

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 ) ORDER ADOPTING  
Net Metering Rule ) NET METERING

BY THE COMMISSION: On May 18, 2005, the North Carolina Sustainable Energy Association (NCSEA) filed a letter in the above-captioned docket requesting that the Utilities Commission resume this proceeding which had previously been continued by joint request of the NCSEA and other parties.

On June 2, 2005, the Commission issued an Order granting the NCSEA's request, reopening this proceeding, and establishing a schedule for parties to file briefs on the remaining legal/policy issues.

On August 5, 2005, briefs were filed by the NCSEA, the Public Staff, and the Attorney General. Also on August 5, 2005, a joint brief was filed by Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc. (Progress); Duke Power, a division of Duke Energy Corporation (Duke); and Virginia Electric and Power Company d/b/a Dominion North Carolina Power (Dominion; jointly, Utilities).

POSITIONS OF THE PARTIES

The commenters note that many of the issues raised at the beginning of this proceeding have now been addressed. Specifically, the recent adoption of small generator interconnection standards has resolved a number of technical issues. In addition, decisions by the Federal Energy Regulatory Commission (FERC) have dismissed the argument that net metering is preempted under the Public Utility Regulatory Policies Act of 1978 (PURPA).

The remaining issue, as succinctly stated by the Utilities, is: whether or not certain customers who own small generators behind the billing meter are entitled to a credit above the utility's energy credit. The Utilities argue that allowing a net metering customer to run the meter backwards during times of excess generation effectively compensates that customer at full retail prices for the excess electricity generated. This full retail rate "includes not only generation-related operating and fuel costs, but the fixed costs of poles, wires, generation assets, etc. and even operating costs such as billing and customer service." Allowing net metering, the Utilities argue, provides a subsidy to those customers at the expense of a utility's other customers.

The Public Staff identifies the issue similarly in its comments, stating that the still-outstanding concerns against net metering "include concerns about discrimination and

cross-subsidies because a net metering customer 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.” The Public Staff cites studies, however, that have found numerous benefits from net metering, including: a reduction in peak demand; lessening the consumption of fossil fuels; reducing pollution and avoiding environmental damage; reducing line losses and improving efficiency of the grid; and avoiding upgrades to transmission and distribution facilities. The Public Staff notes that a study conducted in Maryland concluded that the impact on both the utility and its customers is minimal when the net-metered systems are limited to a small percentage of utility peak load. The Public Staff believes that any program should be limited in terms of the types of generation included, the size of individual facilities, and the overall megawatts on a per utility basis. The Public Staff recommends size limits per generator of 10 kW for residential customers and 100 kW for non-residential customers. The Public Staff further recommends a per utility limit of 25 customers, or 0.2% of peak load, whichever is less. Lastly, the Public Staff recommends that any excess generation over summer and winter billing periods be granted to the utility as compensation for standby or other services, thus offsetting the costs being borne by other ratepayers.

The Attorney General in his brief also supports the adoption of “true” net metering. The Attorney General analogizes self-generation to other forms of conservation and argues that the Commission should not discourage such efforts by attaching additional charges to these customers’ bills. The Attorney General further argues that the utility is fully compensated because the energy delivered to the grid by the net metering customer is sold by the utility at the full retail rate to a neighboring customer. The Attorney General acknowledges that some net metering customers may replace energy consumed on-peak with off-peak generation, but also argues that solar photovoltaic (PV) facilities, which generally provide on-peak generation, actually benefit the utility by reducing peak demand. Lastly, the Attorney General cites a number of environmental benefits that would be gained by the generation of additional electricity using renewable resources.

The NCSEA in its comments notes that 39 states and the District of Columbia have all adopted some form of net metering. While acknowledging that any excess generation placed on the utility grid results in a “credit” for the generator, the NCSEA analogizes net metering to adding a cup of water to a bucket for later use – “you may not get the exact water you put in, but you can measure out the same amount of water you put in.” The NCSEA also notes that net metering allows a small generator to utilize all the electricity produced without having to bear the expense of installing and maintaining a battery system. The NCSEA further acknowledges that net metering customers may be thus subsidized by the utility’s other customers, but argues that any such subsidy “would be extremely small.” The NCSEA argues, however, that net metering provides a number of benefits to the utility, including simplified accounting for customer generators, reduction in transmission and distribution line losses, reduction in reactive power losses, reduction in the demand for spinning reserve capacity, increase in reliability, voltage support, and deferral of system upgrades. The NCSEA offered a revised model net metering rule for adoption by the Commission. The NCSEA recommends size limits per generator of 20 kW for residential customers and 100 kW for non-residential customers corresponding to the limits currently approved in the small generator interconnection docket. The NCSEA further

recommends a per utility limit of 1% of peak load and that excess generation credits be rolled over from month-to-month for 12 months, with payment at avoided cost rates at the end of the 12-month period.

