

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Beverly Jones Heydinger
David C. Boyd
J. Dennis O'Brien
Phyllis A. Reha
Betsy Wergin

Chair
Commissioner
Commissioner
Commissioner
Commissioner

In the Matter of the Petition by Renewable Energy SD, LLC for Resolution of Cogeneration and Small Power Production Disputes with Benco Electric Cooperative, Federated Rural Electric Association, Meeker Cooperative Light & Power Association, Nobles Cooperative Electric and Tri-County Electric Cooperative under Minn. Stat. § 216B.164, Subd. 5

ISSUE DATE: July 23, 2012

DOCKET NO. E-104,114,121,126 & 145/
CG-12-146

DOCKET NO. E-999/CI-12-785

ORDER REQUIRING FILINGS AND
CUSTOMER NOTICE, AND INITIATING
INVESTIGATION

In the Matter of a Commission Investigation of "Net Energy" and "Net Input" under Minn. Stat. § 216B.164, Subd. 3, and Related Issues

PROCEDURAL HISTORY

On February 16, 2012, Renewable Energy SD, LLC (RESD), filed a complaint against five rural electric cooperatives (collectively, the Cooperatives) -- Benco Electric Cooperative (Benco), Federated Rural Electric Association, Meeker Cooperative Light & Power Association, Nobles Cooperative Electric (Nobles), and Tri-County Electric Cooperative -- alleging violations of Minn. Stat. § 216B.164. RESD alleged that the Cooperatives were impeding and discouraging customers from exercising their rights to install wind turbines, interconnect with the Cooperatives' systems, and sell electricity to the Cooperatives.

By April 25, 2012, the Commission had received comments from the Cooperatives, Steele-Waseca Cooperative Electric (Steele-Waseca), Great River Energy (GRE), and the Minnesota Department of Commerce (the Department), and had received reply comments from RESD.

On June 7, 2012, the matter came before the Commission. The Commission received comments from the parties, and from customers of the Cooperatives supporting RESD's complaint.

FINDINGS AND CONCLUSIONS

I. Summary

In this order the Commission does the following:

First, the Commission determines that, for purposes of Minn. Stat. § 216B.164, a qualifying facility's capacity shall be gauged based on its output averaged over a 15-minute interval.

Second, the Commission reaffirms that Cooperatives must offer to interconnect with their customers in accordance with an unaltered Uniform Statewide Contract provided in Minn. Rules, part 7835.9910.

Third, the Commission directs each Cooperative to provide the following:

- Letters to customers clarifying the eligibility requirements for net metering, and providing a copy of the Cooperative's policies concerning net metering eligibility.
- Documentation demonstrating the calibration of the meters connected to the wind turbines installed within the Cooperative's service area.
- Data regarding the operation of customers' wind turbines connected to the Cooperative's system.

Finally, the Commission opens a generic docket regarding, among other things, the amount of electricity a customer must consume at the location of a customer's wind turbine for the customer to qualify for the benefits of net metering under Minn. Stat. § 216B.164.

II. Background

A. Legal Background

Both federal and state laws encourage the development of small electric generators by requiring electric utilities to purchase power from such facilities.

The federal Public Utility Regulatory Policies Act of 1978 (PURPA) and related regulations are intended to promote energy efficiency and independence by requiring electric utilities to accept and distribute electricity from customers' generators.¹ A utility must purchase electricity from each "qualifying facility" – such as a generator using renewable fuels with a capacity of less than 80 kilowatts (kW) – at a price equal to the utility's avoided cost, or at a negotiated rate.²

Minnesota law goes further: Under Minn. Stat. § 216B.164, the owner of a qualifying facility with capacity less than 40 kW may sell electricity to a utility at the utility's average retail rate – a price

¹ See 16 U.S.C. § 843a-3; 18 C.F.R. § 292.

