

COMMONWEALTH OF VIRGINIA  
STATE CORPORATION COMMISSION  
AT RICHMOND, MARCH 3, 2023

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COMMONWEALTH OF VIRGINIA, *ex rel.*

STATE CORPORATION COMMISSION

CASE NO. PUR-2022-00073

*Ex Parte:* In the matter considering utility distributed energy resource interconnection-related issues and questions

ORDER

As part of its Final Order in Case No. PUR-2021-00127, the State Corporation Commission ("Commission") found that it would, by separate order, open a docket to explore interconnection issues related to utility distributed energy resources ("DER") in a comprehensive manner.<sup>1</sup> In accordance with that finding, the Commission issued an Order for Comment in this proceeding on May 24, 2022, which, among other things, provided interested persons an opportunity to comment on DER interconnection issues and directed Commission Staff ("Staff") to file a report ("Report") on such issues.<sup>2</sup> The Commission provided interested parties and Staff the opportunity to address the following as part of their filings:

- What are the primary obstacles (*e.g.*, sources of delay or cost) to the interconnection of DER on the distribution system?
- What solutions have utilities implemented to facilitate the efficient interconnection of DER to the distribution system? Have they been effective? How can they be improved?

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<sup>1</sup> See *Petition of Virginia Electric and Power Company, For approval of a plan for electric distribution grid transformation projects pursuant to § 56-585.1 A 6 of the Code of Virginia*, Case No. PUR-2021-00127, Doc. Con. Cen. No. 220110126, Final Order at 26 (Jan. 7, 2022).

<sup>2</sup> The Commission directed the Clerk of the Commission to provide copies of the Order for Comment to the Service List in Case No. PUR-2021-00127; directed Staff to identify other persons or entities that potentially may have an interest in this matter and provide these persons or entities with copies of this Order for Comment; and directed the Director of the Commission's Division of Information Resources to post a copy of the Order for Comment on the Commission's website.

- What additional solutions do utilities plan to implement, or are considering for implementation, to facilitate the interconnection of DER on the distribution system?
  - Are there "best practices" in place in other jurisdictions that the Commission should consider?
  - What additional actions could the Commission take to help facilitate the interconnection of DER on the distribution system?
  - What steps should the Commission take with regard to aggregation of interconnected DERs for possible participation by such aggregations in the PJM Interconnection, L.L.C., wholesale market, per Federal Electric Regulatory Commission ("FERC") Order 2222? Are any such steps best addressed in this docket or in a separate proceeding?
  - Are there any changes to the Regulations Governing Interconnection of Small Electrical Generators and Storage (20 VAC 5-314-10 *et seq.*) ("Interconnection Regulations") or other Commission actions that could enable the usage of IEEE-1547-2018 compliant inverters to facilitate the integration of DER on the distribution system? Are any such changes or actions best addressed in this docket or in a separate proceeding?
  - Are there additional changes that could be made to the Interconnection Regulations that could facilitate the integration of DER on the distribution system? If so, please describe such proposed changes.<sup>3</sup>
- Written comments were received from the following entities on or before August 1, 2022:

Sun Tribe Solar, LLC and Sun Tribe Development, LLC (collectively, "Sun Tribe"); Secure Futures, LLC ("Secure Futures"); Virginia, Maryland & Delaware Association of Electric Cooperatives ("VMDAEC"); Appalachian Power Company ("APCo"); Virginia Electric and Power Company ("Dominion"); Kentucky Utilities Company d/b/a Old Dominion Power Company ("KU-ODP"); Chesapeake Solar & Storage Association and the Coalition for Community Solar Access (collectively, "CHESSA"); and Appalachian Voices.<sup>4</sup> Additionally,

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<sup>3</sup> See Order for Comment at 1-2.

