STATE OF VERMONT
PUBLIC UTILITY COMMISSION

Case No. 21-3883-RULE

Proposed creation of Vermont Public Utility Commission Rule Concerning Energy Storage	

COMMENTS OF THE VERMONT DEPARTMENT OF PUBLIC SERVICE REGARDING DRAFT STORAGE RULE

On September 17, 2021, the Vermont Public Utility Commission ("Commission") issued an Order Opening Rulemaking to develop rules governing the installation and operation of energy storage facilities in Vermont. After initial rounds of comments and workshops, followed by a series of webinars, the Commission issued an Order on May 21, 2024, seeking comments from stakeholders on a first draft of the rule. The draft rule provides a sound framework and an appropriate starting point for further consideration. The Vermont Department of Public Service ("Department") offers the following comments, beginning with the questions posed in the Commission's Order.

Question 1: Definitions. Are additional definitions needed? Are the proposed definitions appropriate or in need of modification?

While many of the definitions under draft Rule 9.102 are appropriate and align with related definitions elsewhere, the Department has identified areas where the language departs from statutory provisions and could benefit from additional clarity. The Department defers to the Vermont Agency of Natural Resources ("ANR") as to definition language that may be needed to adequately capture the potential environmental impacts of new construction or distribution upgrades.

"Aggregation" and "Aggregator"

The Department notes that these definitions are different from those now found under 30 V.S.A. § 201 for "Energy storage aggregation" and "Energy storage aggregator." Act 54 of 2021 ("Act 54") incorporated energy storage into Vermont's regulatory framework by adding storage-related definitions to 30 V.S.A. §§ 201 and 8002; setting certain statutory requirements; clarifying aspects of regulatory authority; directing the Commission to incorporate storage in the interconnection rule; and enabling the Commission to adopt and implement rules governing the installation and operation of energy storage facilities of all sizes. In doing so, Act 54 did not directly address non-storage distributed energy resources ("DER") or DER aggregations.

The definitions in the draft rule may be intended to capture only aggregations comprised of or including storage, yet the provisions could be read more broadly to encompass all DER aggregations. Considering the context of the storage rulemaking and the continued uncertainty around the implementation of FERC Order 2222, the Department hesitates to advocate for definitions that may reach significantly beyond energy storage. As such, the Department recommends using the relevant definitions from 30 V.S.A. § 201:

> (5) "Energy storage aggregation" means a virtual resource formed by combining multiple stationary energy storage devices at different points of interconnection on the distribution system.
>
> (6) "Energy storage aggregator" means an entity other than a distribution utility that is operating an energy storage aggregation of 100 kW or greater aggregate nameplate capacity.

The Department submits that these definitions can encompass aggregations consisting of (1) only energy storage devices and (2) multiple energy storage devices in a virtual resource along with other DERs. These definitions also clearly exclude any aggregations which do not include energy storage devices and, in the Department's view, should not fall within the scope of a storage-specific rule. The Department looks forward to hearing other stakeholders' perspectives on this issue and recognizes that the definitions may need further refinement. While the Department does not see the storage rule in its current form as the appropriate place to address other DERs or DER aggregations, it will likely be necessary to address these in some way once more is known regarding the implementation of FERC Order 2222 and its implications for Vermont.

<u>Question 2: Systems of less than 100 kW. Is the application process proposed for smaller systems sufficient? If not, please explain and propose additional or different language.</u>

The Department supports the requirement that systems under 100 kW file an interconnection application with the interconnecting utility and go through the Rule 5.500 process. The Commission's standardized Rule 5.500 application form, namely the "Rule 5.500 Application for Interconnection of Distributed Energy Resources Not Greater than 150 kW,"[1] could be used for this purpose and would help to ensure adequate information collection. The Department sees this as a beneficial approach, provided that the utilities (a) have integrated these forms into their

[1] https://puc.vermont.gov/document/application-interconnection-distributed-energy-resources-not-greater-150-kw

workflow or have the capability to do so, and (b) include clear instructions on their respective websites for applicants to understand and fulfill the application requirements.

Given the language of the draft rule, it is the Department's understanding that the requirements of Rule 9.200 would apply to all sub-100 kW systems, including those installed pursuant to distribution utility retail tariffed, pilot, and Tier III storage programs (e.g., Energy Storage System, Bring Your Own Device, and Energy Storage Access programs). The Department supports uniform applicability here, and respectfully requests clarification that systems under a utility-sponsored umbrella will be treated the same as any other system under Rule 9.200, including the requirement for individual interconnection applications.

