. The Public Staff noted, however, that the cross-subsidy calculations provided by Duke, Progress and Dominion were not particularly helpful. Each utility used a different methodology to calculate any cross-subsidy. For example, Duke subtracted the avoided cost from net lost revenue and determined that a subsidy existed if the result was positive, while Progress subtracted the avoided energy cost from annual lost revenue to determine the subsidy. Dominion added the standby charge and additional metering charges to arrive at a subsidy amount. NCSEA noted that the problem with this analysis is that any cross-subsidies that occur are inherent in the existing rate structure and are not a product of net metering. While the Public Staff believed that, in most cases, net metering would result in some subsidization of self-generators, it did not find that the calculations provided by the utilities adequately captured the costs and benefits. The

Public Staff proposed that the Commission order the utilities to conduct a cost of service study within 90 days to review the calculation of standby and metering charges to ensure that they are appropriate.

NCSEA, IREC and Wal-Mart argued that the utilities did not fully quantify the benefits of self-generation, especially self-generation from renewable energy resources, such as energy independence; local job creation; reduced emissions; line loss reductions; improved voltage; diminished land use effects; lower right-of-way acquisition costs; reduced capacity, transmission and distribution costs; reduced congestion; and reduced vulnerability of the system to terrorism.

All parties directly or indirectly acknowledged that, with the passage of Senate Bill 3, RECs currently have more value than they did when the Commission last acted on net metering policy. The utilities generally refrained from explaining how the bids they've received for renewable energy and/or RECs compare to the economics of net metering. Even so, Duke stated that, based on current REC values and current TOU rates, the net metering scenario under which all RECs would accrue to the utility at no additional cost and apply toward REPS compliance appears to be equal or superior to purchasing an equivalent amount of energy and RECs in the market. Duke stated that for solar generation, given current market values, it is appropriate to allow generators up to 1 MW to net meter if the RECs accrue to the utility, provided sufficient transmission and distribution infrastructure exist.

While Progress believes that it would only be by chance if the costs of cross-subsidization matched the value of acquiring the RECs at no cost, it stated that if the Commission increases the allowable size for net metering participants, it should also address the issues of timely recovery of all costs by the utilities and the ownership of RECs associated with net-metered renewable energy. Progress stated that utilities should be allowed to recover all costs of net metering through the REPS cost recovery rider. Recoverable costs should include all costs paid to net metering participants for excess energy, the difference between the value of any credits received by the participant for net-metered energy and the utility's avoided energy costs, any other costs associated with the net metering program, and any other reductions in revenue incurred by the utility due to the net metering program that have the effect of denying the utility recovery of its fixed costs. The net metering participant should be required to convey to the utility all RECs associated with the renewable energy generated under the net metering program to be used by the utility to satisfy its REPS requirement.

The Public Staff noted Progress's request to recover all costs of net metering through the annual REPS cost recovery rider, that the participants be required to convey all RECs associated with renewable energy generated to the utility, and the utility be allowed to use these RECs towards compliance with its REPS requirement. The Public Staff opposed Progress's request because the utilities have requested direct recovery of metering and standby charges associated with such generation, as well as the grant of all net excess generation at the end of the program year. TOU-demand rates compensate the utilities for any costs. The Public Staff asserted that to also allow

recovery of all costs through the annual REPS cost recovery rider would allow utilities to double recover their costs. The Public Staff stated that Progress's and Duke's requests for all RECs associated with the energy generated through net metering underscored the increasing value of RECs. The Public Staff stated that, if the utilities propose to receive all RECs associated with the total generation along with direct cost recovery and cost recovery through the annual REPS cost recovery rider, they would be over-recovering even more.

