FERC ORDER 2222 & DER POLICY AND IMPLEMENTATION REPORT

March 2025

CURRENT NEWS & DEVELOPMENTS

Latest Developments

NAESB DER Activities

KEY ISSUES ANALYSIS

Aggregation Registration & Review

DER Aggregator Registration

DER Aggregation Registration

EDC DER Review

State Role in DER Aggregation & Review

Summary

TRACKER TIPS & HIGHLIGHTS

CURRENT NEWS AND NEW DEVELOPMENTS

Summary of the latest developments in FERC Order 2222 and DER policy implementation

FERC and several states took action on distributed energy resource (DER) policy, the implementation of virtual power plants (VPPs), and FERC Order 2222 in the last several months. A summary of the actions is listed below.

RTO/ISO Order 2222 Implementation:

- MISO submitted its third compliance filing to FERC on March 17, 2025. This compliance filing addresses two outstanding issues: removal of a 10 MW minimum threshold in the review of physical withholding by market monitors, and the addition of a requirement that Electric Distribution Companies (EDCs) must inform DER aggregators when DER operation is overridden by the EDC. [LINK]
- MISO continues to work on FERC Order 2222 implementation through its DER Task Force (DERTF). On February 18, the DERTF and the Organization of MISO states conducted an Order 2222 Coordination workshop. [LINK]

State FERC Order 2222 Implementation:

- The Maryland PSC requested comment on February 4, 2025 in docket (Case 9778) on several non-consensus issues associated with FERC Order 2222 and virtual power plant policies. The PSC also

requested comment on general FERC Order 2222 issues. Comments were received by March 5, 2025. [LINK]

- Following a Technical Conference (link to video recording below) to address implementation issues related to FERC Order 2222 hosted by the Staff of the New Jersey Board of Public Utilities (NJBPU) on January 17, 2025, Staff is currently reviewing and synthesizing stakeholder feedback and planning next steps for 2222 implementation. NJBPU Staff intends to ensure that any state level rules remove potential barriers to wide-scale DER and DERA deployment while also ensuring they don't compromise grid reliability or put undue burdens on ratepayers. Staff is expected to provide stakeholders with more information soon regarding next steps. [LINK]

Other DER Policy Developments:

- In an Order issued February 5, 2025, the Public Utilities Commission of Ohio (PUCO) requested comments and replies regarding proposed changes to interconnection rules by March 7, 2025, and March 28, 2025, respectively. Proposed substantive changes include proposing a process for reviewing and approving utilities' technical interconnection and interoperability requirements, adopting the IEEE 1547-2018 standard, and implementing timeframes for Level 3 projects that will enhance efficiency and transparency for the interconnection process. [LINK]
- In New York's Grid of the Future proceeding (Case 24-E-0165), the Staff of the Department of Public Service (DPS) has been granted an extension until March 31, 2024, to file the first iteration of the Grid of the Future Plan required by the NYDPS's Order Instituting Proceeding issued April 18, 2024. [LINK]

NAESB DER Activities

For several years now, the North American Energy Standards Board (NAESB) has been engaged in support of the industry's integration of distributed energy resources (DERs) and DER aggregations through standards development, with several projects recently coming to fruition. In December 2024, the NAESB Base Contract for the Sale and Purchase of Distribution Grid Services from DER Aggregations became available for industry use. Developed at the request of the U.S. Department of Energy, the NAESB standard contract supports bilateral transactions for distribution grid services subject to state or local jurisdictions by establishing standardized terms and conditions intended to add efficiency and certainty to the negotiation process between distribution utilities and DER aggregators. At the recommendation of participants, the standards effort also included the development of an accompanying agreement to help facilitate contract negotiations between the distribution utility and DER aggregator before the aggregator

has completed the utility registration process. Over 80 individuals representing electric utilities, ISOs/RTOs, DER aggregators, and the National Association of Regulatory Utility Commissioners participated in NAESB's consensus-based process to develop the standardized contract, helping to ensure that the included baseline provisions represent viewpoints from a variety of stakeholder perspectives. Now that the NAESB Base Contract for the Sale and Purchase of Distribution Grid Services from DER Aggregations is finalized, NAESB will continue work in this area to develop technical standards to enable the industry to conduct transactions under the digitalized version of the contract utilizing technologies such as distributed ledger.

Also, in response to a request submitted by the U.S. DoE, jointly with Lawrence Berkeley National Laboratory and Pacific Northwest National Laboratory, NAESB developed standards that define a common list of grid services to help support greater consistency in electric market interactions and communication exchanges by grid-edge resources. Included in the most recent publications of the NAESB Business Practice Standards applicable to the wholesale electric and retail markets, the standards can enable easier comparison by regulators of market information regarding the use of grid services across multiple jurisdictions as well as assist participants in identifying which types of market services their resource(s) may be able to provide. Building on these recent efforts, NAESB has plans to undertake additional standards development intended to promote interoperability for the industry in the integration of registries and other tools that can facilitate access to DER and DER aggregation data as well as DER management systems. NAESB leadership anticipates initiating work in this area during the 2nd Quarter 2025.

