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# Metering and Telemetry


FERC2222.org

Facilitating Collaboration Among Policy Makers on DER Integration

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Collaborative UTILITY SOLUTIONS

Empowering the Energy Transition

Pacific Northwest NATIONAL LABORATORY

U.S. DEPARTMENT OF ENERGY OFFICE OF ELECTRICITY

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# FERC Order 2222 & DER Policy Tracking


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| Bi-Monthly Report | With the first report in September 2024 and every other month thereafter, each report includes: ***Current News and Events***, ***Key Issues Analysis*** and ***Tracker Tips and Highlights***. |
| Bi-Monthly Webinar | Beginning October 2024, bi-monthly webinars are being held to present current information and allow discussion on topics.<br>❖ Today – **Metering and Telemetry** |
| FERC2222.org website & Policy Tracker | Launched November 2024, providing access to Policy Tracker that aggregates information related to FERC Order 2222 and DER policy that is shared with Collaborative Utility Solutions. This information is 'tagged' by state, ISO, and key issue to allow effective searching. |
| White Papers | David Kathan is leading an effort to create a series of white papers relating to DER topics. |
| Discussion Groups | The website will include secure chat rooms allowing policy makers a forum to discuss key issues. |
| Library | Includes key DOE, NARUC, NERC or other papers relevant for policy makers. Not seeking to find every paper; attempting to highlight industry leading efforts to support policy decision and implementation. |

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# Bi-Monthly Reports


- **The Bi-Monthly Reports contain three primary sections:**
  - Current News and New Developments
  - Key Issue Analysis
  - Tracker Tips and Highlights
- **The most recent bi-monthly report follows this structure**
- **Each of these reports will be posted to the FERC2222.org website**

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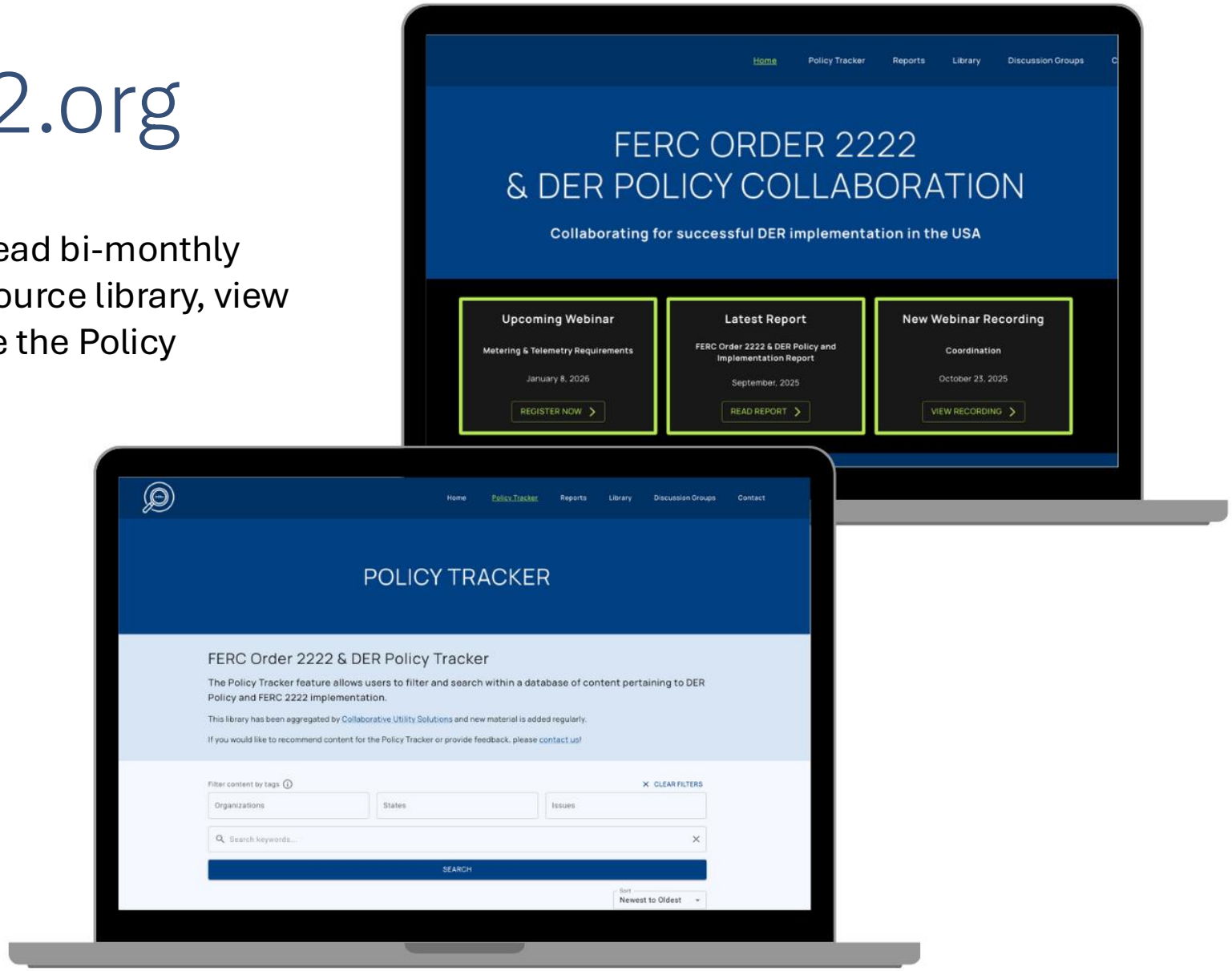
# FERC2222.org

Visit FERC2222.org to read bi-monthly reports, access our resource library, view webinar recordings, use the Policy Tracker and contact us!