NCSEA noted that Senate Bill 3 created a market for North Carolina RECs that did not previously exist. NCSEA stated that taking the RECs and excess energy at the beginning of each summer season precludes a customer-generator from using the full output of its renewable energy facility and stands in contrast with the State's policy objectives. G.S. 62-133.8(i)(7) indicates that energy and the associated RECs are the private property of the customer-generator and requires the Commission to:

> Develop procedures to track and account for renewable energy certificates, including <u>ownership of renewable energy certificates that are derived from a customer owned renewable energy facility</u> as a result of any action by a customer of an electric power supplier that is independent of a program sponsored by the electric power supplier. (Emphasis added.)

NCSEA argued that the granting of the personal property of a net-metered customer-generator to the utility, without just compensation, is an unconstitutional taking. Customer-generators can participate in net metering only if they are willing to forfeit property to the utility. NCSEA asserted that this forfeiture is mandatory and coerced. NCSEA stated that, based on the utilities' testimonies, the value of any alleged cross-subsidy to customer-generators is insignificant in comparison to the expected value of the RECs.

With regard to the question of whether larger (up to 1 MW) customer-generators should be allowed to net meter, Dominion stated that net metering was not needed for larger installations because they have other tariff options. Duke and Progress stated generally that expanding the size of net metering is not recommended, but would be acceptable so long as all of the associated RECs accrue to the utility at no additional cost and the costs of net metering can be recovered through the REPS rider. Dominion stated that if the Commission decides larger customers can participate in net metering, those customers should be required to pay standby and metering charges. Duke argued that standby charges (and power factor charges) are necessary unless the RECs earned by the customer-generator accrue to the utility. Progress stated that standby charges should be applicable to larger net-metered customer-generators to minimize cross-subsidies by other ratepayers.

IREC, NCSEA and Wal-Mart each stated that larger customer-generators should be allowed to net meter, while the Public Staff agreed so long as a study is conducted to sort out the issue of cross-subsidies. IREC supported an increase in eligibility for net-metered systems up to 1 MW without imposing any additional standby charges or fees.

NCSEA noted that the public interest is served by encouraging private investment in renewable distributed generation (DG). NCSEA noted that Duke highlighted the benefits of DG in its Application for Approval of Solar Photovoltaic Distributed Generation Program filed in Docket No. E-7, Sub 856. NCSEA quoted Duke's Application as offering "solutions to some of the nation's pressing energy and electric power problems, including power quality issues, tighter emissions standards and transmission bottlenecks." NCSEA asserted that utilities inappropriately dismiss the benefits of DG when the systems are privately owned. The Public Staff believed that for systems above 20 kW, standby and metering charges are appropriate because these costs cannot be considered merely de minimis and proposed that the utilities conduct a cost of service study to review the calculation of such charges. Wal-Mart stated that the Commission should prohibit charges for standby service because there is insufficient operating experience with customer self-generation to determine the real costs with any reasonable accuracy.

Similarly, parties disagreed as to whether it is appropriate to require net metering customer-generators to participate via a TOU-demand tariff. Dominion stated that requiring customer-generators to participate in net metering via a TOU-demand rate schedule achieves a balanced approach to net metering. Duke asserted that TOU-demand rates are still necessary, absent other protections. Duke conceded, however, that if RECs from solar generation were to accrue to the company without additional cost, it might not be necessary for those customer-generators to be on a TOU rate. Progress stated that under a TOU-demand tariff, the energy credit that is received for excess generation more closely matches the costs avoided by the utility since the energy rate primarily recovers energy-related costs. Similarly, to the extent the customer reduces their on-peak demand they will receive a billing benefit that better recognizes any reduction in the utility's investment in fixed costs needed to provide service. This approach doesn't eliminate cross-subsidy issues, but minimizes them within the context of current rate designs.