The NAESB Base Contract for the Sale and Purchase of Distribution Grid Services from DER Aggregations can be accessed by NAESB members here [LINK]. Non-members can gain access by contacting the NAESB Office (naesb@naesb.org, (713) 356-0060).

Key Issues Analysis

Aggregation Registration and Review

The primary rationale for FERC Order 2222[1] is to allow DER aggregations to directly participate in RTO/ISO wholesale markets. In order to participate in these markets, FERC directed RTOs/ISOs to register DER aggregations as a market participant and to allow DERs to be combined into aggregations. Since the DERs are located on the distribution system, FERC Order 2222 requires distribution utilities to review the DERs in an aggregation to assess whether they are capable of participating in the aggregation and do not cause any safety and reliability concerns.

The FERC Order 2222 aggregation registration and review process requires multiple steps. Prior to directly participating in wholesale markets, DER aggregators (DERAs) must sign market participation agreements with RTOs/ISOs. FERC directed the RTOs and ISOs to not deviate from their general resource and market participation registration requirements unless necessary to reflect physical parameters associated with DER aggregations.[2] Once a DERA is confirmed as a market participant, it can register an aggregation of DERs or multiple DER aggregations. As part of this registration process with an RTO/ISO, a DERA identifies the set of DERs that will comprise an aggregation. A core part of this registration review process is the review of the participation of individual DERs in a DER aggregation by electric distribution companies (EDCs).

The key aspects of registration and review, particularly the role state and local regulatory authorities can play in these processes, are reviewed below, and the MISO process is used to illustrate it. Rather than using multiple RTO/ISO examples in this report, we will utilize the MISO example throughout.

It is important to draw a very clear distinction between the EDC interconnection process and the review of DER aggregations in this process. Any DER that requires an interconnection agreement must have completed that process with the EDC prior to being considered as a resource that can be utilized by an aggregator in a DER aggregation. The individual DER reliability review that is considered in the interconnection process is not part of the process for registration of a DER aggregation – only the potential incremental impacts of participating in an aggregation are reviewed.

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[1] Final Rule, Participation of Distributed Energy Resource Aggregations in Markets Operated by Regional Transmission Organizations and Independent System Operators, Docket No. RM18-9-000, 172 FERC ¶ 61247 (September 17, 2020) (FERC Order 2222) https://elibrary.ferc.gov/eLibrary/filedownload?fileid=020A059C-66E2-5005-8110-C31FAFC91712.

[2] FERC Order 2222, P 237.

DER Aggregator Registration

The first step in DER aggregation registration is for the DERA to register as a market participant. The contractual relationship between an RTO/ISO and a party representing assets in wholesale markets is generally included and specified in the RTO/ISO's open access tariff. With respect to DERAs, FERC Order 2222 requires each RTO/ISO to revise its tariff to include a standard market participation agreement that defines the DERA's role and responsibilities and its relationship with the RTO/ISO, which an aggregator is required to execute before it can participate in the RTO/ISO markets.

All of the RTOs and ISOs have implemented this requirement. For example, in MISO's FERC Order 2222 compliance, DERAs are required to execute the Market Participant Agreement to participate in MISO's markets. The relationship with the DERA as a Market Participant is similar to any other relationship between MISO and Market Participants that represent multiple assets in MISO's markets today, in that MISO does not have a direct contractual relationship with the individual assets represented by the DERA. Each RTO/ISO included additional DER aggregator-specific requirements in the registration process. For example, as part of their registration as market participants, MISO also requires DERAs to affirm that they are in compliance with state and local rules.[3] Therefore, as states determine their requirements, the aggregators will also be subject to the rules set forth in each state.

DER Aggregation Registration

Once a DERA is a market participant, the DERA must then register (or enroll) their DER aggregation(s) with the RTO/ISO. While the processes will differ among the RTOs and ISOs, the processes generally follow this following sequence: 1) the DERA submits its aggregation, 2) the RTO/ISO reviews the aggregation submittal for completeness, 3) EDCs are then provided the ability to review the DER aggregation to see if the DERs within the aggregation are capable of participating in an aggregation or if the DERs may cause safety or reliability problems, 4) state or local regulator review, and finally 5) the RTO/ISO may review transmission impacts of the DER aggregation.

An example of the DER aggregation and review process is shown in Figure 1. In its compliance proposal, MISO developed a multistep process that begins with a DERA enrolling its DER aggregation – termed a Distributed Energy Aggregated Resource (DEAR) in MISO – with MISO. MISO will take 10 days to review the DER aggregation enrollment to ensure it is complete, which typically includes the full list of DERs that comprise the aggregation. If an enrollment is deemed complete, then the DER aggregation is then subject to review by EDCs and state and local regulators (or Relevant Electric Retail Regulatory Authorities (RERRAs)).

