

September 3, 2024

Will Seuffert, Executive Secretary Minnesota Public Utilities Commission 121 7<sup>th</sup> Place East, Suite 350 Saint Paul, MN 55101-2147

Subject: Dakota Electric Association Comments

*In the Matter of Impacts of the "Capacity" Definition in Minnesota Statute* 216B.164 and Associated Rules on Net Metering Eligibility for Rate-*Regulated Utilities* 

Docket No. E-002, -111, -017, -015/CI-24-200

Dear Mr. Seuffert:

On October 2, 2023, the Minnesota Solar Energy Industries Association (MnSEIA) filed an objection in Docket No. E999/CI-16-521 to specific statements in Section 11 of Dakota Electric Association's<sup>®</sup> (Dakota Electric or Cooperative) updated Technical Specifications Manual (TSM) governing metering requirements. MnSEIA argued in that proceeding that Minnesota law regarding compensation for qualifying facilities with a capacity of less than 40 kilowatts (kW) at the average retail utility energy rate must be based on "export capacity at the point of interconnection/common coupling, not . . . generation capacity at the point of connection."<sup>1</sup> Dakota Electric, along with the Minnesota Rural Electric Association (MREA) and the Minnesota Municipal Utility

<sup>&</sup>lt;sup>1</sup> Docket Nos. E-111/M-18-711, E-999/CI-16-521, MnSEIA Initial Comments at 2 (Jan. 12, 2024).

Association (MMUA) disagreed, explaining that, while facilities are compensated based on the amount of net energy production, or net input, that they add to the utility's system, nameplate capacity is used to measure capacity for purposes of managing capacity limits and determining compensation levels. The Cooperative noted that while a facility with a nameplate capacity of 40 kW or more could be modified to limit production to less than 40 kW, doing so could require adjustments to its distribution system to protect the integrity of its operations, including safety and reliability.

On May 22, 2024, the Minnesota Public Utilities Commission (Commission) issued an Order Initiating Proceeding into Definition of "Capacity" in Docket Nos. E111/M-18-711 and E999/CI-16-521 determining that it was reasonable for Dakota Electric to remove the first sentence of Section 11.1.1 of its TSM to avoid potential confusion over the use of nameplate rating.<sup>2</sup> The Commission also concluded that, while MnSEIA had:

...not demonstrated that Dakota Electric's application of "nameplate rating" has impeded installation of net-metered or qualifying facilities, the Commission will further explore the issues raised by opening a separate docket into the use and definition of "capacity" as set forth in Minn. Stat. § 216B.164, subd. 3(d).<sup>3</sup>

The Commission also found:

Further discussion of whether a more precise meaning can be derived may be useful in resolving whether current application of the term "capacity" is reasonable. Identifying clear language that can be generally applied to most instances is the basis for establishing standards that are reasonable and that facilitate informed decision-making. Based on the current record, it is unclear, for example, how frequently a facility with a nameplate capacity of 40 kW or more would be installed for the purpose of operating under 40 kW; distilling such circumstances, and how often they vary, will facilitate a more comprehensive understanding of the issues raised and whether the definition of "capacity" should be further refined.<sup>4</sup>

<sup>&</sup>lt;sup>2</sup> Dakota Electric filed an updated TSM reflecting the Commission's Order on May 24, 2024.

<sup>&</sup>lt;sup>3</sup> Docket Nos. E111/M-18-711, E999/CI-16-521, Order Initiating Proceeding into Definition of "Capacity" (May 22, 2024).

<sup>&</sup>lt;sup>4</sup> Docket Nos. E111/M-18-711, E999/CI-16-521, Order Initiating Proceeding into Definition of "Capacity" at 4 (May 22, 2024).

On June 4, 2024, the Commission issued a Notice of Comment Period (Notice) in the above-referenced docket. This Notice stated that the issue to be addressed is:

How should the Commission apply the definition of "capacity" in Minnesota Statute 216B.164 and Associated Rules without creating reliability problems related to net-metering rate eligibility for rateregulated utilities?

The Commission also noted that the following topics were open for comments:

1. How should the Commission consider the "capacity" definition in Minnesota Statute 216B.164 and associated rules on net metering eligibility for rate-regulated utilities?

 What should the Commission consider regarding the definition of "capacity" as it relates to reliability and net metering rate eligibility?
 Are there other issues or concerns related to this matter?