² 18 C.F.R. §§ 292.303, 292.304. Note that some circumstances relieve a utility from the duty to purchase electricity from qualifying facilities; see 18 C.F.R. § 309-311.

higher than the utility's avoided cost.³ The utility and the customer then compensate each other based on the difference between the amounts of energy each sells to the other at that location; this practice is known as "net metering." The statute also permits a customer to connect its generator to the utility's system in accordance with the terms of a standard, Commission-approved contract.⁴ The Legislature prescribes that this law "shall at all times be construed in accordance with its intent to give the maximum possible encouragement to cogeneration and small power production consistent with protection of the ratepayers and the public."⁵

Finally, in 2004 the Commission issued an order establishing uniform standards governing the relationship between electric utilities and "distributed generation."⁶ In particular, the Distributed Generation order streamlined the process by which a customer may connect its generator to a utility's system and sell energy and capacity to the utility, provided that the generator is "serving the customer receiving retail electric service at the same site" as the generator.⁷

B. Factual Background

Steele-Waseca and the Cooperatives provide electricity to their members throughout rural parts of Minnesota and other states. These retail cooperatives purchase power from wholesale electric cooperatives such as Great River Energy; when a retail customer sells electricity to one of these cooperatives, the effect is to reduce the amount of electricity the cooperatives purchase from GRE.

Renewable Energy SD, LLC, sells, installs, and provides consultation regarding small wind energy systems. RESD claims to have nearly 200 customers that have invested nearly \$ 50 million in small wind energy systems – especially the 39.9 kW wind turbine produced by Polaris America, LLC. This generator is initially manufactured with a nameplate capacity of 50 kW or 53 kW, but Polaris then adds a variable speed drive intended to limit output to no more than 39.9 kW.

III. RESD's Amended Petition

On behalf of some of the Cooperatives' customers, RESD alleges that the Cooperatives interpret Minn. Stat. § 216B.164 in a manner that wrongfully precludes the customers from receiving the statute's benefits and rules. In sum, RESD argues as follows:

- When customers with 39.9 kW wind turbines seek compensation for electricity provided to the Cooperatives, the Cooperatives sometimes refuse to offer retail rates and instead offer rates reflecting avoided cost. If a turbine experiences a wind gust that momentarily generates more than 39.9 kW, the Cooperatives wrongfully conclude that the turbine no longer qualifies for net metering compensation under Minn. Stat. § 216B.164.

³ Minn. Stat. § 216B.164, subd. 3(c).

⁴ Minn. Stat. § 216B.164, subd. 6; Minn. Rules, part 7835.9910.

⁵ Minn. Stat. § 216B.164, subd.1; see also Minn. Rules, part 7835.0200.

⁶ *In the Matter of Establishing Generic Standards for Utility Tariffs for Interconnection and Operation of Distributed Generation Facilities under Minnesota Law 2001, Chapter 212*, Docket No. E-999/CI-01-1023, Order Establishing Standards (September 28, 2004).

⁷ *Id.* at 7.

- The Cooperatives refuse to offer these customers contracts prescribed by Commission rules, and instead offer modified contracts.
- The Cooperatives provide inaccurate information to customers and otherwise discourage customers from seeking compensation under Minn. Stat. § 216B.164. In some instances, a cooperative’s board of directors will adopt policies establishing additional, unauthorized requirements on customers seeking net metering.

IV. Procedural Issues

A. Dismissal of the Petition

The Cooperatives ask the Commission to dismiss RESD’s petition. They argue that RESD has failed to demonstrate that any Commission action is required at this time. To the extent that RESD has identified problems warranting Commission intervention, the Cooperatives state that many of these problems pertain to electric utilities that RESD did not name as respondents to its petition.

For reasons set forth below, the Commission will deny the Cooperatives’ request. While the Commission is not prepared to grant all the relief RESD seeks, the Commission concludes that RESD has raised issues meriting further exploration.

B. Restitution

Conversely, RESD asks the Commission to order the Cooperatives to provide restitution to customers with wind turbines for each instance when the Cooperatives wrongly withheld net metering compensation, as provided by Minn. Stat. § 216B.164, subd. 5, and Minn. Rules, part 7835.4550. These laws also provide for parties to pay the attorney’s fees of the prevailing side.