## DISCUSSION AND CONCLUSIONS

The Commission previously adopted small generator interconnection standards which allow a utility customer to interconnect and operate a renewable energy facility in parallel with an electric utility. Net metering refers to the 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. "True" net metering allows the customer-generator to receive a billing credit for excess generation delivered to the utility grid. Net metering proponents advocate the use of a single meter allowed to spin forward and backward to automatically credit the customer-generator for this excess generation.

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 and that Duke, Progress, and Dominion, therefore, should be required to allow "true" net metering with a single meter on a limited basis.

Net metering, therefore, shall be made available to a utility customer that owns and operates a solar PV, wind-powered, or biomass-fueled renewable energy facility without battery storage. The renewable energy 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.

The renewable energy facility shall be interconnected and operated in parallel with an electric utility's distribution system. Each utility shall offer to make net metering available to customer-generators on a first-come, first-served basis in conjunction with its approved small generator interconnection standards up to an aggregate limit of 0.2% of the utility's North Carolina jurisdictional retail peak load for the previous year.

A customer-generator that desires to net meter shall be on, or switch to, a time-of-use demand rate schedule. If the electricity supplied by the utility exceeds the electricity delivered to the grid by the customer-generator during a monthly billing period, the customer-generator shall be billed for the net electricity supplied by the utility, including any demand or other charges under the applicable time-of-use demand rate schedule. If the electricity delivered to the grid by the customer-generator exceeds the electricity supplied by the utility during a monthly billing period, the customer-generator shall be billed for the applicable demand and other charges for that billing period and shall be credited for the excess kilowatt-hours generated during that billing period. The utility shall not charge the customer-generator any standby, capacity, metering, or other fees or charges other than those approved for all customers under the applicable time-of-use 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 and winter billing season as defined in the utility's tariff. Similarly, any renewable energy credits (REC), or green tags, associated with this excess generation shall also be granted to the utility when the excess generation credit balance is zeroed out.

The Commission's approval of net metering in this docket reasonably balances numerous factors while attempting to limit the potential for abuse. Net metering is specifically designed for owners of small-scale renewable generation installed for the customer's own use, not for sale to the utility. As such, a net metering customer-generator will not typically apply for a certificate of public convenience and necessity and cannot participate in NC GreenPower. 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.

Contrary to the NCSEA's water analogy, all 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. Limiting eligibility to renewable energy facilities that do not have battery storage and requiring that a customer be on, or switch to, a time-of-use demand rate schedule address these concerns raised about the potential mismatch of off-peak generation and on-peak consumption. In addition, a time-of-use demand rate schedule more appropriately compensates the utility for any standby capacity than does a time-of-use energy rate schedule. Lastly, by limiting the amount of generation per utility and the size of each eligible renewable energy facility, the Commission concludes that no limit is necessary on the number of net metering customers.

The Commission intends to continue to review the implementation and use of net metering. The utilities, therefore, will be required to file with the Commission annual reports indicating the numbers of net metering applicants and customer-generators, the aggregate capacity of net metered generation, the size and types of renewable energy facilities, the amounts of on-peak and off-peak generation credited and ultimately granted to the utility, and the reasons for any rejections or removals of customer-generators from net metering.

IT IS, THEREFORE, ORDERED as follows:

1. That Progress, Duke, and Dominion shall file in this docket no later than December 1, 2005, tariffs or riders to allow net metering as ordered herein to be effective on or before January 1, 2006;

2. That Progress, Duke, and Dominion shall file on or before December 1 of each year, beginning December 1, 2006, in Docket No. E-100, Sub 83A an annual report indicating the numbers of net metering applicants and customer-generators, the aggregate capacity of net metered generation, the size and types of renewable energy facilities, the amounts of on-peak and off-peak generation credited and ultimately granted to the utility, and the reasons for any rejections or removals of customer-generators from net metering;

3. That the PV riders allowed to become effective for Progress and Duke by Order dated August 4, 2000, shall be closed effective January 1, 2006, and timely notice of this decision provided to existing customers; and

4. That existing customers on the PV riders shall be transferred to a time-of-use demand rate schedule with net metering effective January 1, 2006, unless they notify their utility no later than December 15, 2005, of their desire to opt out.

ISSUED BY ORDER OF THE COMMISSION.

This the 20th day of October, 2005.

NORTH CAROLINA UTILITIES COMMISSION

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

Patricia Swenson, Deputy Clerk

Commissioner Howard N. Lee did not participate in this decision.

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