<sup>4</sup> Appalachian Voices stated that its comments were prepared with the assistance of Paul J. Alvarez and Dennis Stephens.

public written comments were received from the following persons: Matthew Meares, on behalf of Sunworks NC LLC ("Sunworks"); Harrison T. Godfrey and Michael Weiss, on behalf of Virginia Advanced Energy Economy ("VAEE"); Chris Gordon, on behalf of EDF Renewables ("EDF"); Hillel Halberstam, on behalf of SynerGen Solar, LLC ("SynerGen Solar"); Harry Warren, on behalf of the Center for Renewables Integration, Inc. ("CRI"); William Giese and Jeremiah Miller, on behalf of Solar Energy Industries Association ("SEIA"); and Laura Gonzalez, on behalf of Clean Virginia.

Collectively, the commenters addressed a significant number of DER interconnection matters, with one or more commenters raising the following issues and concerns:

- streamlining the interconnection application process and placing requisite application materials online ("Application Process");<sup>5</sup>
- utility study timeline periods, which some commenters stated were excessive and failed to meet deadlines set forth in the Interconnection Regulations ("Study Timelines");<sup>6</sup>
- longer than anticipated construction timelines and changing milestone dates ("Construction Timelines");<sup>7</sup>
- a lack of information in interconnection study reports, including insufficient information on timelines and costs ("Lack of Information");<sup>8</sup>
- the cost of interconnection, including the costs associated with equipment upgrades such as the cost of requiring dark fiber-optic cables for direct transfer trip ("DTT") implementation ("Interconnection Costs");<sup>9</sup>

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<sup>5</sup> See, e.g., VAEE Comments at 8-9; Appalachian Voices Comments at 10-11, 27.

<sup>6</sup> See, e.g., Sunworks Comments at 1; EDF Comments at 1; CHESSA Comments at 5; SEIA Comments at 6.

<sup>7</sup> See, e.g., EDF Comments at 1; Dominion Comments at 4; VMDAEC Comments at 6-7.

<sup>8</sup> See, e.g., CHESSA Comments at 9-10; SEIA Comments at 6; Sunworks Comments at 7.

<sup>9</sup> See, e.g., Sunworks Comments at 1-2, 14-15; Appalachian Voices Comments at 16-24; Secure Futures Comments at 2-4; CHESSA Comments at 14; Sun Tribe Comments at 1; VAEE Comments at 7; EDF Comments at 1.

- whether one or more various alternatives to current DTT requirements may be appropriate ("Dark Fiber/DTT");<sup>10</sup>
- better cost transparency, including the receipt of more cost information in the study reports and cost estimates being provided earlier in the study process ("Cost Transparency");<sup>11</sup>
- the potential for one or more cost sharing options, such as cost sharing between developers or between beneficiaries ("Cost Allocation");<sup>12</sup>
- confusion between developers and utilities regarding language in the Interconnection Regulations related to the ability to downsize a project before and after a Feasibility Study ("Material Modification Language");<sup>13</sup>
- various concerns related to dispute resolution aspects of the interconnection study process ("Dispute Resolution Language");<sup>14</sup>
- whether the proof of liability insurance requirement for Level 1 interconnections and net energy metering customers should be eliminated ("Insurance Requirements");<sup>15</sup>
- benefits and potential issues related to flexible interconnection to the grid;<sup>16</sup>
- the need for cybersecurity measures for DERs ("Cybersecurity");<sup>17</sup>

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<sup>10</sup> See, e.g., CHESSA Comments at 14-15, 24-28; CRI Comments at 3-9; Sun Tribe Comments at 1, 5-6; Secure Futures Comments at 2-3, 7; Appalachian Voices Comments at 21, 35; VAAE Comments at 16; Sunworks Comments at 15; EDF Comments at 1; Dominion Comments at 10-11; APCo Comments at 6; KU-ODP Comments at 5.

<sup>11</sup> See, e.g., CHESSA Comments at 10-12, 25; SEIA Comments at 3; Sun Tribe Comments at 1-2; VAAE Comments at 16; Appalachian Voices Comments at 10, 14.

<sup>12</sup> See, e.g., Sunworks Comments at 14; CHESSA Comments at 23; Clean Virginia Comments at 3-4; Sun Tribe Comments at 2-5; VAAE Comments at 7, 17.

