

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 Proposed Net Metering     ) ORDER ON RECONSIDERATION  
Rule   ) MODIFYING NET METERING  
   ) TARIFFS AND RIDERS

BY THE COMMISSION: On October 20, 2005, the Commission issued an Order in the above-captioned docket initially adopting net metering in North Carolina. In compliance with the Commission's Order, Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc. (Progress); Duke Power, a division of Duke Energy Corporation [now, Duke Energy Carolinas] (Duke); and Virginia Electric and Power Company d/b/a Dominion North Carolina Power (Dominion) filed tariffs or riders to implement net metering to be effective on January 1, 2006.

On December 12, 2005, the North Carolina Sustainable Energy Association (NCSEA) filed a Motion for Reconsideration of the Commission's October 20, 2005, Order. In its Motion, the NCSEA argues that the net metering rule approved in North Carolina is one of the more restrictive and difficult to use in the country. The NCSEA primarily requests that the Commission (1) eliminate the requirement of time-of-use demand rates; (2) eliminate the prohibition on the use of battery-enhanced systems; (3) declare that generators, rather than utilities, own any renewable energy credits (RECs); and (4) add micro-hydro as an eligible technology. The NCSEA further raises concerns about certain provisions of the net metering riders filed by Progress and Duke and asked that other issues be addressed in the small generator interconnection docket, Docket No. E-100, Sub 101.

On December 16, 2005, Progress filed a Response in Opposition to the NCSEA's Motion. In its Response, Progress requests that the Commission deny the NCSEA's Motion and approve the proposed net metering riders or allow an additional opportunity for the parties to more fully respond to the Motion.

On December 27, 2005, the Commission issued an Order Approving Tariffs, Riders and Regulations Implementing Net Metering and Consolidating Reporting Requirements. In that Order, the Commission approved the utilities' tariffs, riders, and service regulations implementing net metering without prejudice to the resolution of the NCSEA's Motion.

On January 3, 2006, the Commission issued an Order Establishing Deadlines for Filing Responses and Replies allowing all parties an opportunity to file responses and subsequent replies to the NCSEA's Motion.

On February 3, 2006, the Public Staff filed a response; Progress, Duke, and Dominion also filed a joint response. No party filed a reply.

### STANDARD OF REVIEW

If an appeal of a Commission final order is not made within the statutory 30-day period provided for in G.S. 62-90, “the right of appeal is waived” and a court has no jurisdiction to review the order. Bald Head Island Utils. v. Village of Bald Head Island, 165 N.C. App. 701, 702; 599 S.E.2d 98, 99 (2004). Having waived its right to appeal the net metering Order, the NCSEA’s Motion invokes the Commission’s authority under G.S. 62-80, which provides, in pertinent part, that the

Commission may at any time upon notice to the public utility and to the other parties of record affected, and after opportunity to be heard as provided in the case of complaints, rescind, alter or amend any order or decision made by it.

While it is true that the Commission can choose to rescind, alter or amend a final decision of its own accord pursuant to G.S. 62-80, the Commission “is not required to rehear an issue brought by a party after the order has been final for thirty days.” State ex rel. Utilities Commission v. Carolina Water Service, Inc., 335 N.C. 493, 498; 439 S.E.2d 127, 129-130 (1994). Further, the Commission may not, in the exercise of its discretion under G.S. 62-80, arbitrarily or capriciously amend, modify or rescind a final order. State ex rel. Utilities Commission v. N.C. Gas Service, 128 N.C. App. 288, 494 S.E.2d 621, 625 (1998). There must be some change in circumstances, misapprehension or disregard of fact requiring a modification in the public interest. Id.; State ex rel. Utilities Commission v. Edmisten, 291 N.C. 575, 584; 232 S.E.2d 177, 182 (1977).

### POSITIONS OF THE PARTIES

#### Requirement of Time-of-Use Demand Rates

The NCSEA argues in its Motion that the requirement that net metering customers be on a utility time-of-use demand rate schedule is unique among states that have adopted net metering and “greatly discourages the use of net metering.” According to the NCSEA, “net metering is supposed to be simple, one meter spinning in both directions, and allow a renewable energy generator to temporarily store excess generation on the grid for later use.” Instead, the net metering Order unnecessarily complicates the decision to own renewable generation by mandating time-of-use demand rates. The NCSEA estimated that the installation of a net metering renewable generator on an all-electric residence would result in higher bills than would continued use of conventional residential rates and without customer-owned generation. If the Commission wants to encourage the use of renewable energy generation in North Carolina, it should follow the example of all 39 other states which have adopted net metering and eliminate the time-of-use demand rate schedule requirement.