Dakota Electric appreciates the opportunity to respond to the Commission's Notice in this matter and addresses each of the Commission's requests below. The Cooperative notes that while preparing these comments, we participated in an *ad hoc* workgroup made up of the rate-regulated utilities, MREA, MnSEIA, and distributed energy installers in an effort to better understand the issue and present the Commission with the most complete record possible to reach an informed policy decision. At the outset, there appeared to be consensus over treatment of certain topics such as non-exporting battery energy storage systems (BESS) and inverter configuration but ultimately the participants were unable to reach agreement.

Before responding to the Commission's Notice, Dakota Electric reiterates that we are a member-owned, and focused, not-for-profit distribution cooperative; as such, we do not have shareholders or investors, we have members. Our members are our owners, including those individuals and businesses that install DERs. We want to make sure that if a member wants to install a DER, we are able to facilitate this transaction in the most efficient and cost-effective manner possible and, most importantly, in compliance with

relevant laws. We also have an obligation to make sure that the process is fair for all members, including those without DER systems, so that costs are not unduly shifted and that system reliability is maintained. Dakota Electric has a statutory obligation to provide non-discriminatory utility service to any member in our service territory.<sup>5</sup>

### Dakota Electric Response

The Commission initiated this proceeding to evaluate the "application of the definition of 'capacity' in Minn. Stat. § 216B.164, subd. 3(d) and associated rules without creating reliability problems related to net-metering rate eligibility for Dakota Electric, Minnesota Power, Otter Tail Power Company, and Xcel."<sup>6</sup> Minn. Stat. § 216B.164, subd. 3(d) provides:

Notwithstanding any provision in this chapter to the contrary, a qualifying facility having less than 40-kilowatt capacity may elect that the compensation for net input by the qualifying facility into the utility system shall be at the average retail utility energy rate.

The Commission should consider the "capacity" definition in Minn. Stat. § 216B.164 and associated rules related to average retail rate eligibility for rate-regulated utilities in light of:

 The need to determine DER capacity in a way that ensures eligibility for netmetering can be reasonably administered and to ensure the protection of system reliability, consistent with the approved Minnesota Distributed Energy Resources Interconnection Process (MN DIP). The MN DIP establishes nameplate ratings as the basis for the definition of capacity. Nameplate rating is a well understood engineering concept that is commonly used in electrical system planning and design. It establishes a criteria or threshold to reasonably tie a system's size and

<sup>&</sup>lt;sup>5</sup> Minnesota Statutes § 216B.03.

<sup>&</sup>lt;sup>6</sup> Docket Nos. E-111/M-18-711, E-999/CI-16-521, Order Initiating Proceeding into Definition of "Capacity" at 4 (May 22, 2024) (Order Point 2).

interconnection to the requirements for retail net metering, which is any DER under 40kW in the case of Dakota Electric and other consumer owned utilities;

- The statutory direction in Minn. Stat. § 216B.164 and the Commission's rules in Chapter 7835, which were most recently amended following a formal rulemaking proceeding initiated in 2013 and completed in 2015 in Docket No. E-999/R-13-729; and
- The purpose of making the retail rate available to qualifying small DER and the need to balance that with the "protection of the ratepayers and the public" in accordance with Minn. Stat. § 216B.164.
  - 1. How should the Commission consider the "capacity" definition in Minnesota Statute 216B.164 and associated rules on net metering eligibility for rate-regulated utilities?

In applying the rules of statutory construction, the Legislature does not intend a result that is absurd, impossible of execution, or unreasonable.<sup>7</sup> As laid out in greater detailed below, it is unclear how MnSEIA's interpretation of capacity as export capacity could be reasonably applied, as the capacity of a facility would vary over time with changes in customer load. With the uncertainty of load, there is no meaningful measure, or standard, for whether the facility meets the requirement of having less than 40-kW capacity. The Legislature intends the entire statute to be effective and certain. MnSEIA's proposed interpretation, however, would insert substantial uncertainty in determining whether a particular facility is entitled to the net metered rate and what the implications are if the facility's actual exports are in excess of the 40-kW limit.

It is important that the Commission examine the definition of "capacity" as applied to the net metering eligibility provision in Minn. Stat. § 216B.164, subd. 3(d) in the context of the overall statute. This contextual analysis includes: the statutory

<sup>&</sup>lt;sup>7</sup> Minn. Stat. §645.17.

definition of capacity and provisions for net metering eligibility; the Commission's rules implementing Minn. Stat. § 216B.164 in Minnesota Rules Chapter 7835, including the definitions of capacity and point of common coupling adopted by the Commission in 2015 following a 23-month formal rulemaking proceeding; and the Commission's prior proceedings and understanding of capacity in the context of net metering. When the relevant Statutes, Rules, and the Commission's rulemaking proceeding are reviewed in their entire context, these considerations all support the rejection of MnSEIA's suggested definition that capacity, for purposes of net metering eligibility, is based on export capacity. Instead, this analysis supports evaluating capacity based on the nameplate capacity of generation. Dakota Electric lays out this contextual analysis below.