[3] Please see the January Tracker report for a discussion of state licensing of DERAs.

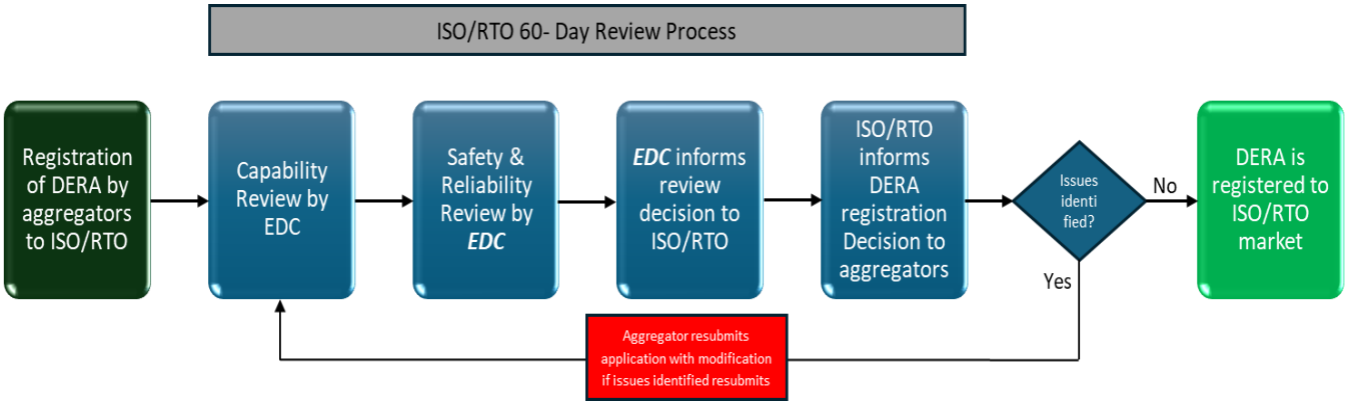

Figure 1 – Illustrative RTO/ISO Registration and Review Process

EDC DER Review

The next step in the DER aggregation and review process is the EDC review of the DERs that are included in the aggregation. As specified in FERC Order 2222, the Commission required each RTO/ISO to modify its tariff to incorporate a comprehensive and non-discriminatory process for timely review by a distribution utility of the individual DERs. In particular, FERC directed each RTO/ISO to "coordinate with distribution utilities to develop a distribution utility review process that includes criteria by which the distribution utilities would determine whether (1) each proposed distributed energy resource is capable of participation in a distributed energy resource aggregation; and (2) the participation of each proposed distributed energy resource in a distributed energy resource aggregation will not pose significant risks to the reliable and safe operation of the distribution system."[4] In FERC Order 2222-A, the Commission directed that these reviews take no longer than 60 days.[5] FERC also clearly stated in FERC Order 2222 that EDCs do not have a larger decision-making role to reject or veto the participation of a DER in a DER aggregation.[6] FERC expressed concern that such veto power could create a barrier to DER aggregation.

As directed by FERC, and discussed above, the EDC DER Review must include two components: a capability review and a safety/reliability review. The capability review is intended to examine whether a DER is already participating in another retail or wholesale program that would limit participation in a DER aggregation or whether participation in a DER aggregation would cause a DER to be double counted. For example, a customer or its associated DER may be on a tariff, such as net energy metering, that disallows or restricts participation in another program.

[4] FERC Order 2222 at P292.
[5] FERC Order No. 2222-A, Order Addressing Arguments Raised on Rehearing, Setting Aside Prior Order In Part, and Clarifying Prior Order in Part, Docket No. RM18-9-002, 174 FERC ¶ 61,197 (March 18, 2021) (FERC Order 2222-A), P72
[6] FERC Order 2222 at P 298.

The second component relates to safety and reliability. During the 60-day review period, EDCs can review whether the participation of a DER in a DER aggregation could create safety and reliability concerns, risks, or impacts on the distribution system. As FERC stated in Order 2222, "if a distribution utility determines during the distribution utility review process that a distributed energy resource operated as part of an aggregation may increase voltage above acceptable limits or create potential equipment overloads, the distribution utility should have the opportunity to alert the RTO/ISO and recommend removal of that distributed energy resource from the distributed energy resource aggregation."[7] FERC also required that the EDC provide written explanation for any recommended DER removal from a DER aggregation. To comply with this requirement, EDCs should assess DER participation based on different use cases, participation models, and penetration levels. In addition, requirements in the EDC review and any necessary impact studies should align with the expected dispatch of the DER and the DER aggregation.

It is important to note here that while individual DERs were studied and approved for interconnection during their interconnection process review, this process allows the EDC to review the 'group or aggregation' of DERs. As these DERs will now be operated as a group instead of a more randomized individual set of operational parameters, their aggregated operational effect on the distribution system could be quite different, and the EDC must have the opportunity to consider those effects.