On the other hand, IREC argued that the current TOU-demand rate requirement may serve as a significant impediment to private investment in renewable energy systems. Customers should have the ability to select the retail tariff that is most appropriate for their load profile. While NCSEA generally supported expanding TOU rates to more customer segments because these rates provide incentives for customers to shift their consumption from on-peak to off-peak times, NCSEA argued that the TOU-demand rate devalues on-peak production for net-metered customer-generation because the net-metered customer-generator is compensated at a lower energy rate than the generator would otherwise be under with either a TOU-energy or flat rate schedule. NCSEA asserted that customer-generators under a TOU-demand rate do not receive full market value for their on-peak production and lose out on the full value of their investment. NCSEA stated that customer-generators should have the option of subscribing to a TOU-energy rate so that credits for their on-peak production can better offset their charges for on-peak consumption. NCSEA did not oppose requiring a large net-metered customer-generator to participate in a TOU-demand rate so long as they would have been required to do so absent their generation.

The Public Staff believed that TOU rates are appropriate to properly compensate net metering customers for on-peak and off-peak generation and charge them for usage. However, the Public Staff agreed with NCSEA that the residential TOU-demand rates contain a ratchet mechanism that can be punitive if the demand charge is set early in the applicable period based on unusually high and short-lived demand. The Public Staff believed that the use of TOU-energy rates for residential net metering customers would avoid this potentially punitive ratchet effect while continuing to send the proper pricing signal inherent in TOU rates.

Regarding the issue of whether the 0.2% aggregate cap on net metering should be removed, Dominion stated that a "stepped" approach to increasing the level of participation would be appropriate. Duke opposed increasing the aggregate limit unless the customer-generators' RECs accrue to the utility, arguing that any increase in the aggregate limit runs the risk of exacerbating subsidies that exist and will result in higher costs to customers. Similarly, Progress opposed raising the limit at this time, stating that the limit should be retained until sufficient generation is installed to require a change.

IREC stated that the aggregate limit should be removed. By expanding net metering to systems up to 1 MW and removing the cap on cumulative capacity of net-metered systems, the Commission can facilitate enough customer investment in net-metered renewable energy to allow the cost of serving a net-metered customer to be determined. IREC noted that Duke requested authorization for a similar approach in connection with its photovoltaic proposal in Docket No. E-7, Sub 856. The Public Staff stated that if cross-subsidization is properly addressed, the 0.2% aggregate limit should not be necessary to limit any potential subsidy to net metering customers. Parties have not indicated that raising the cap would affect the integrity of the utilities' systems. The Public Staff recommended that the cap be raised and the onus be placed on the utilities to notify the Commission if the integrity of the utilities' systems is threatened. Wal-Mart stated that the Commission should increase the aggregate limit on net metering to at least 2%, and stated that retaining the arbitrary limit could restrain future development of renewable generation.

As to the issue of whether other kinds of renewable generation should be eligible for net metering, only Duke expressed opposition, stating that the type of electric generating facility eligible for net metering should not be expanded beyond solar PV, wind-powered, micro-hydro, or biomass-fueled electric generating facilities.

Duke stated that it is willing to expand its Small Customer Generator Rider (Rider SCG) rate schedule to larger customer generators, up to 1 MW, provided that the rider continues to include provisions for standby charges and power factor correction for generators larger than 20 kW. (The rider is currently available for residential customers with generator output/peak load of 20 kW or less and nonresidential customers with generator output/peak load of 100 kW or less.) Duke stated that this rate schedule is designed appropriately because it pays the customer-generator for energy at an avoided cost rate and includes provisions for standby charges, metering charges and power factor correction. IREC supported Duke's proposal to increase the size of

customer-generators eligible to participate in its Rider SCG, but noted that the rider falls short of an expansion in net metering because it does not provide for the netting of inflows and outflows. NCSEA stated that Duke's Rider SCG does not contain monthly rollover provisions. NCSEA further noted that, for systems greater than 20 kW, Duke's Rider SCG contains standby charges based on the generator's nameplate capacity rating. While Rider SCG is not a true net metering rider, NCSEA supported Duke's suggestion to expand the rider to allow customer-generators up to 1 MW in size to participate.