The utilities respond that a time-of-use demand rate schedule coupled with a net metering tariff, in addition to offering a more fair and accurate pricing mechanism, ensures any excess generation produced by a customer is credited at an appropriate rate that more closely approximates the cost avoided by the utility at the time it is delivered. This combination recognizes that not all kilowatt-hours are alike and that different kilowatt-hours have a substantially different value depending upon when they are produced and consumed. The utilities further argue that a customer with the sophistication to deal with a myriad of federal and state grants, tax credits, supplier buy-downs, consumer rebates, and other renewable programs is sophisticated enough to determine whether or not he or she would benefit from net metering with a time-of-use demand rate schedule. Moreover, they state that the NCSEA's "case study" supporting its claim that customer bills under a net metering arrangement in conjunction with time-of-use rates will be greater than service under standard rates contains errors and is simply wrong. Rather, customers on the utilities' time-of-use rates have the opportunity to save on their electric bills. Should these customers elect to install generation and participate in the net metering program, the net bill could be reduced even more.

### Prohibition on Batteries

In its Motion, the NCSEA argues that the exclusion of renewable energy systems with battery backup from net metering is based on a misunderstanding of how battery storage systems operate. The NCSEA alleges that this misunderstanding has led the Commission to erroneously conclude that allowing the use of batteries enables a system owner to potentially "game" net metering and receive an unfair economic advantage. Using batteries in this way to receive a higher value implies it is both technically and financially feasible for a system owner to charge batteries off-peak and then discharge batteries on-peak. While it is possible to charge batteries off-peak and then to discharge them on-peak, states the NCSEA, no one would use such a strategy because: (a) battery capacity is very expensive; (b) batteries require periodic maintenance when discharged frequently; (c) battery banks, because of their cost, usually have small capacities; and (d) battery life is greatly shortened by discharges over 30%.

The utilities respond that the NCSEA's assertions do not remove the potential for gaming under net metering, but only reduce the quantum of potential gaming. In other words, the amount of potential gaming would be capped at the point that avoids damage to the battery system or at which the cost of additional operation and maintenance of the system exceeds the advantage to be gained by gaming. The utilities argue that the NCSEA does not offer any justification for the Commission to allow the potential for even a reduced level of gaming. Moreover, the NCSEA's position on battery storage is also entirely inconsistent with its prior statements in this proceeding. For example, in its August 5, 2005, brief to the Commission, the NCSEA stated:

Net metering allows homeowners who are not home when their systems are producing electricity to still receive the full value of that electricity without having to install a battery system. Essentially, the power grid

eliminates the need for a customer-owned battery, which saves the customer the added expense of purchasing and maintaining a battery system.

Thus, the NCSEA's current arguments are inconsistent with its long-held position that a primary benefit of net metering is to eliminate the need for batteries, thereby greatly reducing the initial installation cost. With net metering, the utility effectively becomes the "battery" to store excess generation for consumption by the customer at a later date.

#### Ownership of Renewable Energy Credits for Excess Energy

In its Motion, the NCSEA requests that the Commission declare that all renewable energy credits (RECs) created by a net metering customer belong to the customer. The NCSEA notes that in the latest avoided cost docket, Docket No. E-100, Sub 100, the Commission clarified the ownership of RECs by stating that they belong to the generator. The NCSEA finds it confusing, counterproductive, and expensive to now cloud the ownership of RECs in North Carolina by granting to the utility the potentially very small amount of RECs associated with excess generation at the end of the true-up period.

The utilities respond that the Commission considered and rejected in the net metering Order the NCSEA's argument that RECs created by a net metering customer should remain the property of the customer. The NCSEA's Motion does nothing more than recast its previously rejected argument and should be denied. Implementing the net metering Order requires the utilities' remaining customers generally to absorb significant costs caused solely to meet the special needs of net metering participants. Thus, retention of RECs by the utilities is appropriate to at least partially compensate other ratepayers for these additional costs that they are paying to foster customer-owned generation.

#### Eligibility of Micro-Hydro Generation Technology

In its Motion, the NCSEA states that it has received several complaints from current and potential owners of "micro-hydro"<sup>1</sup> generation technologies because they were excluded from the list of technologies eligible to participate in net metering. They represent a viable customer-based renewable energy generation option in North Carolina, particularly in the western areas of the state. The NCSEA requests that net metering eligibility be extended to micro-hydro systems that otherwise meet the requirements for participation in a net metering program.

In their response, the utilities support the Commission's decision to initially limit resources to solar photovoltaic (PV), wind-powered, and biomass-fueled generating systems.

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<sup>1</sup> These "micro-hydro" facilities are generally run-of-river generators 100 kW or less.

The Public Staff responds that it does not object to micro-hydro renewable facilities being allowed to participate in net metering.