While the specific details differ somewhat,[8] all of the RTOs and ISOs proposed capability and reliability reviews in their compliance proposals. FERC largely accepted these processes, but did request that the criteria used during these reviews be included in the RTO/ISO tariffs. As an example of an RTO/ISO process for DER Aggregation Review, Figure 2 presents MISO's detailed draft of a diagram of the interactions between processes, roles of key parties, and the timing of reviews. EDCs and state regulators will also need to consider developing review processes, particularly the use of tools or platforms that routinize the review process (see the associated call-out box on DER review).

The length of the maximum review period became an issue in RTO/ISO compliance and FERC orders on compliance. Several RTOs and ISOs proposed adding additional review steps that extended the review period. For example, PJM proposed that a pre-registration period occur prior to the 60-day EDC review period, in which the DER Aggregator obtains and verifies certain location and data information in coordination with the applicable electric distribution company and Transmission Owner. In its PJM Order 2222 compliance order (and in other RTO/ISO compliance orders), FERC clearly stated that the 60-day review period is the maximum period allowed and that additional pre-registration or post-reviews conducted by EDCs outside of the 60-day period cannot occur.[9] In its compliance with this directive, MISO

[7] FERC Order 2222, at P 297.
[8] For example, MISO incorporated an explicit regulatory double-counting review step.
[9] E.g., PJM Interconnection, L.L.C., Order on Compliance Filing, 182 FERC ¶ 61,143. At P 300.

revised its earlier proposal to explicitly direct that all the reviews, including a double-counting review by regulators, occur within the 60-day period. Figure 2 illustrates this timing at MISO.

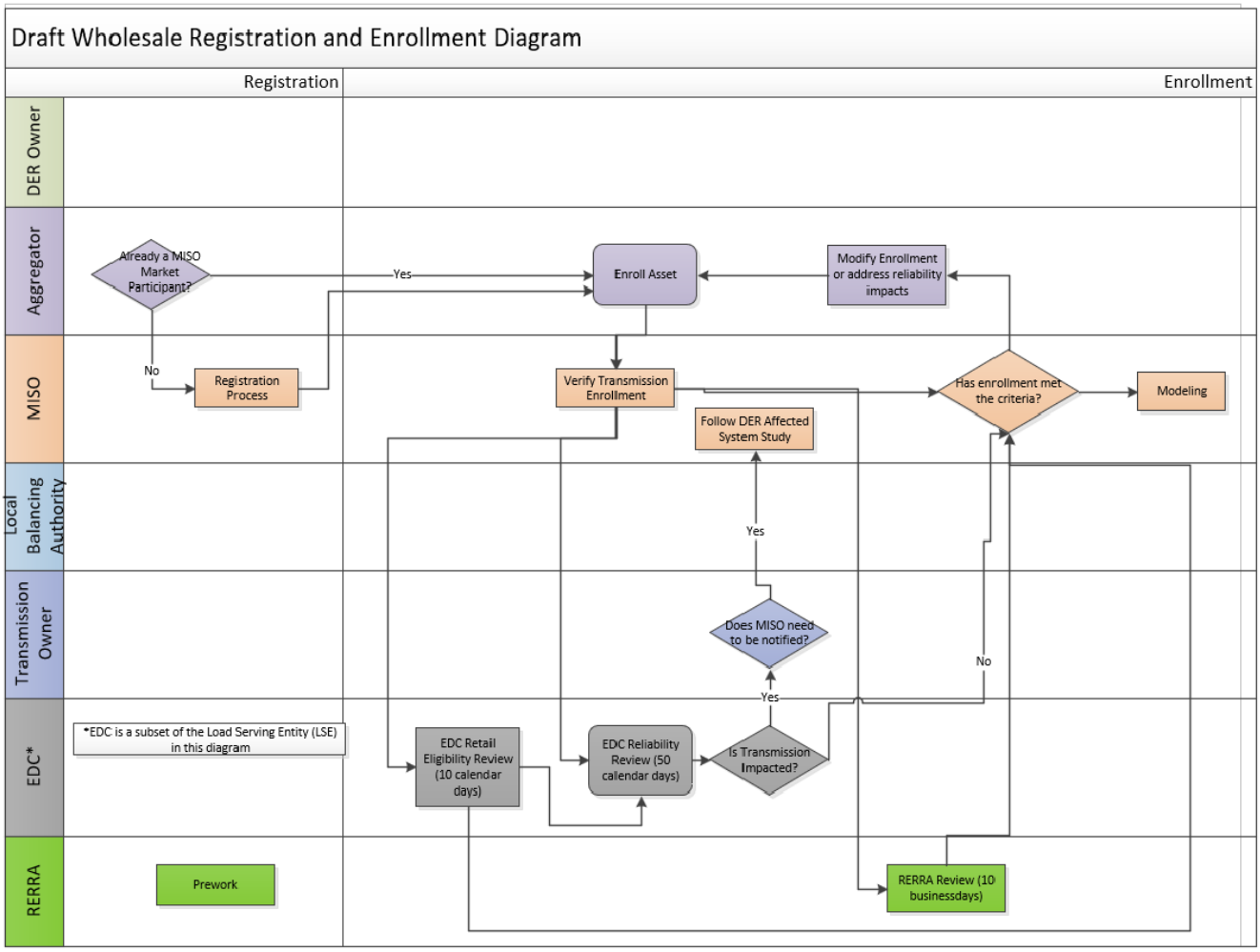

Figure 2 – MISO Draft DER Review Process Diagram[10]