Because the record of the case is insufficient to permit the Commission to evaluate all of RESD’s claims, the Commission finds it premature to address issues of restitution or attorney fees. Consequently the Commission will deny this request as well.

V. Capacity

The principal dispute among the parties concerns how to determine whether a generator has “less than 40-kilowatt capacity” as set forth in Minn. Stat. § 216B.164.

A. Positions of the Parties

Parties identify two means for gauging a generator’s capacity: nameplate and output.

1. Nameplate

A nameplate states the maximum output that the manufacturer designed the generator to maintain on a continuous basis. Because the nameplate is generally understood to be fixed, not contingent, parties can make decisions about investing in a generator with greater confidence about the regulatory treatment it will receive.

All parties acknowledge practical advantages of having an established measure of a generator's capacity – for example, for preparing annual reports on qualifying facilities. However, parties disagree about which established measure is relevant for evaluating compliance with the 40 kW threshold of Minn. Stat. § 216B.164.

GRE, Steele-Waseca, and the Cooperatives argue that many of the generators installed by RESD have nameplates exceeding 40 kW. In contrast, RESD argues that the relevant criteria for Minn. Stat. § 216B.164 should reflect the capacity not of a generator, but of an entire generating system. In the case of the 39.9 kW Polaris wind turbines, RESD states that the generator's capacity is constrained by another part of the system, the variable speed drive. RESD argues that these drives measure and adjust the generator's output within seconds, making 39.9 kW the relevant measure of capacity.

Steele-Waseca and the other Cooperatives dispute this claim, citing operational data showing that the output from some wind turbines installed by RESD has exceeded 40 kW. These parties argue that unanticipated and excessive output can create hazards. But RESD challenges the suggestion that a momentary surge in output above a 40 kW threshold poses a meaningful threat to the Cooperatives' systems.

2. Output

The alternative means for gauging capacity involves measuring a generator's output averaged over some specified period. However, the parties disagree about the appropriate period over which to measure capacity.

a) Position of RESD

If the Commission declines to accept that RESD's wind turbines qualify for net metering based on their 39.9 kW system capacity, then RESD proposes that the Commission verify their eligibility by measuring each unit's output averaged over a month or billing cycle. Minn. Stat. § 216B.164 does not contain any language that would allow a utility to measure production from a qualifying facility in any timeframe other than a billing period, RESD argues, and the Cooperatives lack the authority to impose this condition on their customers. However, RESD would not object if the Cooperatives compensated customers based on avoided cost rather than net metering for any portion of a customer's output that exceeds the 40 kW threshold.

As a compromise, RESD proposes measuring a generator's highest level of output over any 60-minute interval, as the Federal Energy Regulatory Commission (FERC) has done.⁸ RESD notes that many statutes and rules refer to kilowatt-*hours*, suggesting that an hour is a relevant unit for analysis.

While other parties argue that it is industry practice to measure a generator's capacity based on the generator's maximum output over any 15-minute interval, RESD challenges this assertion. It argues that some of the Cooperatives measure output on a five-minute or even one-minute interval as the basis for gauging demand, undermining the premise that the 15-minute interval reflects an industry standard.

⁸ *American Ref-Fuel of Bergen County*, 54 FERC ¶ 61,287 (1991).

More importantly, RESD argues that 15 minutes is not enough time to gauge the capacity of a wind turbine. While the variable-speed drives attached to the Polaris 39.9 turbines are designed to keep the turbines from generating more than 39.9 kW, occasional gusts cause a turbine's output to increase above 40 kW. Arguably, a customer could reduce the likelihood of exceeding the 40 kW threshold by setting the variable speed drive to some lower output level. But it is unclear to RESD that this strategy could be practical given the variability of wind; gusts may cause spikes above 40 kW regardless of the setting. Moreover, this strategy would result in the wind turbines generating less electricity – in effect, sacrificing a portion of the generator's capacity and the owner's earnings potential.