Minn. Stat. § 216B.164, subd. 2a(c) defines "capacity" as:

the number of megawatts alternating current (AC) at the point of interconnection between a distributed generation facility and a utility's electric system.<sup>8</sup>

A plain reading of this definition supports the interpretation that a facility's "capacity," for purposes of net metering, is the facility's AC output, not its export to the grid. While "point of interconnection" is not defined in the statute, that term is commonly understood in the industry, and discussed in these comments, to be the output of the generating device(s), exclusive of any offset from load.<sup>9</sup> That understanding comports with the remainder of the statutory definition of capacity, which refers to interconnection between the utility's system and "distributed generation," which is defined as the facility that generates electricity.<sup>10</sup> The Statute is clear that it is the facility's output where connected, not its export to the grid, that determines its capacity

<sup>&</sup>lt;sup>8</sup> Minn. Stat. § 216B.164, subd. 2a(c).

<sup>&</sup>lt;sup>9</sup> It is important note that the industry uses the Point of Interconnection and Point of DER Connection interchangeably.

<sup>&</sup>lt;sup>10</sup> Minn. Stat. § 216B.164, subd. 2a(h) (""Distributed generation" means a facility that: (1) has a capacity of ten megawatts or less; (2) is interconnected with a utility's distribution system, over which the commission has jurisdiction; and (3) generates electricity from natural gas, renewable fuel, or a similarly clean fuel, and may include waste heat, cogeneration, or fuel cell technology.").

for net metering. Importantly, Minn. Stat. §216B.164 does not refer to the amount "exported" to the grid as the capacity of the facility or use the term "point of common coupling."

This interpretation is also supported by the context of Minn. Stat. §216B.164 subd. 3(d), which makes the net metering rate (*i.e.,* retail rate) available to the net input into the utility system by a qualifying facility having less than 40-kilowatt capacity. The Statute contemplates net metered compensation for net input, but only if that net input comes from a facility having less than 40-kilowatt capacity. This provision clearly is not intended to define capacity as the "net export" to the grid. Instead, it is written as the net input (*i.e.,* the production) from a facility that has a certain fixed capacity. If the Legislature had intended the net metering rate to be available based on net export to the grid, the Statute would have simply stated that the retail rate applies to a facility's net input less than 40 kW into the utility system.<sup>11</sup>

The Commission's current rules implementing Minn. Stat. 216B.164 further clarify that capacity means "the *capability* to produce, transmit, or deliver electric energy, and is measured by the number of megawatts alternating current at the point of common coupling between a qualifying facility and a utility's electric system."<sup>12</sup> As discussed in Commission Staff Briefing Papers in the rulemaking proceeding, Docket E999/R-13-729, with respect to the proposed definition of capacity:

[r]etaining the existing language [of the capability to produce, transmit, or deliver electric energy] ensures that capacity can be determined *by using nameplate capacity, i.e., the system's capability*.<sup>13</sup>

The words "capability to produce" would have no meaning under MnSEIA's interpretation of capacity as net export because, under that interpretation, what the

<sup>12</sup> Minn. R. 7835.0100, subp. 4 (emphasis added).

<sup>&</sup>lt;sup>11</sup> Minn. R. 7835.3300, similarly provides that "The average retail utility energy rate is available only to qualifying facilities with capacity of less than 40 kilowatts which choose not to offer electric power for sale on either a time-of-day basis or a simultaneous purchase and sale basis. . . . When the energy generated by the qualifying facility exceeds that supplied by the utility during a billing period, the utility must compensate the qualifying facility for the excess energy at the average retail utility energy rate."

<sup>&</sup>lt;sup>13</sup> Docket No. E-999/R-13-729, Commission Staff Briefing Papers at 4 (June 3, 2015) (emphasis added).

system is *capable of producing* is not considered.<sup>14</sup> Furthermore, the "capability to produce" was not intended to include the local load at the premise. This load is not required for the operation of the DER to be capable of producing, transmitting, or delivering electric energy. Additionally, this local load is highly variable and exclusive from the DER's actual capacity to produce. As the Commission explained in its Statement of Need and Reasonableness (SONAR), Minn. Stat. §216B.164:

incentivizes *limits on production* by making available the retail compensation rate to customers operating within applicable limits. The lower, avoided cost rate applies if the customer's production exceeds those limits.<sup>15</sup>

The Commission and the industry have understood the net metering rate to be limited to facilities based on their generating output, not their net export to the grid.