As has been pointed out in most of the forums for FERC Order 2222 implementation, regulators do not typically engage in 'operational' aspects of day-to-day operation of the utility or market. As such, it will be important to recognize that rules governing double counting or dual participation in utility programs and ISO markets will need to be clearly understood and documented to allow tools or systems to support this functional automatically rather than placing this new requirement on commissions who do not have the staff to support this type of activity.

[10] MISO, DERTF, Order 2222 Breakout, February 18, 2005.

A DER Registry Can Support DER Registration and Review

As an example of a tool that can support the approval and review processes, the Collaborative Utility Solutions non-profit DER Registry is used here. To accommodate DER aggregations, there will be multiple steps and parties involved at the RTO/ISO level and at the state level. As the following graphic demonstrates, the approval and review process follows a general flow.

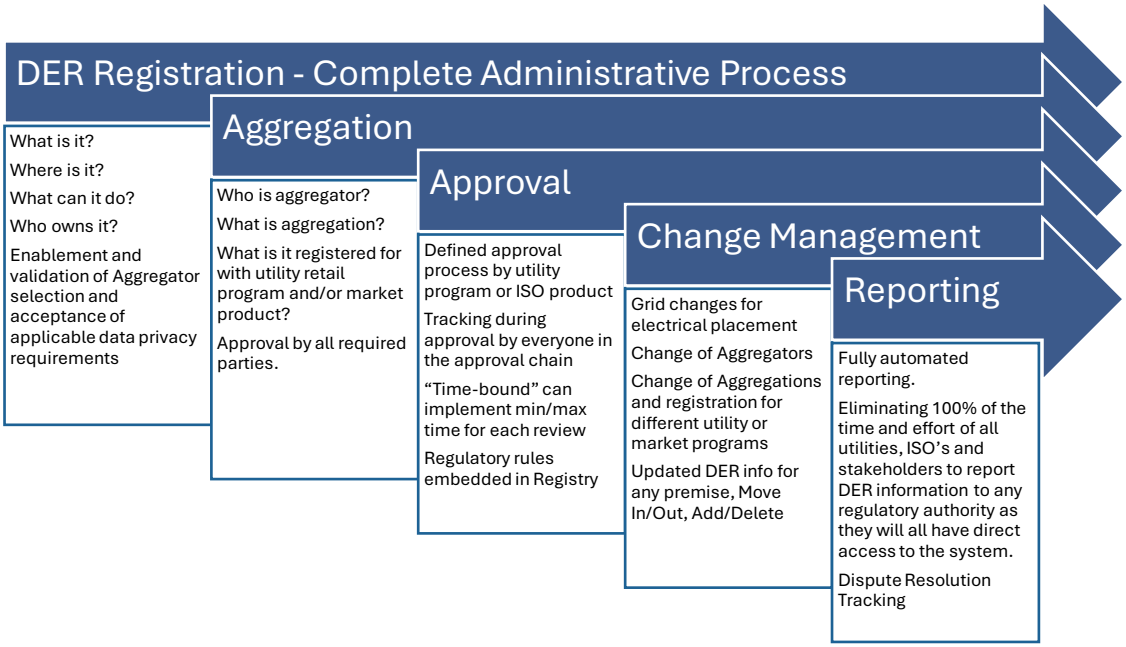

Figure 3: DER approval and review process flow

Manual processes may be adequate when there are small numbers of DERs, but as the number of DERs and DER aggregations increase both in number and size, automated or data platform tools should be considered to govern this process, especially the administrative approval and assessment processes. A DER Registry can address the chain of approvals required by explicitly including the key approval steps into the data platform. The following figure illustrates the flow diagram and logical sequence. Note that the processes included in the DER Registry are applicable to more than FERC Order 2222 DER aggregation – this tool can also be used to automate and routinize the approval processes necessary in retail DER and VPP programs.