Lastly, NCSEA argued that current net metering rules are not effective, as indicated by lack of participation and the statements of public witnesses at the public hearings. NCSEA requested that the Commission revise the net metering rules so that: 1) customer-generators receive credit for all RECs and energy they produce; 2) customer-generators are paid for excess energy at the time of the annual true-up based on the utility's avoided cost rate; 3) customer-generators can select the underlying rate schedule that is best for them; 4) the aggregate system limit for net-metered customer-generators is expanded to 2% of the utility's annual peak load; 5) standby charges are waived for customers that participate via a TOU-demand rate; and 6) customer-generators with systems up to 1 MW can participate provided the generator size does not exceed the customer-generator's load. NCSEA stated that, while customer-generators might be eligible to participate in NC GreenPower, that organization is approaching the point of being over-subscribed in relation to its funding and, as a result, has decreased its REC offering for small solar customer-generators from 18 cents/kWh to 15 cents/kWh. There is no guarantee that NC GreenPower will be able to accommodate all customer-generators at or below 10 kW or offer a reasonable price for RECs. NCSEA stated that net metering is needed to promote private investment in DG. NCSEA is concerned that non-residential net-metered customer-generators would be subject to standby charges under Dominion's Schedules 5P and 6P. NCSEA stated that these are TOU-demand schedules that appear to meet the requirements of North Carolina's net metering rules. However, NCSEA stated that these schedules inappropriately include standby charges for net-metered customer-generators.

DISCUSSION AND CONCLUSIONS

After careful consideration of the evidence and arguments presented in this proceeding, the Commission concludes that the current net metering rule should be revised in order to support recently adopted State policy and further promote the development of renewable energy in North Carolina. The Commission is not persuaded that the fact that there are relatively few net metering participants at this time evinces fatal flaws with the existing policy; rather, it demonstrates the wealth of potentially economically superior alternatives for customer-generators. Nevertheless, the Commission finds that several aspects of the current net metering rule should be clarified and simplified to conform to the recently amended generator interconnection procedures and to enhance the value of net metering as a viable alternative for customers that desire to install renewable generation to offset their own electric consumption and demand.

First, when the current net metering rule was adopted in 2005, the Commission imposed a number of restrictions – such as limits on the size of individual facilities eligible to net meter and the aggregate amount of net-metered capacity – designed to limit any potential adverse impacts associated with the new policy. In response to the mandate in Senate Bill 3, the Commission sought evidence with which to quantify the potential effects of allowing larger generators to net meter. As noted by several parties, the data submitted by the utilities provide an incomplete picture of the costs and benefits afforded by additional, and larger, net-metered renewable generation. The utilities' testimony and cost data, while asserting that the current net metering policy is rife with cross-subsidies that benefit customer-generators, focused on lost revenues rather than actual costs and ignored many potential benefits. The Commission agrees with those parties that assert that renewable customer-owned generation almost certainly provides some additional benefits and that the utilities should have acknowledged those benefits in their analyses. Even so, the presence of cross-subsidies alone is not dispositive, and the evidence presented in this proceeding and the clearly enunciated State policy favoring development of additional renewable generation support expanding net metering eligibility to renewable generation with capacity up to 1 MW.[3] While the Public Staff's proposal to pursue additional cost studies has merit, the Commission is concerned that further study will unduly delay the State's efforts to meet more of its electricity needs via renewable resources.

Another rationale underlying the size limits originally placed on individual net-metered facilities was a desire for conformity with the then-effective generator interconnection standard. On June 9, 2008, in Docket No. E-100, Sub 101, the Commission approved a revised generator interconnection standard that provides a process for reviewing applications for interconnection of generators of any size. Thus, the revised interconnection standard is sufficient to accommodate requests for interconnecting a net-metered generator up to 1 MW, and the interconnection studies required under the generator interconnection standard ensure that a customer-generator fund any required electric utility system upgrades. Lastly, continuing the policy of resetting the credit balance to zero at the beginning of the summer billing season and granting any excess energy to the utility at no charge will effectively limit the size of individual net-metered generating facilities.[4] Therefore, given the failure to adequately quantify the actual costs and benefits of net metering and the protections provided by the generation interconnection process, the Commission concludes that it is in the public interest to allow larger customer-generators up to and including 1 MW in

[3] In fact, cross-subsidies exist throughout utility tariffs in support of various State policies. Economic development rates, such as that recently approved for Progress in Docket No. E-2, Sub 681, are but one example in which the Commission has determined that certain policy benefits outweigh the cost of cross-subsidies.