In addition to the requirement for smaller systems to apply for interconnection, the draft rule includes provisions under Rule 9.400 that apply to all energy storage facilities – in particular, 9.402: Safety Standards for Energy Storage Facilities. To clarify that these requirements apply to systems under 100 kW, the Department recommends that Rule 9.200 include an internal cross-reference to the applicable requirements under Rule 9.400. As an additional step, it may be helpful to amend the Rule 5.500 application form to include a reference to the requirements of Rule 9.400. In the absence of a modification to the form, the Department recommends that utilities include a reference on their websites where the form is found, with language similar to the following:

> All energy storage facilities must comply with the relevant provisions of Public Utility Commission Rule 9.400, including safety standards and requirements for operations, metering, and telemetry in coordination with the host utility.

In contrast to small net-metering systems, energy storage facilities less than 100 kW are not required to register with the Commission or apply for a Certificate of Public Good ("CPG"): there is no application to or authorization from the Commission. As there is no CPG or other permitting document which might list the relevant requirements, the Department submits that it would be prudent to reiterate the Rule 9.000 requirements for systems less than 100 kW in the place where an application is required.

<u>Question 3: Siting provisions for systems of 100 kW up to 1 MW. These provisions treat battery systems differently based on their location, and differentiate non-battery systems from battery systems. Are these provisions appropriate? If not, please explain and provide alternative proposals.</u>

The Department generally supports the application categories and requirements as defined by the Commission in draft rule 9.000. As discussed in its comments of March 11, 2022, the

Department notes that non-battery energy storage technologies are still evolving – and their potential impacts or implications under the 30 V.S.A. § 248(b) criteria are not yet clear. As such, the draft rule is appropriately cautious about an over-simplified review process for non-battery projects. While time and experience may show that a non-battery storage facility can be built inside an existing building with similar potential impacts to a battery storage facility, it is prudent to require a more exacting review as the default at this time.

The Department notes that draft Rules 9.302(C) and (D) provide a list of criteria that must be addressed in a petition, while Rule 9.303(C) lists the criteria that are conditionally waived. For consistency and clarity, the Department recommends that Rule 9.303 follow the same format as 9.302 providing an affirmative list of criteria to be addressed. In addition, the Department recommends the following adjustment to the required contents for petitions under draft Rules 9.302 and 9.303:

> [M]ust include ~~a letter from the interconnecting utility~~ as part of the application either the relevant Rule 5.500 study results or a letter from the interconnecting utility indicating the absence or resolution of any interconnection issues.

This change would add flexibility and ensure that interconnection studies are not excluded from petitions unnecessarily. Finally, with respect to the notice requirements in draft Rule 9.302, when an energy storage system is proposed to be installed in a public building as defined in 20 V.S.A. § 2730 the Department recommends that the Division of Fire Safety ("DFS") receive a copy of the Advance Submission and notice of the Petition.

Question 4. For the systems that qualify for expedited treatment, a CPG must issue on the 46th day following the filing of a petition if a hearing is not needed. In such cases, should the Commission develop a standard set of conditions applicable to all such projects? If yes, please propose appropriate conditions and describe how they should apply to a project (e.g., issuance of a physical CPG for each project, adoption of a general CPG or permit, or inclusion in the rule).

For projects between 100 kW and 1 MW which must obtain a CPG, the Department recommends that the Commission incorporate standard conditions into the issuance of a physical CPG for each project. This would be consistent with the Commission's current approach to permitting and would allow for flexibility to modify the conditions on a case-by-case basis if needed. The Commission has in the past required compliance with filed project plans and relevant rules in addition to certain other standard conditions, and that practice continues to be appropriate for expedited storage projects. The Department has compiled a list of example conditions as a starting point for key assurances, and is interested in any feedback as to additions, deletions, or modifications:

- Site preparation, construction, operation, and maintenance of the Project must be in accordance with the plans and evidence submitted in this proceeding. Any material deviation from these plans or a substantial change to the Project must be approved by the Commission. Failure to obtain advance approval from the Commission for a material deviation from the approved plans or a substantial change to the Project may result in the assessment of a penalty pursuant to 30 V.S.A. §§ 30 and 247.

- Before beginning site preparation, construction, operation, maintenance, or decommissioning of the Project, the CPG Holder must obtain all other necessary permits and approvals. Site preparation, construction, operation, maintenance, and decommissioning of the Project must be in accordance with such permits and approvals, and with all other applicable regulations, including those of the Vermont Agency of Natural Resources and Commission Rule 9.000.