Minnesota Rules also define "point of common coupling" as "the point where a qualifying facility's *generation system, including the point of generator output,* is connected to the utility's electric power grid."<sup>16</sup> In adopting that definition, the Commission stated its intent to, "clarify that the point of generator output is relevant in measuring capacity."<sup>17</sup> Nevertheless, MnSEIA has urged the Commission to consider only the export capacity of a facility, an interpretation which is contrary to the Commission's stated intent to consider generator output in determining whether a facility qualifies for the retail rate.

Further, the Commission adopted use of the term "point of common coupling" rather than using the statutory term "point of interconnection" based on its understanding and intent that "the point of interconnection and the point of common

<sup>&</sup>lt;sup>14</sup> Docket Nos. E-111/M-18-711, E-999/CI-16-521, MnSEIA Comments at 8 (Jan. 12, 2024).

<sup>&</sup>lt;sup>15</sup> Docket No. E-999/R-13-729, Statement of Need and Reasonableness at 19 (Dec. 29, 2014) (emphasis added) ("There were concerns that without any system sizing requirement, production could exceed consumption and increase net input to unanticipated levels, possibly raising safety and reliability issues for the utility's system... The statute, however, incentivizes limits on production by making available the retail compensation rate to customers operating within applicable limits. The lower, avoided cost rate applies if customer's production exceeds those limits.").

<sup>&</sup>lt;sup>16</sup> Minn. R. 7835.0100, subp. 17a.

<sup>&</sup>lt;sup>17</sup> Docket No. E-999/R-13-729, Order Adopting Rules at 4 (July 17, 2015).

coupling are not necessarily distinct concepts."<sup>18</sup> When the Commission promulgated these Rules, the Commission likely understood the "point of common coupling" (PCC) to be what is now referred to as the "point of DER connection" (PoC) under the MN DIP,<sup>19</sup> because the Commission was operating under the directives and understandings associated with the 2004 State of Minnesota Distribution Generation Interconnection Requirements. When these standards were being established, IEEE had not yet defined *Point of DER Connection,* only a definition for *Point of Common Coupling* existed. These separate terms had not been defined in the approved interconnection process for distributed generation systems and a difference between PoC and PCC was not envisioned at that time.<sup>20</sup> In the simplest sense, the definition of "point of common coupling" used in the update to Minnesota Rules 7835 is not the same concept that is used today or in the arguments made by MnSEIA.

This is important because, as discussed later in these comments, the PoC does not include any customer load and measures only the output of the DER generation whereas the point of common coupling, as defined in the current MN DIP, is defined based on where the distribution system connects to the customer's electrical system, which would include any load (*i.e.*, generation export to the grid would be reduced by customer load). The presence of load, either controlled or otherwise, in the determination of capacity inserts significant operational and administrative risks and

<sup>&</sup>lt;sup>18</sup> Docket No. E-999/R-13-729, Commission Staff Briefing Papers at 5 (Oct. 23, 2014).

<sup>&</sup>lt;sup>19</sup> Docket No. E-999/CI-16-521, MN DIP Updated by Apr. 14, 2024 Order, MN DIP Glossary of Terms at 4 (May 3, 2024).

<sup>&</sup>lt;sup>20</sup> Docket No. E-999/R-13-729, Order Adopting Rules (July 17, 2015) ("Use of this term [point of common coupling] is consistent with recent Commission decisions, including the Commission's decision establishing interconnection standards, which define 'point of common coupling' as the point where the local area electric power system (the customer's system) is connected to an area electric power system (the utility's system)") (citing *In the Matter of Establishing Generic Standards for Utility Tariffs for Interconnection and Operation of Distributed Generation Facilities under Minnesota Laws 2001, Chapter 212, Docket No. E-999/CI-01-1023, Order Establishing Standards (Sept. 28, 2004) and <i>In the Matter of the Petition of Northern States Power Company, d/b/a Xcel Energy for Approval of its Proposed Community Solar Garden Program,* E-002/M-13-867, Order Approving Solar Garden Plan with Modifications at 14 (Sept. 17, 2014) (replacing the term "point of interconnection" with "point of common coupling," a term that was defined and used elsewhere in Xcel's tariffs as the point where the Local EPS is connected to Xcel Energy, with the Local EPS defined as "an electric power system contained entirely within a single premise or group of premises" and understood in that proceeding to be "facilities that deliver electric power to a load.")).

concerns that cannot be ignored. The Cooperative discusses these risks and concerns in greater detail below.