[4] In its October 20, 2005 Order Adopting Net Metering, the Commission stated, "The requirement that excess seasonal generation (and associated RECs) be granted to the utility will appropriately limit the size of individual facilities, yet allow a customer-generator to utilize the full output of its renewable energy facility."

size to net meter and that it is not necessary to continue to impose any aggregate limit on net metering at this time.

In increasing the size limit on eligible customer-owned generation to 1 MW, the Commission concludes that the existing policy with regard to standby charges should be retained. Utilities are currently precluded from charging customer-generators any standby charges or any additional metering charges other than those that are charged to non-generating customers under the applicable rate schedule. The utilities testified that standby charges should apply to larger generators if they are allowed to participate in net metering. The Commission, therefore, concludes that, under the revised net metering rule, utilities should continue to be prohibited from imposing standby charges for customer-generators with capacity of up to 20 kW for residential customers and 100 kW for non-residential customers, i.e., those customer-generators that are allowed to net meter under the existing policy. However, utilities should be allowed to impose standby charges on larger customer-generators consistent with approved standby rates applicable to other customer-owned generation. This policy does not disadvantage net-metered customer-generators, but treats all customer-owned generation larger than 20 kW for residential customers and 100 kW for non-residential customers consistently without regard to whether the customer-generator is participating in net metering. Standby charges for smaller net-metered customer-generators would continue to be waived. As noted by NCSEA, Dominion should be required to file revised Schedules 5P and 6P to comply with this prohibition against standby charges for net-metered customer-generators with capacity of up to 20 kW for residential customers and 100 kW for non-residential customers.

Second, in its October 20, 2005 Order Adopting Net Metering, the Commission stated that it "intends to continue to review the implementation and use of net metering," including the requirement that net-metered customer-generators take service pursuant to a TOU-demand rate schedule. In that Order, the Commission stated that the TOU-demand rate schedule requirement addressed concerns about the potential mismatch of off-peak generation and on-peak consumption and more appropriately compensated the utility for any standby capacity than would a TOU-energy rate schedule. On reconsideration, the Commission reiterated that the TOU-demand requirement appropriately allocated the costs and benefits of net metering among net metering customers, utilities, and their remaining ratepayers. NCSEA and others, however, continue to urge the Commission to eliminate the TOU-demand rate schedule requirement for net metering customer-generators. A number of public witnesses testified that they were willing to invest in renewable generation if allowed to net meter, but that the TOU-demand rate schedule requirement was one reason that had caused them not to do so. The Public Staff argued that the residential TOU-demand rate can be punitive if the demand charge is set early in the billing period based on unusually high and short-lived demand. Although customers can realize savings under TOU rates, the evidence demonstrates that the requirement that customer-generators switch to a TOU-demand rate is a deterrent and has actually inhibited the installation of renewable generation. Absent meaningful data regarding the potential magnitude and direction of cross-subsidies, the Commission concludes that utilities should offer customer-

generators the option of net metering under any rate schedule available to customers in the same rate class in order to further encourage the development of renewable generation.

The Commission further finds that the current requirement that RECs associated with the energy annually granted to the utility should also accrue to the utility creates uncertainty, effectively renders all RECs earned by the customer-generator unmarketable, and, therefore, should be revised. Under the current approach, there is no way to estimate how the RECs associated with the customer's generation will ultimately be divided at the end of the year between the customer-generator and the utility. Without the ability to determine with certainty the number of RECs for which ownership will be retained, a customer-generator cannot enter into a contract to sell the RECs earned each month. Therefore, in order to provide the necessary certainty, for net-metered customer-generators that elect to take service pursuant to a TOU-demand tariff (as was required, but which will now be optional), all of the RECs associated with the customer's generation shall be the property of the customer-generator. The Commission recognizes, however, that allowing a customer-generator to net meter while taking retail electric service pursuant to a rate schedule other than a TOU-demand rate schedule alters the balance among net metering customers, utilities, and their remaining customers previously found by the Commission to be fair and appropriate. Therefore, in exchange for allowing a net metering customer-generator to elect to take service under a retail rate schedule other than a TOU-demand rate schedule, all RECs associated with the customer's generation should be assigned to the utility at no cost as part of the net metering arrangement.