- Before operating the Project, the CPG Holder must enter into an interconnection agreement with [the utility] that conforms to the requirements of Public Utility Commission Rule 5.500. The CPG Holder is responsible for the cost of electrical system upgrades reasonably necessary to implement interconnection of the Project and such other costs appropriately submitted to the CPG Holder in accordance with Commission Rule 5.500. Construction and operation of the Project must be in accordance with the interconnection agreement.

- The CPG Holder must notify local emergency responders of the project and provide emergency response training upon request.

- The CPG Holder must remove the facilities authorized by this CPG once they are no longer in service and must restore the site to its condition before installation of the facility to the greatest extent practicable, consistent with the terms and conditions of its proposed decommissioning plan, as modified by the Commission.

- Any removal of the facilities authorized by this CPG, including the transport and recycling or disposal of components, shall be carried out in accordance with best practices and all applicable State and Federal waste management regulations.

- This Certificate of Public Good may not be transferred without prior approval of the Commission.

<u>Question 5.</u> <u>Should an energy storage rule contain any additional interconnection requirements beyond those set forth in Commission Rule 5.500? If yes, why?</u>

In the Department's view, the interconnection requirements of Rule 5.500 are sufficient to address the anticipated impacts of energy storage systems. The assumptions used in a study or a less formal evaluation, which may be documented in and required by an interconnection agreement, are important to an overall assessment of the electrical system impacts from charging and discharging. It appears that Rule 5.503(B) provides a utility the option to establish study parameters and operational requirements for an energy storage facility, that do not unreasonably subject the facility to system upgrades for conditions under which it will not operate.

Question 6. What are the correct safety codes or standards that should be contained in an energy storage rule? Should they vary based on the size, location, or type of facility?

The safety codes and standards listed in Rule 9.402 and Rule 5.520 (incorporated by reference into Rule 9.401) are essential and necessary. These codes or standards should not vary based on the size, location, or type of facility. As noted in prior comments, the list of additional codes and standards relevant to energy storage projects is significant and, at this point in the deployment of storage technologies, ever-changing. This is true both in the number of standards and the complexity of associated requirements. The Department remains open to feedback on additional standards that may be appropriate at this time, and recommends periodic review to ascertain the need for updates in the future. As a proactive step, the Department recommends including language in the storage rule which mirrors the provisions of Rules 5.520 and 5.520(P) addressing (1) revisions and (2) codes or standards ordered by the Commission:

5.520 Codes and Standards

> When any listed version of the following codes and standards is superseded by a revision approved by the standards-making organization, then the revision will be applied where these codes and standards are referenced in this Rule. Applications that are date-and-timestamped on or before six months after the revision date may follow the previous version of the standard, unless an immediate threat to safety and reliability exists that requires the retrofit of all similarly situated equipment. Applications that are date-and-time-stamped later than six months after the revision date must follow the revised standard.
>
> (P) Any other code or standard ordered by the Commission.

Question 7. 30 V.S.A. 8011(c) allows the rule to contain provisions that address the respective duties of interconnecting utilities and energy storage owners or operators, including a mechanism for a resolution of disputes. Are these topics appropriate for inclusion in a rule? Are they more appropriately addressed in utility tariffs? If you believe they should be addressed in a rule, please provide proposed language.

The draft rule contains provisions under Rule 9.403 requiring storage facilities and aggregations to coordinate with the host distribution utility, and to follow metering and telemetry requirements established by the host utility. The Department supports these provisions and recommends their inclusion in the rule. To help ensure appropriate recordkeeping, the Department also recommends an additional duty on the part of interconnecting utilities, similar to that found under Rule 5.133(B), as follows:

> Each interconnecting utility must maintain current records of the number, individual capacity, cumulative capacity, and disconnections of energy storage facilities and energy storage aggregations installed within its service territory and make those records available to the Commission and Department upon request.

As to dispute resolution, the existing interconnection rule includes a mechanism under Rule 5.516(F):

> (F) Dispute Resolution. If a dispute arises at any time during these procedures, either the Interconnection Requester or the Interconnecting Utility may seek immediate resolution by written petition to the Commission, with copies to the other party and the Vermont Department of Public Service, stating the issues in dispute. Pursuit of dispute resolution will not affect an Interconnection Requester's Application with regard to consideration for interconnection, nor position in an Interconnection Queue.