The utility industry and industry standards, apart from specific and discreet circumstances, have always recognized the capacity of a DER system at the DER system's output, prior to the incorporation of electrical load, in accordance with IEEE 1547.<sup>21</sup> IEEE 1547 is the technical standard Minnesota has adopted for the safe and reliable interconnection of DER systems. MnSEIA has not offered any basis to reconcile its interpretation of capacity as net export with the definition of point of common coupling contained in Minn. R. 7835.0100, supb. 17a or the standards set forth in IEEE 1547. Instead, MnSEIA provided its own definition of point of common coupling as "the point the main/bidirectional meter is located,"<sup>22</sup> without reference to the duly promulgated rule or associated Commission decisions that incorporate energy production.

Additionally, the Commission-approved uniform statewide contract, contained in Minn. R. 7835.9910, and updated at the same time as the rulemaking for net metering, supports the Cooperative's understanding of "capacity" with respect to determining eligibility for the net metering rate. Minn. R. 7835.6100 provides that:

The form of the uniform statewide contract for use between a utility and a qualifying facility having less than 40 kilowatts of capacity must be as shown in part 7835.9910.

Dakota Electric's Commission-approved Uniform Statewide Contract, which is the language in Minnesota Rules 7835.9910, provides:

the QF has installed electric generating facilities consisting of [description of facilities], *rated at* less than 40 kilowatts of electricity, on property located at [location].<sup>23</sup>

<sup>&</sup>lt;sup>21</sup> IEEE Standard for Interconnection and Interoperability of Distributed Energy Resources with Associated Electric Power Systems Interfaces, IEEE Std 1547-2018.

<sup>&</sup>lt;sup>22</sup> Docket Nos. E-111/M-18-711, E-999/CI-16-521, MnSEIA Initial Comments at 2 (Jan. 12, 2024). Instead of relying in the applicable definition contained in Minn. R. 7835.0100, subp. 17a, MnSEIA references to the definition in the Minnesota Technical Interconnection and Interoperability Requirements (TIIR). Notably, TIIR does not adopt the same definition of "point of common coupling" as Minnesota Rules Chapter 7835, which implement Minn. Stat. §216B.164.

<sup>&</sup>lt;sup>23</sup> Dakota Electric Association Tariff, Section IX, Sheet 7, Revision 9 (emphasis added).

This language makes clear that the capacity is measured based on the nameplate rating, or aggregate DER nameplate rating. The nameplate rating of a DER is the maximum *physical* production capacity that a manufacturer publishes and tests under standard test conditions. MnSEIA's capacity interpretation does not comport with the Statewide Contract because export capacity does not represent the maximum physical generating rating of a DER.

The simple wording of the Statewide Contract assumes a fixed rating but, equally important, it is necessary to consider what is not stated in the Statewide Contract. Namely, there is no provision or process in the Statewide Contract that lays out what happens to compensation if a DER exceeds the rated capacity. If capacity is meant to be based on export capacity, then it stands to reason that the Statewide Contract would have a process in place to address the possibility that a facility will violate net metering provisions as a result of inevitable variations in export.

Finally, the statutory presumptions for ascertaining legislative intent provide that the Legislature intends to favor the public interest as against any private interest.<sup>24</sup> The purpose of the net metered rate is to encourage distributed energy resources sized to offset customer load, not sized to export to the utility. Minn. Stat. 216B.164, subd. 1 provides that:

This section 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*.

The Legislature intended to set limits on the size of facilities that are eligible to receive the average retail utility energy rate; balancing the encouragement of cogeneration and small power production while also placing appropriate limitations to protect customers. MnSEIA's reasoning appears to suggest that all production (regardless of the true size of a facility) up to 40kW is eligible for retail net metering. This is problematic because it creates an incentive to overbuild facilities and move away from the statutory requirement that these facilities be built to offset energy use. In this instance, the DER

<sup>&</sup>lt;sup>24</sup> Minn. Stat. §645.17.

has the potential to become a "miniature merchant plant." This would countervail the common understanding of net metering and risk shifting significant distribution costs to other consumers who are unable to install a DER or can only afford to install smaller DER facilities. Beyond shifting distribution costs, MnSEIA's interpretation risks crowding out smaller DER installations if larger, overbuilt facilities take away available hosting capacity.