NCSEA argued that assigning RECs to the utility as part of the net metering arrangement constitutes an unconstitutional taking of private property. The Fifth Amendment of the United States Constitution, made applicable to the states by the Fourteenth Amendment, prohibits the taking of private property for public use without just compensation. In its brief, NCSEA argued that, under current net metering rules, customer-generators can participate in net metering only if they are willing to forfeit property, energy and RECs, to the utilities. The forfeiture is mandatory and coerced. The customer-generators' only choice is not to participate in the Commission-sponsored program, which in turn deprives them financially and potentially to the point of making any venture uneconomical. In essence, argued NCSEA, there is no real choice. Once the customer-generators elect to participate in the net metering program, they are required by the Commission's rule to forfeit property to the utilities.

The Commission rejects NCSEA's argument and concludes that the constitutional takings analysis simply does not apply in this instance. Utility tariffs commonly include terms and conditions that impose certain obligations on customers in return for certain benefits. NCSEA argued that, once customer-generators elect to participate in net metering, they have no choice about the terms of participation. Customer-generators do have a choice, however, in whether or not to participate in net metering – no one coerces their participation. In fact, customer-generators have the choice of net metering, electing another arrangement for the sale of excess generation,

or ignoring excess generation, if any, entirely. Under the revised net metering rule adopted herein, customer-generators even have a choice of participating in net metering and taking retail electric service under a TOU-demand or other rate schedule. There is no coercion, as premised by NCSEA. Nevertheless, just as customer-generators seek to net meter without incurring certain additional charges, they must in return be willing to assign to the utility the right to their RECs if they elect to net meter under a non-time-differentiated rate schedule or a TOU rate schedule in which they incur no separate demand charge. Net-metered customer-generators may continue to choose to take retail service pursuant to a TOU-demand rate schedule and retain ownership of all RECs associated with their renewable generation. Alternatively, customer-generators could choose to participate in net metering via another tariff, such as one that values all energy consumed equally. In such cases, the benefits to the customer-generator are significant enough that the RECs associated with the facility's total energy production should accrue to the utility.

The Commission disagrees with Progress, however, that the costs of net metering, even where the customer-generator's RECs are assigned to the utility, should be recovered through the REPS incremental cost rider. Costs associated with bundled energy and RECs are not necessarily recovered through the REPS rider, as evidenced by the recovery of costs associated with the Swine Farm Methane Capture Pilot Program. See Order Adopting Final Rules, Docket No. E-100, Sub 113, at p. 10 (Feb. 29, 2008). Moreover, because the costs and benefits of net metering are not well defined and because it is not clear at this time that net metering imposes substantial costs on the utility, the Commission will deny Progress's request to recover all costs of net metering through the REPS cost recovery rider.

Third, customer-generators that generate electricity using micro-hydro, wind, solar PV or biomass are currently eligible to net meter. Senate Bill 3 adopted the following definition of "renewable energy resource," G.S. 62-133.8(a)(8):

> "Renewable energy resource" means a solar electric, solar thermal, wind, hydropower, geothermal, or ocean current or wave energy resource; a biomass resource, including agricultural waste, animal waste, wood waste, spent pulping liquors, combustible residues, combustible liquids, combustible gases, energy crops, or landfill methane; waste heat derived from a renewable energy resource and used to produce electricity or useful, measurable thermal energy at a retail electric customer's facility; or hydrogen derived from a renewable energy resource.