#### Miscellaneous Net Metering Rider Provisions

Lastly, the NCSEA argues that Duke and Progress have included in their net metering riders substantive interconnection provisions that have the result of modifying the small generator interconnection standards adopted in Docket No. E-100, Sub 101. The NCSEA states that the provisions in Progress's tariff (page 2, special conditions sections 3 and 4) and Duke's tariff (page 2, paragraph titled "Safety, Interconnection and Inspection Requirements") have been addressed in the interconnection standards and do not belong in the net metering rider. The NCSEA requests that they be removed from the net metering riders. The NCSEA further argues that the "Availability" section of Duke's rider reserves the right to require a net metering contract greater than one year. The NCSEA requests that all net metering initial contract periods be for not more than one year except by mutual agreement. The utilities' response does not address these issues. The NCSEA acknowledges that the remaining tariff issues raised in its Motion, such as the use of telephone lines and the definition of "system capacity," should be addressed in the interconnection standards docket.

### DISCUSSION AND CONCLUSIONS

#### Requirement of Time-of-Use Demand Rates

The requirement that customers be on, or switch to, a time-of-use demand rate schedule to be eligible for net metering was carefully considered and explained in the Commission's net metering Order. The Commission agrees with the utilities that the NCSEA has offered no new arguments in its Motion which would compel a result different from that reached initially. The requirement of time-of-use demand rates addresses parties' concerns about potential discrimination and cross-subsidies between those customers who participate in net metering and those who do not. The Commission remains convinced that the requirement of time-of-use demand rates appropriately allocates the costs and benefits of net metering among net metering customers, utilities, and their remaining ratepayers. The Commission is not persuaded that time-of-use demand rates are too complicated or that their required use should be abandoned simply because it has not been adopted in other states.

In its net metering Order, the Commission stated:

[A]ll electricity is not valued equally – on-peak generation is valued more highly than off-peak generation. Therefore, excess off-peak generation should be available only during other off-peak hours, not during on-peak hours.

The Commission clarifies herein that the above concern about the relative value of on-peak and off-peak energy should properly be limited only to customers offsetting on-peak consumption with off-peak generation. The utilities' current net metering tariffs and riders only allow excess energy produced in the on-peak period to be used to

reduce on-peak energy consumption and excess energy produced in the off-peak period to be used to reduce off-peak consumption. To allow customers to take full advantage of the value of net metering while remaining mindful of the relative value of on-peak and off-peak energy, customer-generators should also be allowed to utilize the more valuable on-peak generation to offset consumption during the off-peak period. Although this may slightly increase the administrative burden on utilities in billing net metering customers, the Commission concludes that generators, in particular solar PV, are unfairly penalized under the current riders. Therefore, the utilities shall amend their net metering tariffs and riders to first apply excess on-peak generation against on-peak consumption and excess off-peak generation against off-peak consumption and to then apply any remaining excess on-peak generation against any remaining off-peak consumption during a monthly billing period.

Similarly, the Commission concluded in its net metering Order that a customer's kilowatt-hour credit for excess on-peak or off-peak generation "shall be reset to zero at the beginning of each summer and winter billing season." Because the utilities in North Carolina are summer-peaking utilities, energy produced and consumed during the summer months is relatively more valuable than energy produced and consumed during the non-summer months. To allow customers to take full advantage of the value of net metering while remaining mindful of the relative seasonal value of energy, the Commission shall require utilities to modify their net metering tariffs and riders to require net metering customers to grant excess generation to the utility only annually at the beginning of each summer season rather than twice each year. Thus, credits for the relatively more valuable excess summer generation may be carried forward to offset consumption in the non-summer months.

#### Prohibition on Batteries

In its net metering Order, after recognizing that on-peak generation is valued more highly than off-peak generation, the Commission stated:

Limiting eligibility to renewable energy facilities that do not have battery storage ... address[es] these concerns raised about the potential mismatch of off-peak generation and on-peak consumption.

Having long argued that the adoption of net metering would free renewable generators from the requirement of having to install an expensive bank of batteries for energy storage, the NCSEA now argues that net metering customers should be allowed to install batteries if they choose to do so. The prohibition on batteries follows from the requirement of time-of-use demand rate schedules to prevent customers from "gaming" by offsetting more valuable on-peak consumption with less valuable off-peak generation. The NCSEA concedes that batteries may be used to accomplish such gaming, but argues that it is not economically efficient to do so for a number of reasons. The Commission agrees with the utilities, however, that such gaming should be disallowed, not merely reduced. Thus, regardless of the magnitude of the gaming issue, the prohibition on batteries was adopted to eliminate this potential for abuse.