# 2. What should the Commission consider regarding the definition of "capacity" as it relates to reliability and net metering rate eligibility?

The issue of reliability with respect to net metering eligibility was an important part of the Commission's discussion at its April 11, 2024 Agenda Meeting in Docket Nos. E-111/M-18-711 and E-999/CI-16-521 and is an important part of the Commission Notice that Dakota Electric responds to in these comments.

Determining capacity based on the amount of energy exported to the grid would make administering net metering compensation extremely difficult. There is a significant amount of testing required in order to verify the operation of a DER system if it operates at a capacity different than its nameplate capacity. Further, even non-exporting systems can cause safety and reliability issues for the distribution system, and, therefore, require consideration of the nameplate capacity. Dakota Electric's obligation to provide reliable service requires that Dakota Electric study and test DER systems in accordance with national standards.

IEEE 1547 sets the standard for Interconnection and Interoperability of a Distributed Energy Resources with Associated Electric Power Systems Interfaces. This national standard forms the basis of the MN DIP and the Minnesota Technical Interconnection and Interoperability Requirements (MN TIIR). Although the IEEE 1547 standard does not define capacity, it does define Nameplate Ratings:

**nameplate ratings**: Nominal voltage (V), current (A), maximum active power (kW), apparent power (kVA), and reactive power (kvar) at which a DER is capable of sustained operation.

NOTE—For Local EPS with multiple DER units, the aggregate DER nameplate rating is equal to the sum of all DERs nameplate rating in the Local EPS, not including aggregate capacity limiting mechanisms such as coincidence factors, plant controller limits, etc., that may be applicable for specific cases.<sup>25</sup>

Within the definition of nameplate ratings, IEEE includes a clarifying note that the nameplate rating of a DER, or aggregate DERs, does not include capacity limiting mechanisms.<sup>26</sup> Notwithstanding capacity limited mechanisms, it is important to note that when capacity is referenced in the IEEE 1547 standard, it typically refers to capacity as nameplate rating or nameplate capacity of the DER or aggregate DERs.

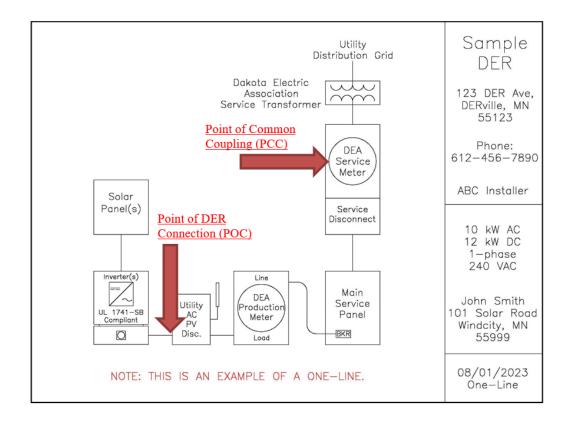
There was significant discussion and argument in the original dispute proceeding regarding the appropriate point to measure capacity for the purpose of determining net metering eligibility. These arguments centered largely on two locations, the point of common coupling (PCC) and the point of DER interconnection (PoC). Both of the terms are defined in the current MN TIIR.<sup>27</sup> As discussed above, however, when the Commission adopted and defined the term "point of common coupling" in Minn. R. 7835.0100 as "the point where a qualifying facility's *generation system, including the point of generator output,* is connected to the utility's electric power grid,"<sup>28</sup> the Commission appears to have understood the "point of common coupling" (PCC) to be what is now referred to as the "point of DER connection" (PoC).

<sup>&</sup>lt;sup>25</sup> IEEE 1547, Page 24.

<sup>&</sup>lt;sup>26</sup> Capacity limiting devices may include coincidence factors and plant controllers. Coincidence factor is a local electrical load that is concurrent with DER operation to reduce export capacity. A plant controller is a device such as a power control system that may monitor or limit the export capacity to the grid.
<sup>27</sup> State of Minnesota, Technical Interconnection and Interoperability Requirements (Approved by Commission Order dated Jan. 22, 2020).

<sup>&</sup>lt;sup>28</sup> Minn. R. 7835.0100, subp. 17a.