Senate Bill 3 further defines "renewable energy facility" to include, G.S. 62-133.8(a)(7):

> a facility, other than a hydroelectric power facility with a generation capacity of more than 10 megawatts, that ... [g]enerates electric power by the use of a renewable energy resource.

Because Senate Bill 3 was enacted since net metering was initially adopted in 2005, the Commission finds good cause to adopt a consistent definition for renewable energy resource and renewable energy facility with regard to eligibility to net meter to support the policies set forth in that legislation. Therefore, the Commission concludes that the eligibility provision of the net metering rule should be revised to include any renewable energy facility with a generating capacity up to 1 MW that generates electric power using a renewable energy resource as defined above and in Senate Bill 3. Note that this excludes renewable energy facilities under Senate Bill 3 that generate only thermal energy. In order to be eligible to net meter, the renewable energy facility must generate electricity that flows through the utility meter.

Lastly, the Commission continues to believe, as stated in its October 20, 2005 Order, that net metering is "designed for owners of small-scale renewable generation installed for the customer's own use, not for sale to the utility." Thus, net metering is but one alternative billing arrangement for a customer that intends to own and operate renewable electric generation or to take advantage of renewable energy resources to offset energy purchases from the utility. In approving revisions to the net metering policy, the Commission continues to adopt a reasonable balance between utilities, net metering customers, and the utilities' remaining customers while recognizing the significance of changes in State policy.

With regard to one such alternative, the Commission acknowledges Duke's offer to extend the availability of its Rider SCG to larger customer-generators. The Commission finds that Duke's proposal furthers the State policy of promoting increased development of renewable generation and is in the public interest. The Commission, therefore, concludes that Duke should file a revised Rider SCG consistent with its offer that makes the rider available to customer-generators with capacity of up to 1 MW.

In summary, the Commission concludes that Duke, Dominion and Progress should file revised riders or tariffs that allow net metering for any customer that owns and operates a renewable energy facility that generates electricity with a capacity of up to 1 MW. The customer shall be required to interconnect pursuant to the approved generator interconnection standard, which includes provisions regarding the study and implementation of any improvements to the utility's electric system required to accommodate the customer's generation, and to operate in parallel with the utility's electric distribution system. The customer may elect to take retail electric service pursuant to any rate schedule available to other customers in the same rate class and may not be assessed any standby, capacity, metering or other fees other than those approved for all customers on the same rate schedule. Standby charges shall be waived, however, for any net-metered residential customer with electric generating capacity up to 20 kW and any net-metered non-residential customer up to 100 kW. Credit for excess electricity generated during a monthly billing period shall be carried forward to the following monthly billing period, but shall be granted to the utility at no charge and the credit balance reset to zero at the beginning of each summer billing season. If the customer elects to take retail electric service pursuant to any TOU rate schedule, excess on-peak generation shall first be applied to offset on-peak

consumption and excess off-peak generation to offset off-peak consumption; any remaining on-peak generation shall then be applied against any remaining off-peak consumption. If the customer chooses to take retail electric service pursuant to a TOU-demand rate schedule, it shall retain ownership of all RECs associated with its electric generation. If the customer chooses to take retail electric service pursuant to any other rate schedule, RECs associated with all electric generation by the facility shall be assigned to the utility as part of the net metering arrangement.

IT IS, THEREFORE, ORDERED as follows:

1. That Progress, Duke and Dominion shall file in this docket no later than May 1, 2009, revised tariffs or riders to allow net metering as ordered herein to be effective on or before June 1, 2009;

2. That Progress's request to recover costs associated with net metering through the REPS cost recovery rider is denied;

3. That Dominion shall file no later than May 1, 2009, revised Schedules 5P and 6P to comply with the prohibition against standby charges for net-metered customer-generators up to 20 kW for residential customers and 100 kW for non-residential customers; and

4. That Duke shall file a revised Rider SCG no later than June 1, 2009, that makes the rider available to customer-generators with capacity of up to 1 MW.