<sup>13</sup> See, e.g., Sun Tribe Comments at 2-3, 5; VAAE Comments at 7-8, 17-18; SynerGen Solar Comments at 3; CHESSA Comments at 17..

<sup>14</sup> See, e.g., Secure Future Comments at 5; VAAE Comments at 8, 22; CHESSA Comments at 13, 25-26.

<sup>15</sup> See, e.g., CHESSA Comments at 16-19; SEIA Comments at 17.

<sup>16</sup> See, e.g., VAAE Comments at 20; Appalachian Voices Comments at 24-25; SEIA Comments at 9; APCo Comments at 3-4; KU-ODP Comments at 2-3.

<sup>17</sup> See, e.g., APCo Comments at 4; Dominion Comments at 7; VAAE Comments at 6.

- the potential impacts of FERC Order 2222, which would allow for DER aggregation and participation in wholesale markets;<sup>18</sup>
- the lack of a clear definition of DER and the types of systems covered in the Interconnection Regulations ("DER Definition");<sup>19</sup>
- whether a state-approved list of customer DER equipment and technical attributes is needed;<sup>20</sup>
- the need for accurate modeling of DERs in transmission and distribution planning studies in order to understand potential opportunities and challenges related to bulk power system reliability, and the need for more granular data to develop system models, validate results, and perform real-time and long-term analysis and planning;<sup>21</sup>
- whether performance standards are needed for DERs to ensure reliability is not degraded by DERs being interconnected without meeting reliability requirements ("DER Performance Standards");<sup>22</sup>
- the need for further customer education and compliance;<sup>23</sup>
- net metering-related issues;<sup>24</sup> and
- the level of specialized staffing that may be required by utilities to manage DER projects.<sup>25</sup>

On September 19, 2022, Staff filed its Report. In its Report, Staff reviewed the various concerns raised by the commenters and recommended specific avenues for addressing these

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<sup>18</sup> See, e.g., VM DAEC Comments at 2-4, 10-15; APCo Comments at 3; Dominion Comments at 7-8; KU-ODP Comments at 4; SEIA Comments at 17; VAEE Comments at 24-25; EDF Comments at 1; CHESSA Comments at 28; Sun Tribe Comments at 6; Appalachian Voices Comments at 34-35.

<sup>19</sup> See APCo Comments at 2-4.

<sup>20</sup> See *id.* at 1.

<sup>21</sup> See *id.* at 2-4, 7.

<sup>22</sup> See *id.* at 7.

<sup>23</sup> See, e.g., KU-ODP Comments at 1-2, APCo Comments at 5.

<sup>24</sup> See, e.g., VM DAEC Comments at 8-9; KU-ODP Comments at 4.

<sup>25</sup> See, e.g., VM DAEC Comments at 5-6.

concerns, including revising the existing Interconnection Regulations, establishing working groups, implementing pilot studies, and utilizing existing utility administration and application processes.<sup>26</sup>

NOW THE COMMISSION, upon consideration of this matter, is of the opinion and finds as follows. We concur with Staff that, given the number and complexity of the interconnection-related issues raised by the parties, it is necessary to utilize multiple mechanisms to address these issues.<sup>27</sup> We have determined the following mechanisms should be employed, as described in more detail below: (i) working groups; (ii) a survey performed by Staff; and (iii) a rulemaking. In making our determinations, we have fully considered and weighed all comments presented in this matter in support of each participant's concerns and proposals, including those provided by Staff. The Commission expresses appreciation to all those who submitted written comments.<sup>28</sup>

Working Groups

First, with regard to the concerns raised pertaining to Study Timelines, Construction Timelines, and Cost Allocation, we find that these matters warrant further discussion. Specifically, we find that a working group should be convened and tasked with addressing the above-referenced topics, as well as any potential solutions (including, but not limited to, any proposed pilot programs). To initiate this process, we direct Staff to convene such a working group. The Commission expects this group to meet initially no later than August 1, 2023. Staff

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<sup>26</sup> See Staff Report at 3-52.

<sup>27</sup> See *id.* at 43.