In simple terms, the PoC is the location where the DER is *physically* interconnected with the local wiring of a member's electrical system. At this point, the capacity of the system is exclusive (does not include) of any load. The PCC is the location where the local electrical system *meets* the utility's electrical power system (which typically is inclusive of load). A sample one-line diagram from Dakota Electric's TSM has been labeled with the locations of the PoC and PCC for reference.



DER system capacity has always been determined at the point of generator output which is typically the Point of DER Connection. In order for a DER to establish an export capacity different than its nameplate capacity, the DER would need to use a Power Control System (PCS) or similar device. A PCS used to limit export capacity operates by measuring the current load that exists within the local electric system. It also measures the current production level of the DER. To limit export to the grid, a PCS will raise or lower the output of the DER based upon the current load it measures to keep the DER at its specified export limit. Electrical load is constantly changing and can increase or decrease instantaneously. A PCS used to control export to the grid is load following, which means that if load changes, it needs to measure the load and then respond by curtailing the DER. There can be times when loads instantaneously drop and there is a delay in which a PCS needs time to measure that the load has changed before it can curtail the DER output. This means that there could be instances where a 40kW export limited DER is in fact exporting above the 40kW threshold for a period of time. If this happens, the additional export above 40kW could cause distribution system issues and affect reliability. The significance of reliability issues is further magnified if the PCS completely fails, and the full nameplate rating of a DER is exported to the grid. This may be a low risk, but it is not insignificant and, given the utility's statutory requirement to provide safe and reliable service, even with the presence of a PCS, a utility will need to study the DER with the context of its full nameplate rating. Additionally, rigorous testing is required to verify a DER using an export limited PCS system operates under all conditions because a DER manufacturer cannot test the field operating conditions at the factory when the local member load is included.

Under current practice, utilities rely on DER manufacturers and national testing laboratories to test and certify the interoperability requirements of a DER. These interoperability requirements are typically tested at the point of the DER system output (the PoC) and under standard testing conditions. If a DER uses a PCS to limit export capacity, the utility and DER installer are then responsible for field testing and verifying that the DER operates and maintains interoperability requirements so that reliability and safety are maintained. This field testing and verification represents a significant expense and effort to verify that the DER meets interoperability requirements. Additional problems and delays could be involved such as: requiring member outages to test DER performance when load is removed, planning testing only around peak solar production times to verify operation, and/or requiring additional functional testing verifying the communication and control systems operate with the export limited capacity. If the Commission considers the use of PCS, or other export limiting devices, to determine the

capacity of a DER system, it is important to note that each of these systems is unique to the specific interconnection and application. Additionally, different DER manufacturers have different software and control methods, meaning that every DER installation may require bespoke testing procedures.

Beyond potential equity issues, these systems are likely to increase the overall costs of interconnections and the amount of time needed to connect DERs. It cannot be understated that changing from nameplate capacity to export capacity, in reference to net metering eligibility, would be a significant change in the review and administrative processes of DER interconnection. While Dakota Electric is not opposed to using a PCS, or similar device, to limit the export of a DER to the grid, we do not believe that a DER should be allowed to limit its export to the grid *specifically* to qualify for net metering given the context that this export limited capacity does not represent the full generating capacity of a DER.

Dakota Electric appreciates the Commission raising the issue of safety and reliability on this topic because it is important to review in light of other statewide energy policy goals and objectives. As demonstrated in the original dispute proceeding, and through a lack of formal or informal complaints, the Cooperative operates an efficient, member-focused interconnection process which facilitates increased DER penetration on the distribution system. At a high level, Dakota Electric sees Minnesota's current energy policy around DER as one that seeks to further increase penetration of these systems and their availability to all ratepayers. Beyond legal considerations, as detailed earlier in these comments, the reliability and safety considerations show that MnSEIA's interpretation of capacity based on export will not increase the equitable deployment of DER on the Dakota Electric system. Allowing export-limited systems to be eligible for net metering would increase the risk that larger, export limited systems, which will likely be associated with accounts or members who have the ability to afford or finance these significant investments, will crowd out members who are interested in deploying smaller DER systems. This may result in the overall amount of deployed DER being lower than it would have been otherwise and deployed in a manner that is less equitable.