ISSUED BY ORDER OF THE COMMISSION.

This the 31st day of March, 2009.

NORTH CAROLINA UTILITIES COMMISSION

Patricia Swenson

Patricia Swenson, Deputy Clerk

Kc032409.01

Commissioners Robert V. Owens, Jr., and Lorinzo L. Joyner concur in part and dissent in part.

DOCKET NO. E-100, SUB 83

COMMISSIONER ROBERT V. OWENS, JR., CONCURRING IN PART, DISSENTING IN PART: I concur with this Order with the exception of the majority's decision not to require the utilities to pursue a pilot study as proposed by the Public Staff. The Commission should be mindful of the potential cost increases all customers will experience due to increased reliance on renewable resources. The study proposed by the Public Staff would have assisted the Commission in monitoring those cost impacts. Therefore, I dissent with the majority in its decision to forego the study.

\s\ Robert V. Owens, Jr.
Commissioner Robert V. Owens, Jr.

DOCKET NO. E-100, SUB 83

COMMISSIONER LORINZO L. JOYNER, CONCURRING IN PART, DISSENTING IN PART: I support the Commission's Order amending the net metering policy to allow larger generators to net meter. I believe that it is consistent with North Carolina energy policy as set forth in Senate Bill 3. I do not support the Majority's decision to forego an opportunity to obtain meaningful data on the issue of cross-subsidization because, in my view, it frustrates our ability to adequately assess the potential effects of allowing larger generators to net meter.

There is no serious dispute that allowing an expansion of net metering creates the potential for subsidies for those customer-generators. In its June 9, 2008 Order Establishing Procedural Schedule, the Commission acknowledged that cross-subsidization from non-participating customers to customer-generators was relevant in deciding whether expanding net metering to larger generators was in the public interest. Correctly recognizing that the existence of cross-subsidies, standing alone, was not determinative, the Commission directed the parties to address the nature and extent of that subsidization. Specifically, the parties were requested to address, *inter alia*, "quantification of the potential cross-subsidization under several scenarios."

Admittedly, the utilities' response to this particular issue was unhelpful for the reasons stated by the Majority. However, in the interest of haste, the Commission decided not to direct further study of the issue. The result is, in my view, less than satisfactory--it advances the meritorious public policy of strengthening the State's ability to meet more of its energy needs through renewables; however, it fails to require cost studies which would help answer the question: "At what cost?" Since increased reliance on renewable resources has the very real potential to increase costs to consumers, I do not think this failure was in the mid- to long-term interests of ratepayers.

The Majority correctly notes that cross-subsidies exist throughout utility tariffs in support of various State policies, and cites PEC's economic development (ED) rate as an example of a case where the Commission determined that certain policy benefits outweighed the cost of cross-subsidies. See Docket No. E-2, Sub 681 (1995). I believe the Commission reached the right result in that case. Its determination was informed by and based upon data the Company provided, including a rate impact analysis. The Company was required to demonstrate that ratepayer benefits resulting from the rider outweighed the short- and long-term resource acquisition costs caused by the ED rate and to identify its effect on the rates of other customers. It was this evidence that allowed the Commission to conclude that the policy benefits outweighed any cost of subsidies.

Former Commissioner Sam J. Ervin, IV, dissenting on procedural grounds in Docket No. E-2, Sub 681, described what should be the objective of Commission processes. "The procedures utilized by the Commission are, at bottom, intended to ensure that we have identified all questions which need to be resolved on the merits and that we possess sufficient information to decide the contested issues properly." I believe that the process employed in this case fell short of this objective. After identifying cross-subsidization as an important issue, the Commission failed to adopt a process that would have provided useful information to decide the issue on the merits. In a rising cost environment, caused in part by implementing Senate Bill 3, I do not believe that this failure was in the best interests of North Carolina ratepayers. I would have required the additional cost studies requested by the Public Staff.

\s\ Lorinzo L. Joyner
Commissioner Lorinzo L. Joyner