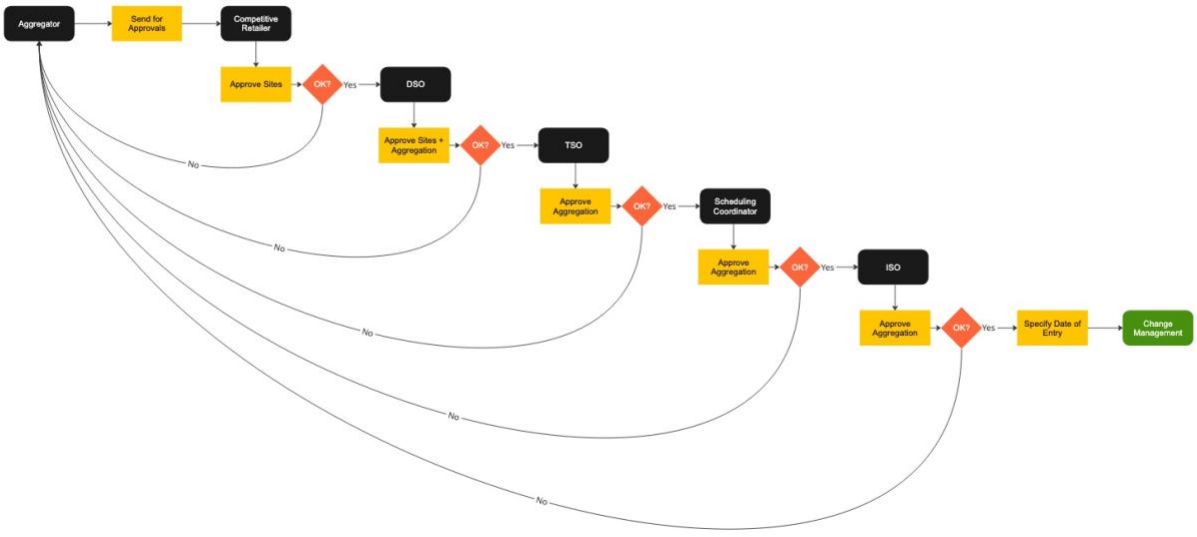

Figure 4: DER Record Workflow

State Role in DER Aggregation and Review

While the requirements in FERC Order 2222 are directed towards RTOs and ISOs, several impact EDCs and will necessitate new EDC systems and processes and may directly incorporate state regulators into the DER aggregation approval process if an automated system is not deployed. In particular, the review requirements directed in FERC Order 2222 will likely require new EDC systems for DER review and coordination, and it is currently expected that state regulators will need to approve these systems and oversee the EDC DER reviews as they determine is appropriate in their state process. As FERC Order 2222 is implemented, state regulators will need to determine the extent of their involvement with wholesale DER aggregation. Indeed, FERC Order 2222 explicitly provided a voluntary role for regulators to participate in EDC DER review and coordination.[11]

Specific considerations that state regulators will need to consider in the review of EDC processes include:

- *Transparency* - Transparency of the EDC review process is essential to ensure fairness.
- *Data Access* – Rules, or systems, governing DER aggregator access to DER and customer data to facilitate EDC review will be needed. To ensure fair and open access to DER data, while preserving

[11] "We require each RTO/ISO to specify in its tariff, as part of the market rules on coordination between the RTO/ISO, the distributed energy resource aggregator, and the distribution utility, how each RTO/ISO will accommodate and incorporate voluntary relevant electric retail regulatory authority involvement in coordinating the participation of aggregated distributed energy resources in RTO/ISO markets," FERC Order 2222, at P 322.

privacy and cybersecurity, regulators should consider requiring the use of a DER data platforms like a DER Registry that can facilitate the requirements of both security and access to the required data by the different stakeholders.

- *Oversight of EDC DER Reviews* - Oversight of EDC DER reviews will be crucial to properly establish that the states and RTOs/ISOs have adequate coordination to ensure that decisions are not arbitrary and are based on clear criteria.
- *Dispute Resolution* – Dispute resolution for issues outside of FERC jurisdiction (and most likely within state jurisdiction), such as how an EDC conducts its DER review, will need state dispute resolution methods.[12] Again, tools such as a DER Registry can facilitate dispute resolution.
- *Double-Counting Policy* – As discussed above, rules governing the ability of DERs to participate in retail tariffs/programs and wholesale markets need to be developed by regulators to ensure there is no double compensation for the same service.[13] As has been documented by DOE and several other groups, there are significant value streams to the EDC for DER participation in EDC programs. While the current focus is on the implementation of FERC Order 2222, examples such as Missouri who partially lifted their opt-out, are examples of the Walk/Jog/Run process in which states can work with their utilities in advance of FERC Order 2222 implementation to start testing and utilizing DERs in their state. This experience can help define rules through experience for dual participation without double compensation.

Summary

DER aggregation and review are fundamental parts of FERC Order 2222 (or any retail DER or VPP program). Careful attention needs to be given to the design and implementation of these processes. State regulators should also focus attention on the regulation and oversight of the EDC DER review aspects of this process. In addition, to ensure that these processes are scalable to address growing DER deployment and aggregation, tools and data platforms should be considered to ensure fair and efficient review and data access that can be effectively secured.