Ultimately RESD argues that customers should not lose the opportunity to benefit from net metering merely because their generators occasionally exceed the 40 kW threshold.

b) Position of other parties

In contrast, the other parties recommend gauging a generator's output on the basis of the generator's maximum output during any 15-minute interval, which they claim is the electric industry's standard means of measuring capacity. While some cooperatives acknowledge having measured demand at shorter intervals, they deny that they have billed customers based on these intervals.

Steel-Waseca and the Cooperatives emphasize the distinction between energy and power. Energy – measured in kilowatt-hours (kWh) -- is the capacity to do work; power – measured in kilowatts (kW) -- is the rate at which work can be performed. A utility must design its system to accommodate the peak amount of power flowing over its system at any given time. According to Steele-Waseca and the other Cooperatives, unexpected power flows can damage the utility's plant and threaten people's safety. RESD's proposals for measuring capacity would not provide utilities with the information needed to safely connect with customers' generators.

Phrased another way, electric utilities must incur more expense to accommodate more power. For this reason, electric utilities typically charge large customers for the amount of power they demand as well as the amount of energy they consume. The Cooperatives report that they set a customer's demand charge based on the customer's maximum rate of consumption during any 15-minute interval. Analogously, they measure a wind turbine's capacity during a billing period based on the turbine's maximum generation over any 15-minute interval during that billing period.

After exploring various positions, the Department ultimately concurs in the cooperatives' analysis. The Department identified two wind turbines operating within the Cooperatives' systems not associated with RESD. One has a capacity of 35 kW. The second has a capacity of 39 kW but, when informed that it was exceeding the 40 kW threshold, changed its operations to reduce its output. These examples suggest to the Department that the operator of a wind turbine can control the turbine's output, making a 15-minute standard appropriate. The Department supports the practice of many cooperatives to inform wind turbine owners when the turbines generate more than 40 kW, and to grant those owners the opportunity to adjust their turbines and re-qualify for net metering under Minn. Stat. § 216B.164.

B. Commission Action

Minn. Stat. § 216B.164 directs utilities to provide net metering for customers producing electricity from qualifying facilities “having less than 40-kilowatt capacity.” But parties disagree about the application of those words to the current situation. RESD advocates applying the 40 kW threshold flexibly, emphasizing the statutory instruction to construe the law “at all times ... to give the maximum possible encouragement to cogeneration and small power production consistent with protection of the ratepayers and the public.”⁹ Yet, as other parties observe, the statute subsidizes small generators at the expense of other ratepayers.

While a nameplate may prove useful for evaluating a generator’s capacity in some circumstances, the Commission finds that it is not a useful standard for evaluating the capacity of the turbines in dispute. These turbines would have a capacity exceeding 40 kW but for the addition of a variable speed drive. And because this drive is susceptible to adjustment to alter the turbine’s capacity, the Commission finds that the 39.9 kW nameplate is not a reliable guide to the generating system’s capacity. In this context, the Commission concludes that it is appropriate to measure the output of these turbines to verify their capacity.

Where the measurement of capacity is concerned, the Commission concurs with most of the parties that, for purposes of Minn. Stat. § 216B.164, a generator’s capacity should be verified on the basis of its maximum demand averaged over a 15-minute interval. This interval has proven to be a workable industry standard.

RESD cites a FERC decision approving a 60-minute standard for determining whether a generator met the requirements of a qualifying facility under PURPA. But that decision pertained to a solid waste burning facility in which --

generation output fluctuates instantaneously and accordingly must be adjusted many times each hour to follow system load changes. System load or consumer demand typically is determined by averaging energy use over a period of time of 15 to 60 minutes.¹⁰

In 1991 FERC found a 60-minute standard appropriate to accommodate the fluctuations associated with burning solid waste, where the heat content of the waste was unknowable and mechanisms to control the output would be “adjusted many times an hour.” In contrast, RESD offers a contemporary variable-speed drive designed to adjust output within seconds or less,¹¹ making a 15-minute standard appropriate.