Beyond siting-related disputes, which can be resolved through the petition process for facilities seeking a CPG, the Department anticipates that most disputes within the Commission's jurisdiction can be addressed through Rule 5.516(F). The Department therefore recommends that the storage rule point to the existing dispute resolution process under the interconnection rule.

<u>Question 8. What, if any, provisions should a rule contain on the topic of energy aggregators and aggregations? Should the rule address only energy storage aggregators and aggregations, or other aggregators and aggregations as well? Should aggregators be required to obtain a Section 231 CPG? If yes, does the Commission have the authority to impose such a requirement in a rule?</u>

The Department recommends that the storage rule be limited to aggregations comprised of or including storage systems – and even then, it would be wise to take a measured approach. There will likely be a need to address all aggregations in more substance as the implementation of FERC Order 2222 progresses, once there is some clarity surrounding (1) compliance tariff provisions to take effect in ISO-NE, (2) which Vermont utilities, if any, are required to or desire to participate, and (3) what further action is required of Vermont utilities or regulators. There may be a need for a more expansive set of rules to address those items, but it is still too soon to know. It is the Department's understanding that tariff developments at ISO-NE and FERC are still ongoing. In the meantime, it remains difficult to assess the impacts and implications of Order 2222 for Vermont and the New England region.

Nonetheless, energy storage is at a point of technological maturity and is already participating in the wholesale markets. As rulemaking proceedings can take time, it is prudent to establish basic provisions addressing potential aggregations comprised of or including storage. In the Department's view, the provisions under draft Rule 9.405 likely strike the right balance, although as discussed above at Question 1, the Department recommends that the relevant definitions should be aligned with those found in 30 V.S.A. § 201.

As to 30 V.S.A. § 231: the statute itself includes a provision requiring energy storage aggregators who are not Vermont distribution utilities to obtain a Section 231 CPG.[2] Considering this provision alongside the language of 30 V.S.A. § 8011, the Department submits that it is well within the Commission's authority to include language in the storage rule mirroring or referencing the statutory requirement for a Section 231 CPG.[3]

<u>Question 9. What information do interconnecting utilities need to accommodate aggregations? Should a CPG petition include a notice or information on whether the storage system is part of an aggregation? Do utilities prefer that this information be included in the CPG petition process or in the interconnection application process?</u>

This question appears primarily directed at distribution utilities, and the Department looks forward to hearing their perspective. At this time, the Department offers some preliminary thoughts for further consideration. The scope of the question appears to encompass resources beyond storage, under the draft definition for aggregations. As discussed above, the Department recommends that the storage rule be limited to aggregations comprised of or including storage systems. Broader questions relating to aggregations may be better addressed as part of a proceeding on DER aggregations once there is more clarity on the implementation of Order 2222 in New England.

As an additional note, it is likely that aggregations could include storage systems of less than 100 kW which are not required to seek a CPG. Under FERC Order 2222, a DER that is part of an aggregation can be smaller than 100 kW: the minimum size for an aggregation itself may vary

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[2] *See* 30 V.S.A. § 231(c) ("An energy storage aggregator that operates an energy storage facility is subject to this section only if the aggregator is not a retail electric provider.").
[3] *See* 30 V.S.A. § 8011(c)(4) (providing authority for the Commission to adopt rules governing "energy storage aggregators").

but is not to exceed 100 kW.[4] As such, requiring notice in a storage CPG petition that the facility will be part of an aggregation may be a good step, but may not capture all participating storage systems. Adding a field to the interconnection application form capturing that information may be more useful, as storage systems of all sizes are required to apply for interconnection pursuant to Rules 9.000 and 5.500.

Question 10. Should a rule establish required practices for the operation of aggregations? If yes, please explain and propose language.

The Department does not recommend additional requirements in the storage rule for the operation of aggregations at this time. As discussed above at Question 8, the Department anticipates a need to address these considerations (among others) for all aggregations once there is sufficient clarity regarding the implementation of FERC Order 2222. While it is important to begin collecting information and setting basic requirements, the ongoing developments at FERC and ISO-NE weigh against moving too far ahead. From the Department's perspective, Vermont regulators and stakeholders will be in a better position to evaluate these issues at a later date.

Question 11. Should the rule contain a provision directing that petitions for Section 248 certificates of public good from non-qualifying facility and non-utility energy storage facility developers also include a request for a Section 231 certificate of public good? If yes, please provide proposed language.