[12] The January Tracking report discusses the need for state regulator dispute resolution.
[13] Double counting policies will be discussed in a future tracking report.

TRACKER TIPS AND HIGHLIGHTS

The Policy Tracker is available to the public at FERC2222.org. [LINK] If you would like to recommend content for the Tracker or provide feedback, please contact us.

The Policy Tracker allows users to filter and search for content within a database of content pertaining to DER Policy, with emphasis on the implementation of FERC Order 2222. The keyword search functionality includes review of the source documents within the database, while the filters allow users to narrow their searches based on issue topic, RTO/ISO, and state or federal regulators.

In the following example, the issue filter is used to search for activities related to interconnection of DERs.

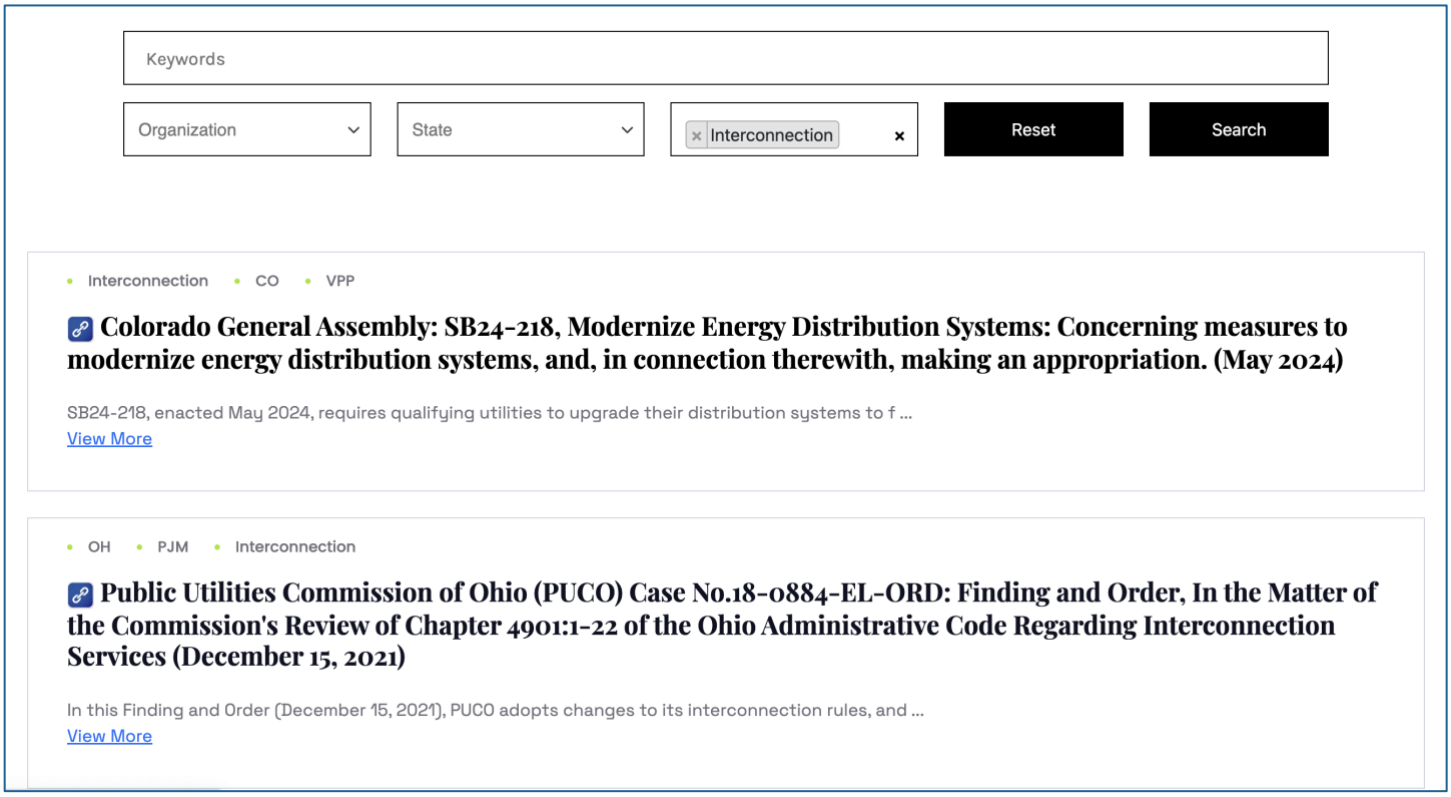

Figure 5: Screen capture of search results from the FERC2222.org Policy Tracker issue filter selection.

To find proceedings related to interconnection in a specific state, use both the state and the issue filters.