Nevertheless, the Commission concurs with GRE and RESD that there is a difference between a generator with output that spikes above 40 kW and a generator that operates above 40 kW. Yet while the parties have exchanged claims about the magnitude, frequency, and duration of output spikes coming from wind turbines, and of their consequences for the Cooperatives’ systems, the

⁹ Minn. Stat. § 216B.164, subd.1; see also Minn. Rules, part 7835.0200.

¹⁰ 54 FERC at 61,817.

¹¹ RESD reply comments, Exh. H.

Commission finds that the record of this proceeding provides insufficient evidence to permit evaluation of such claims.

Consequently the Commission will direct the Cooperatives to provide the Commission with data regarding the operations of the customer-owned wind turbines on the Cooperatives' systems. This data should cover a period of nine to twelve months, should include winter months, and should highlight periods in which a turbine was generating 40 kW or more.

The Commission expects the Cooperatives to work with the Commission to ensure that the data is provided in a useful format. The Commission will further direct the Cooperatives to provide each customer operating a turbine with a copy of the operational data pertaining to the customer's own generator.

VI. Meter Calibration

A. Positions of the Parties

RESD challenges the calibration of the meters used to evaluate the output of the qualifying facilities it has installed. The Cooperatives confirm that the meters have been calibrated, but acknowledge that the calibration data is not in the record.

B. Commission Action

The Commission will direct the Cooperatives to file calibration documentation for the meters measuring the output of all wind turbines connected to the Cooperatives' systems. This information should enable the Commission to determine that the calibration is performed properly and on a regular basis.

VII. Policies of the Cooperatives

A. Positions of the Parties

RESD claims that the Cooperatives have adopted a variety of requirements governing interconnection or eligibility for net metering, and that some of these requirements are inconsistent with or exceed the requirements of statutes, rules, and orders. For example, RESD alleges that some cooperatives have altered the terms of the Uniform Statewide Contract governing interconnection between a customer's generator and the utility. These additional requirements wrongfully interfere with a customer's rights to benefit from state policy favoring small power generation, according to RESD.

The Department corroborates, and the Cooperatives acknowledge, that Benco has offered customers copies of the Uniform Statewide Contract amended to state that customers seeking to interconnect their generators would have to comply with standards required by the federal Rural Utility Service, Benco's lender. Benco had not secured the Commission's approval to vary the terms of the contract. The Department could not determine whether Benco's amendment would have any effect on customers' ability to exercise their rights under Minnesota law.

The Cooperatives further acknowledge that some cooperatives have adopted policies establishing additional requirements for customers seeking interconnection or net metering. In particular, some cooperatives conclude that a net metering policy – that is, billing based on a meter that gauges both a customer’s production and consumption – applies only to customers that actually produce and consume electricity at the same site. The Cooperatives claim that some customers may not be consuming electricity at the site of their generators – or may contrive to consume a trivial amount solely in an attempt to qualify for net metering.

B. Commission Action

The Commission concurs with RESD that utility policies governing a customer’s right to interconnect, and a customer’s eligibility for net metering, must comply with statutes, rules, and orders.

In particular, the Commission finds that customers seeking to operate a qualifying facility meeting the requirements of Minn. Stat. § 216B.164 are entitled to interconnect using the terms of the Uniform Statewide Contract under Minn. Rules, part 7835.9910. These terms were established to streamline the process of interconnection for customers; permitting utilities to amend these terms unilaterally would defeat the purpose of having a standard contract.

Beyond this finding, however, the record of this case is insufficiently developed to permit a proper evaluation of the Cooperatives’ other practices. To facilitate this examination, the Commission will direct the Cooperatives to file with the Commission copies of their policies governing eligibility for net metering.