A number of individual commenters, however, urge the Commission to eliminate the prohibition on batteries for increased reliability in the case of power outages. The Commission finds this more compelling reliability argument, in conjunction with the NCSEA's uncontested assertions regarding the economic disincentive to repeatedly charge and discharge batteries, to be persuasive. The Commission is sympathetic towards those who wish to install their own generation to protect against power outages due to storms or other causes. During such events, the utility grid is not available to act as a battery for storage and later consumption of excess generation.

Therefore, in balancing these competing interests, the Commission shall require the utilities to modify their net metering tariffs and riders to eliminate the prohibition on batteries. However, the Commission will continue to prohibit net metering customers from using batteries for gaming, or abusing the time-of-use restrictions, by offsetting more valuable on-peak consumption with less valuable off-peak generation. Utilities may raise specific concerns with the Commission if they believe that such gaming or abuse becomes a problem in general or in specific instances. Any customer found to be engaged in such practice shall be banned from net metering.

#### Ownership of Renewable Energy Credits for Excess Energy

In its September 29, 2005, Order Establishing Standard Rates and Contract Terms for Qualifying Facilities issued in Docket No. E-100, Sub 100, the Commission concluded that avoided cost rates are not designed to compensate generators for the value of RECs. Thus, unless explicitly addressed in the contract, a generator retains ownership of all RECs associated with its generation of energy using renewable resources.

The Commission disagrees with the NCSEA that its net metering Order clouds the issue of REC ownership. While it does not speak to the ownership of RECs created by the generation of renewable energy to serve the customer's own needs, the net metering Order clearly grants the excess energy and associated REC's to the utility to partially offset the costs otherwise borne by the utility and its remaining ratepayers to accommodate net metering. In its Order, the Commission stated:

The Commission notes that all parties concede that allowing net metering will result in the potential for subsidies for those customers. ... The Commission's approval of net metering in this docket reasonably balances numerous factors while attempting to limit the potential for abuse.

Despite the potential for cross-subsidies, customers are allowed to net meter and utilities are not allowed to charge participating customers any additional standby, metering, or other charges. In return, net metering customers are required to annually grant any unused credits for excess generation and the associated RECs to the utilities for the benefit of their remaining customers. While 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.

### Eligibility of Micro-Hydro Generation Technology

The Commission notes that micro-hydro generation was included in the net metering rule originally proposed by the NCSEA. Although run-of-river hydro facilities typically sell all of their electric output to the utility, the Commission agrees with the NCSEA that micro-hydro should be eligible, along with the other stated renewable energy technologies, to participate in net metering. The Commission, therefore, will require the utilities to amend their net metering tariffs and riders to allow micro-hydro generation facilities to participate in net metering.

### Miscellaneous Net Metering Rider Provisions

The Commission agrees with the NCSEA that Progress and Duke should delete any provisions in their net metering tariffs or riders that are inconsistent with the small generator interconnection standards. For example, the last paragraph of the section of Duke's net metering rider entitled "Safety, Interconnection and Inspection Requirements" appears to allow Duke to require a customer to install, at the customer's expense, additional facilities "despite compliance with the Interconnection Standard." Section 4.4 of the interconnection standards requires the customer to install, at the customer's expense, any facilities necessary "to address any power quality, reliability or safety issues caused by the Generator operation or connection to the Area EPS." Therefore, a customer who has complied with the interconnection standards should not be required to install any additional "interconnection facilities."

Other provisions referenced by the NCSEA, however, appear to be favorable to net metering customers, such as Progress's special condition 3 which appears to waive the minimum Monthly Facilities Charge for net metering customers. Such provisions have been approved by the Commission and should be retained in the net metering riders.

Lastly, the Commission agrees with the NCSEA that net metering contracts should not be required by the utilities to be longer than one year absent mutual assent. This coincides, for example, with the contract periods for the utilities' time-of-use demand rate schedules and is appropriately applied to the net metering tariffs and riders.

IT IS, THEREFORE, ORDERED that Progress, Duke, and Dominion shall file in this docket not later than July 31, 2006, amended net metering tariffs and riders revised as follows:

(1) to first apply excess on-peak generation against on-peak consumption and excess off-peak generation against off-peak consumption and then to apply any remaining excess on-peak generation against any remaining off-peak consumption during a monthly billing period;

(2) to require net metering customers to grant excess generation to the utility only annually at the beginning of each summer season;



(3) to eliminate the prohibition on batteries;

(4) to allow participation by micro-hydro generating facilities;

(5) to delete any provisions that are inconsistent with the small generator interconnection standards; and

(6) to not require net metering contracts be longer than one year absent mutual assent.

ISSUED BY ORDER OF THE COMMISSION.

This the 6th day of July, 2006.

NORTH CAROLINA UTILITIES COMMISSION

A handwritten signature in cursive script that reads "Patricia Swenson".

Patricia Swenson, Deputy Clerk

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