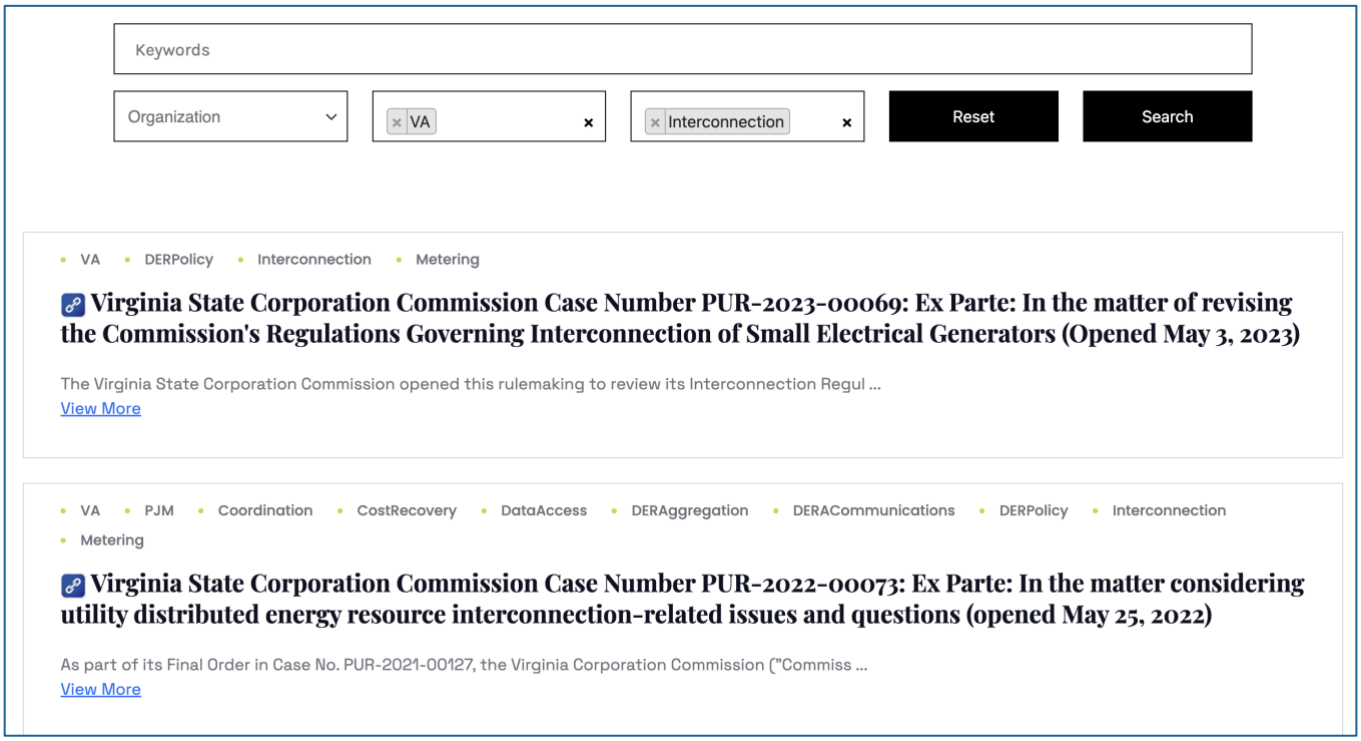

Figure 6: Screen capture of search results from the FERC2222.org Policy Tracker state and issue filters selection.

Discussion Groups

The Discussion Groups feature of ferc2222.org is now live. The DER Policy Discussion Groups provide a secure space for regulatory authorities, their staff, and NARUC to discuss key issues. Participation requires a valid email from an approved regulatory authority, as these groups are not open to the public.

Discussion Groups include:

- Data Access and Privacy
- Governance
- Metering and Telemetry
- Interconnection
- Aggregation Registration and Review
- Dual Registration/Double Counting
- Communication between EDC's, Aggregators and RTOs/ISOs
- Coordination
- Cost and Investment Recovery

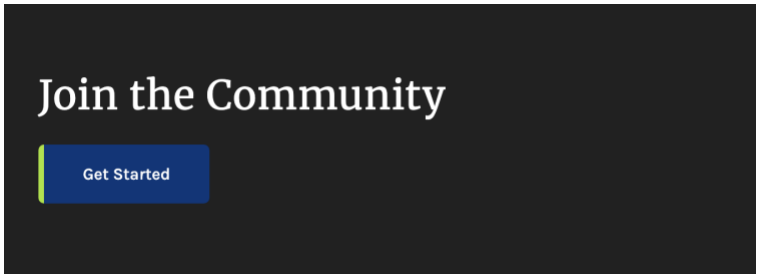

Figure 7: screenshot of ferc2222.org discussion groups login

To access the Discussion Groups feature, navigate to the Discussion Groups page on ferc2222.org [LINK] and click on the "Get Started" button (see figure 7). You will then be prompted to enter your email address. If your email domain is already white-listed you will be sent an email with a login code to complete the login process. If your email is not white-listed and you believe it should be, please contact us at 2222website@cusln.org.

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