#### 3. Are there other issues or concerns related to this matter?

The Cooperative wishes to briefly address three issues that it believes are important for the Commission to consider. First, the Commission's Order inquired about how frequently a system with a nameplate rating greater than 40kW will operateing under 40kW may happen. Specifically, the Commission stated:

Based on the current record, it is unclear, for example, how frequently a facility with a nameplate capacity of 40 kW or more would be installed for the purpose of operating under 40 kW; distilling such circumstances, and how often they vary, will facilitate a more comprehensive understanding of the issues raised and whether the definition of "capacity" should be further refined.<sup>29</sup>

This is a relevant question, but it is difficult for Dakota Electric to provide a definitive answer. Ultimately, the decision to install a facility, regardless of size, comes down to economics and feasibility. Since this sort of analysis is not available at this time, the Cooperative is remiss to speculate. Dakota Electric does note that we see occasional inquiries about export limited facilities but that would likely change if the net metering eligibility standard were modified. We believe, however, it is important instead for the Commission to focus on the real reliability and administrability issues, which we discussed at length above, that would need to be addressed if these sorts of systems are allowed. The Commission needs to assume that if these types of "greater than 40kW nameplate but net metering eligible" facilities are permissible that there will be a push to market them.

Second, the Cooperative believes it is important that the Commission understand that the capacity definition, and however net metering compensation is applied, does not prevent, or allow, a member from installing a DER. It may impact the economics of a project, but if a DER project is not eligible for net metering because it is

<sup>&</sup>lt;sup>29</sup> Docket Nos. E111/M-18-711, E999/CI-16-521, Order Initiating Proceeding into Definition of "Capacity" at 4 (May 22, 2024).

too large, the member is still able to interconnect, they just receive avoided cost compensation for any *excess* production exported to the utility. Any DER production used by the member that offsets energy they would have purchased is essentially retail net metering compensation because the member never bought this energy.

Third, Dakota Electric noted in our original comments in the MnSEIA dispute that it appeared that some of MnSEIA's concerns may be related to aggregating solar and storage capacity for the purpose of determining capacity for retail net metering eligibility.<sup>30</sup> During the workgroup process, the Cooperative notes that several DER installers confirmed that this is an area of concern and that addressing this issue would be helpful.<sup>31</sup> Through its participation in the workgroup and review of the dispute record and the various Commission rulemakings and Minnesota Statute, the Cooperative believes there may, under certain circumstances, be a path forward different than strictly using nameplate rating. As discussed at length above, the Cooperative does not believe that system reliability or overall DER deployment is adversely impacted if the Commission concludes that maintaining nameplate rating is the appropriate application of capacity because nameplate rating is the industry standard and has been used by utilities for decades. However, there may now exist methods available to consider other measurements. That being said, it is paramount that nameplate rating is the starting point to investigate any alternate measuring point, because it is a fixed position that readily determined and easily understood, unlike MnSEIA's interpretation based on export capacity at the PCC that does not exist in Minnesota Statute and creates significant operational and reliability risks.

<sup>&</sup>lt;sup>30</sup> Docket Nos. E-111/M-18-711, E-999/CI-16-521, Dakota Electric Comments at 8 (Jan. 12, 2024).

<sup>&</sup>lt;sup>31</sup> Dakota Electric notes that the Commission recently directed the DGWG to explore topics related to battery energy storage systems in its April 15, 2024 Order in Docket No. E999/CI-16-521. Ordering Point No. 7 stated:

The Commission directs the DGWG to explore if and how battery storage systems should be evaluated under the MN DIP. Topics to discuss would include: should the battery storage and DER generation be studied on a combined basis in the interconnection process, and whether or not net-metered DER plus storage applications should be treated differently under the MN DIP than non-exporting DER plus storage applications.

#### Conclusion

DER interconnection and net metering compensation are important energy policy matters, and the Commission's investigation into this subject seeks to clarify how capacity is defined to determine net metering eligibility. Dakota Electric's analysis above supports its application, and this application by other utilities in Minnesota, that uses nameplate rating as the DER's capacity for the purposes of net metering eligibility. Nameplate rating is a well understood, easily administered industry standard that has been used to determined net metering eligibility for decades and ensures the Cooperative's ability to maintain safe and reliable electric service for all members.

If you or your staff have any questions about these comments, please contact me at 651-463-6258 or <a href="mailto:aheinen@dakotaelectric.com">aheinen@dakotaelectric.com</a>.

Sincerely,

/s/ Adam J. Heinen

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I, Melissa Belschner, hereby certify that I have this day served copies of the attached document to those on the following service list by e-filing, personal service, or by causing to be placed in the U.S. mail at Farmington, Minnesota.

### Docket No. E999/CI-24-200

Dated this 3rd day of September 2024

/s/ Melissa Belschner

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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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Generic Notice	Residential Utilities Division	residential.utilities@ag.stat e.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012131	Electronic Service	Yes	OFF_SL_24-200_Official
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