<sup>28</sup> With respect to any issues raised by participants not expressly addressed by the Commission herein, the Commission finds that resolution of such issues is not necessary to the Commission's decision in this proceeding, and the Commission hereby exercises its discretion not to address such for purposes of the instant order.

shall thereafter convene the stakeholder group on an ad hoc basis at its discretion. Within 30 days of the end of each meeting, the working group shall provide an update to the Commission on the issues discussed and any recommendations for the Commission's consideration.

Next, one of the most significant issues raised in this case, which was discussed by a number of commenters, concerns the costs of interconnection, particularly costs related to dark fiber and DTT.<sup>29</sup> We concur with Staff that these topics require further dialogue.<sup>30</sup> Given the scope and complexity of the commenters' concerns, we believe that a working group, separate from the working group initiated above, should be convened and tasked with addressing issues specifically related to Interconnection Costs and Dark Fiber/DTT. We find that issues related to Cost Transparency should also be addressed as part of this working group. To initiate this process, we direct Staff to convene such a working group. The Commission expects this group to meet initially no later than August 1, 2023. Staff shall thereafter convene the stakeholder group on an ad hoc basis at its discretion. Within 30 days of the end of each meeting, the working group shall provide an update to the Commission on the issues discussed and any recommendations for the Commission's consideration.

#### Staff Survey and Filing

We believe that certain issues raised in this case would benefit from the receipt of additional data. We therefore order Staff to survey each investor-owned utility and electric cooperative regulated by the Commission in the Commonwealth (collectively, "Virginia Electric Utilities") for further information on certain topics.

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<sup>29</sup> See, e.g., Sunworks Comments at 1-2, 14-15; Appalachian Voices Comments at 16-24, 35; Secure Futures Comments at 2-4, 7; CHESSA Comments at 14-15, 24-28; Sun Tribe Comments at 1, 5-6; VAEE Comments at 7, 16; EDF Comments at 1; CRI Comments at 3-9; Dominion Comments at 10-11; APCo Comments at 6; KU-ODP Comments at 5.

<sup>30</sup> See Staff Report at 46.

First, with respect to the Application Process, the comments suggest that several utilities are currently pursuing the adoption of online DER interconnection portals.<sup>31</sup> We direct Staff to contact the Virginia Electric Utilities for feedback on the status of such online portals and the information each portal would contain. We further direct Staff to coordinate between the developer community and the Virginia Electric Utilities concerning what information would be helpful to include on the online sites.

Further, with regard to the comments concerning Lack of Information, several commenters recommended that utilities develop or expand hosting capacity maps, which use computer modeling to determine how much generation can be placed at a given point on the distribution grid without causing voltage or thermal issues.<sup>32</sup> Other commenters noted that certain utilities publish a small generator interconnection queue on their websites, which is updated quarterly, and recommended that all Virginia Electric Utilities publish such a report on a monthly, rather than quarterly, basis ("Queue Information").<sup>33</sup> Finally, a commenter recommended that all interconnection reports created since 2015 be made publicly available online ("Report Information").<sup>34</sup> We direct Staff to contact the Virginia Electric Utilities and gather additional data related to: (i) the utilities' current development of new, or plans to expand existing, hosting capacity maps and the anticipated costs of such projects, if known; (ii) whether

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<sup>31</sup> See, e.g., Dominion Comments at 5; KU-ODP Comments at 3; APCo Comments at 2-3.

<sup>32</sup> See, e.g., Sun Tribe Comments at 3; VAEE Comments at 13-14; Appalachian Voices Comments at 13.

<sup>33</sup> See, e.g., Sun Tribe Comments at 4; VAEE Comments at 23; CHESSA Comments at 6, 19.

<sup>34</sup> See Sunworks Comments at 9-10.

any utility objects to the monthly publication of the Queue Information online; and (iii) whether any utility objects to making the Report Information publicly available online.<sup>35</sup>

Additionally, commenters noted that at least one utility has recently published a Guide for Interconnection Parameters for DER and recommended that other utilities publish a similar guide.<sup>36</sup> Staff should contact the Virginia Electric Utilities and determine which utilities currently publish such a guide, the information contained in the guide, and how long it would take any utilities who do not have such a guide to develop and publish one.