This question may be a topic for further consideration, and the Department would welcome the opportunity to provide additional thoughts after reviewing any responses from other stakeholders. With that said, the Department currently finds reason to support the continued application of Section 231 for non-qualifying facility and non-utility energy storage facility developers. In past cases involving merchant battery energy storage facilities, petitioners have requested CPGs under Section 231. The Commission has routinely granted the requests and has also approved *de minimis* regulation – exempting the petitioners from regulation under 30 V.S.A. §§ 107–109 considering their operations as competitive suppliers of energy storage services without retail ratepaying customers.

Act 54 of 2021 codified the exemptions from Sections 107–109, adding a provision to 30 V.S.A. § 209 which states: "Except where owned by a retail distribution utility, an energy efficiency utility, or the Vermont Electric Power Company, Inc., competitive suppliers of energy

[4] Order 2222, 172 FERC ¶ 61,247, at 138-141 (Sept. 17, 2020).

storage services that do not serve retail customers shall be exempt from sections 107, 108, and 109 of this title."[5] Act 54 also amended Section 231 at the same time – but did not include a similar exemption.[6] Given the specific nature of the statutory changes under Act 54, the Department finds it reasonable to conclude that the Legislature intended Section 231 to remain applicable to non-qualifying facility, non-utility storage developers.[7]

The Department recommends a provision under Rule 9.300 requiring that petitions include a request for a Section 231 CPG, and offers the following language as a starting point for consideration:

> Petitions under this Rule 9.300 must include a request for a Certificate of Public Good pursuant to 30 V.S.A. § 231, unless the petitioner is a regulated electric utility or the proposed energy storage facility is a Qualifying Facility within the definitions contained in 18 C.F.R. Part 292 and 30 V.S.A. § 209(a)(8).

<u>Question 12. Any other relevant comments or suggestions consistent with 30 V.S.A. §§ 248(u) and 8011.</u>

The draft rule currently requires all energy storage facilities subject to approval under Section 248 to follow the provisions of Commission Rule 5.900 for decommissioning. As discussed in comments filed on March 11, 2022, the Department supports using the structure and substance of Rule 5.900 – though some storage-specific adaptation may prove beneficial. Under Rule 5.904, the requirement that non-utility-owned facilities "shall be removed once they are no longer in service, and the site shall be restored to its condition prior to installation of the facility to the greatest extent practicable" is currently applicable to generation facilities with a capacity of 150 kW and greater, while facilities over 500 kW must also provide a cost estimate and letter of credit or a Commission-approved equivalent.[8]

At this point in the deployment of storage resources, the Department supports applying the cost estimate and security requirements of Rule 5.904(B) at its current threshold. At the smaller end of the spectrum, however, the Department continues to consider whether it may be appropriate to adjust the 150 kW threshold under Rule 5.904(A) down to 100 kW for storage.

[5] 30 V.S.A. § 209(k)
[6] *See* Public Act No. 54 (2021).
[7] This conclusion is bolstered by the addition of storage-specific language in 30 V.S.A. § 203 stating that the Commission shall have jurisdiction over "[a] company engaged in the . . . storage . . . of gas or electricity . . . to be used ultimately by the public." *See* 30 V.S.A. § 203(1); *see also* 30 V.S.A. § 231(a) (requiring a determination that the ownership and operation of a business "over which the [Commission] has jurisdiction" will promote the general good of the State).
[8] See Commission Rules 5.904(A), (B).

This would align with the 100 kW threshold for storage facilities subject to Section 248 review.[9] The storage rule could accomplish this by adding additional language stating:

> Notwithstanding the minimum size threshold established for generation facilities, non-utility-owned energy storage facilities with a capacity equal to or greater than 100 kW must follow the requirements of Rule 5.904.

The Department sees this as a prudent adjustment but remains open to stakeholder feedback and any considerations that may weigh against the change.

Decommissioning requirements and proper disposal for sub-100 kW systems may also be appropriate to address in the storage rule or, if precluded by the exemption from Section 248, through requirements placed on utilities and aggregators to ensure that systems under their oversight have an end-of-life plan. Additional information from the distribution utilities on their current requirements and plans for sub-100 kW systems in their battery programs would be useful in advancing this discussion.

The Department appreciates the Commission's extensive work in drafting this rule and the opportunity to provide comments.

DATED at Montpelier, Vermont, this 12th day of July 2024.

Respectfully Submitted,
VERMONT DEPARTMENT OF PUBLIC SERVICE

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[9] 30 V.S.A. § 248(u).