One net metering issue has proven particularly challenging: minimum consumption requirements. As previously discussed, Minn. Stat. § 216B.164, subd. 3, permits a customer that owns a generator to sell its “net energy” and “net input” to a utility at net metered prices. Similarly, the Commission’s 2004 Distributed Generation order established a streamlined process for interconnecting a small generator with a utility’s grid, provided that the generator is “serving the customer receiving retail electric service at the same site” as the generator;¹² the Commission concludes that the streamlined policy would not apply to merchant plants.¹³ However, RESD correctly observes that the Commission has not established any minimum level of consumption as a requirement for a customer to qualify for net metering.

The Commission concludes that this matter warrants further exploration in its own right. To that end, the Commission will initiate a docket for investigating matters related to the meaning of the terms “net energy” and “net input” under Minn. Stat. § 216B.164, subd. 3. That docket will provide an appropriate forum for addressing the parties’ competing concerns on this topic.

¹² *In the Matter of Establishing Generic Standards for Utility Tariffs for Interconnection and Operation of Distributed Generation Facilities under Minnesota Law 2001, Chapter 212*, Docket No. E-999/CI-01-1023, Order Establishing Standards (September 28, 2004) at 7.

¹³ *Id.*

VIII. Customer Notice

A. Positions of the Parties

RESO argues generally that the Cooperatives have described the legal requirements for qualifying for net metering in a manner designed to discourage customers from exercising their rights under the law. As a partial remedy, RESO proposes that the Cooperatives send letters providing a succinct and accurate statement of customers' opportunities and obligations under Minn. Stat. § 216B.164. The Cooperatives oppose this proposal, claiming that they already communicate with their customers in an accurate and businesslike fashion.

B. Commission Action

The Cooperatives are entitled to communicate with their customers and potential customers about the challenges of interconnecting and operating generators, and of meeting regulatory requirements. But these communications should be factual and fair. Given the amount of disagreement revealed in this docket, the Commission will direct the Cooperatives to send letters to their customers delineating the customers' opportunities and responsibilities under the law. To further reduce the chance of misleading or confusing customers, the Commission will direct the Cooperatives to file drafts of their letters with the Commission's Executive Secretary, and to secure his approval before sending the letters to customers.

ORDER

1. Each of these five electric cooperatives -- Benco Electric Cooperative, Federated Rural Electric Association, Meeker Cooperative Light & Power Association, Nobles Cooperative Electric and Tri-County Electric Cooperative -- shall do the following:
 - Use an unaltered version of the Uniform Statewide Contract provided in Minnesota Rules, part 7835.9910, when entering into an interconnection agreement with a customer seeking to interconnect a qualifying facility with capacity less than 40 kW, unless the Commission has granted a variance to that rule.
 - File copies of each cooperative's policies affecting eligibility for net metering.
 - Draft letters to customers clarifying the eligibility requirements of Minn. Stat. § 216B.164, submit those letters to the Commission's Executive Secretary for approval, and issue the letters as approved by the Executive Secretary.
 - File calibration documentation on the meters measuring the capacity of any qualifying facility wind turbine interconnected with the Cooperatives' systems, demonstrating that calibration is performed properly and on a regular basis.

2. Within 30 days, the Cooperatives shall file operational data for each RESD-related wind turbine within the Cooperatives' systems. This data shall cover a period of nine to twelve months, include winter months, and identify the periods during which a customer's turbine generated more than 39.9 kW. These parties shall also provide to each customer owning a turbine the operational data pertaining to that turbine.
3. The Commission hereby initiates Docket No. E-999/CI-12-785, *In the Matter of a Commission Investigation of "Net Energy" and "Net Input" under Minn. Stat. § 216B.164, Subd. 3, and Related Issues*, to explore the amount of energy a small power producer must consume to qualify for compensation at the average retail utility energy rate under Minn. Stat. § 216B.164, subd. 3, and related issues.
4. This Order shall become effective immediately.

BY ORDER OF THE COMMISSION

Burl W. Haar
Executive Secretary



This document can be made available in alternative formats (i.e., large print or audio tape) by calling 651.296.0406 (voice). Persons with hearing or speech disabilities may call us through Minnesota Relay at 1.800.627.3529 or by dialing 711.