Further, several commenters discussed the need for cybersecurity measures for DERs.<sup>37</sup> Staff should solicit input from the Virginia Electric Utilities and developers concerning the adoption of appropriate, risk-based levels of cybersecurity and data management protocols that may aid in grid security without creating overly burdensome requirements for developers.

We direct Staff to prepare and make a filing ("Staff Filing") in this docket summarizing the responses received from its communications with the Virginia Electric Utilities and developers. This Staff Filing shall be filed in this docket on or before August 1, 2023.

Rulemaking

Finally, we find that several issues raised by commenters should be addressed through a rulemaking process that examines certain potential changes to the Interconnection Regulations. We will thus initiate a rulemaking proceeding, in a separate docket, that examines, at a minimum, whether amendments to the Interconnection Regulations on the following topics are needed: Material Modification Language, Dispute Resolution Language, Insurance

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<sup>35</sup> Commenters also expressed concern about the level of detail included in interconnection study reports. We find that such concerns may be best addressed as part of the rulemaking directed below.

<sup>36</sup> See, e.g., Dominion Comments at 5; Sun Tribe Comments at 4.

<sup>37</sup> See, e.g., APCo Comments at 4; Dominion Comments at 7; VAEI Comments at 6.

Requirements for Level 1 Interconnections, Cybersecurity, DER Definition, and DER Performance Standards. In initiating such a rulemaking proceeding to address these issues, the Commission agrees with Staff that regulation reform will likely be a multi-step process. In other words, we recognize that the issues listed above may be ripe for consideration in the directed rulemaking, while other potential changes to the regulations may be better addressed in a future rulemaking proceeding.<sup>38</sup>

Accordingly, IT IS ORDERED THAT:

(1) By August 1, 2023, the Staff shall convene the first meeting of the stakeholder working group established herein to examine Study Timelines, Construction Timelines, and Cost Allocation, and shall convene additional meetings on an ad hoc basis thereafter. Within thirty (30) days of the end of each meeting, the working group shall provide an update to the Commission in this docket on the issues discussed and any recommendations for the Commission's consideration.

(2) By August 1, 2023, the Staff shall convene the first meeting of the stakeholder working group established herein to examine Interconnection Costs, Dark Fiber/DTT, and Cost Transparency, and shall convene additional meetings on an ad hoc basis thereafter. Within thirty (30) days of the end of each meeting, the working group shall provide an update to the

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<sup>38</sup> The Interconnection Regulations may need to be reopened in a separate, future rulemaking for a variety of reasons, such as due to the findings and recommendations of the working groups initiated in this Order, the information received by Staff in its survey of the Virginia Electric Utilities, changes to state or federal law, including but not limited to FERC Order 2222, or further guidance related to the Institute of Electrical and Electronics Engineers' Standard 1547, which is the primary standard that establishes criteria and requirements for interconnection of DER equipment to the power system. See Staff Report at 51-52; *Commonwealth of Virginia, ex rel. State Corporation Commission, Ex Parte: In the matter of revising the Commission's Regulations Governing Interconnection of Small Electrical Generators*, Case No. PUR-2018-00107, 2020 S.C.C. Ann. Rept. 226, 232, Order Adopting Regulations (July 29, 2020).

Commission in this docket on the issues discussed and any recommendations for the Commission's consideration.

(3) On or before August 1, 2023, Staff shall prepare and file its Staff Filing in this docket summarizing the responses received from its survey of the Virginia Electric Utilities.

(4) Within five (5) business days of the filing of this Order with the Clerk of the Commission, Staff shall electronically transmit copies of this Order to those persons and entities previously identified by Staff in this proceeding as potentially having an interest in this matter.

(5) The Director of the Commission's Division of Information Resources promptly shall post a copy of this Order on the Commission's website.

(6) This matter is continued.

Commissioner Patricia L. West participated in this matter.

A COPY hereof shall be sent electronically by the Clerk of the Commission to all persons on the official Service List in this matter. The Service Lists are available from the Clerk of the Commission.