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# Recent FERC Order 2222 Developments


- On October 28, 2025, in Docket ER26-284, PJM filed a series of changes associated with FERC Order 2222 to its Tariff and Reliability Agreement. These changes are largely ministerial and reflect changes in the Reliability Agreement due to how the RTO calculates Effective Load Carrying Capacity (ELCC), and the timing of capacity auctions prior to the 2028 FERC Order 2222 implementation.

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# Recent FERC Order 2222 Developments


- Following its May 29, 2025, stakeholder meeting regarding rules that may be needed for a registration and study process of DER aggregations participating in wholesale markets via distribution systems in Indiana, URC staff invited comments to be filed by Oct. 20, 2025. Reply Comments were due Nov. 3.
- The MD PSC requested comments by Nov. 19, 2025, on utility reports filed in October related to information technology system and process planning to implement FERC Order 2222 and speed the deployment of cost-effective VPPs. A technical conference was held Dec. 3.

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# Other DER Policy Developments


- On Oct. 21, 2025, the Maryland PSC issued an order addressing utilities' proposed TOU tariff offerings and pilot programs related to implementation of the DRIVE Act. The PSC accepted the utilities' TOU offerings, but is requiring that the utilities refile their VPP and V2G proposals to better align their programs with the legislative intent of the DRIVE Act. Utilities must re-file within 90 days of the Order.
- The Iowa Utilities Commission opened a new rulemaking in October 2025 with the stated purpose of allowing participation in wholesale markets by demand response customers, which was previously prohibited. The proposed rule would require cooperation between utilities and ARCs regarding exchange of customer data to effectuate participation in wholesale markets by individual customers or aggregations with a load of 100kW or more. A public hearing was scheduled for Nov. 18, 2025, with parties filing comments on or before that date.

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# Metering and Telemetry


- Metering and Telemetry define the economic transaction points for the electric utility industry.
- Historically, metering could be collected monthly and even estimated for periods of time based upon historical trends.
- As the products and the markets have begun shortening their respective requirements, telemetry has begun to play a larger role.
  - Not all products require fast (4 second) communications.
- Advancements in fully automated metering technologies are providing the ability for DERs to participate in virtually all utility programs or RTO/ISO market products without the need for incremental metering or telemetry.
- Many utilities have balked at sharing DER meter data based on technical and economic concerns.
  - Resolving this conflict is paramount; metering and telemetry requirements must not economically prohibit DERs' ability to participate in markets and programs.

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# FERC Order 2222 Metering and Telemetry Requirements


- FERC Order 2222 requires each RTO/ISO to revise its tariff to establish market rules that address metering and telemetry hardware and software requirements necessary for DERAs to participate in RTO/ISO markets.
- The Commission provided RTOs/ISOs with flexibility to establish necessary metering and telemetry requirements rather than prescribing specific or standard requirements.
- Because a DERA is the market participant and single point of contact, the Commission directed that the DERA is the entity that will be metered and will be responsible for providing any required metering and telemetry information to RTOs/ISOs.
- The Commission did not require that individual DERs be separately metered.
  - FERC further clarified this point in a CAISO compliance order. Did not require telemetry from individual DERs.
  - The Commission also directed that each RTO's/ISO's proposed metering requirements should rely on meter data obtained through compliance with distribution utility or local regulatory authority metering system requirements *whenever possible* for settlement and auditing purposes.

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# RTO/ISO Compliance


- Most of the RTOs and ISOs have fully complied with FERC Order 2222.
- **CAISO –** Telemetry is required for DERAs providing ancillary services and DERAs 10 MW or greater. CAISO stated that it will memorialize in its Tariff that DERAs can acquire the data from their DERs to provide the CAISO with accurate telemetry by any means, including calculation.
- **ISONE –** ISONE's compliance filing tied metering and telemetry requirements for DERAs to the existing and new requirements for seven different participation models. Through several compliance filings and orders, FERC directed and approved additional revisions and compliance to broaden the entities who can provide metering, establish protocols for sharing metering data, and to allow submetering.
- **MISO –** MISO requires telemetry for each distributed energy aggregated resource (DEAR) through Inter Control Center Protocol (ICCP) via private Wide Area Network (WAN), and this data must be submitted every two seconds for all dispatchable DER aggregations, regardless of size or product. For non-dispatchable DER aggregations, telemetry is scaled to the product. In addition, MISO is flexible on the type of calculation or measurement made to develop a telemetry signal, as long as there is a common method used for a single DER group.

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# RTO/ISO Compliance (Cont.)


- **NYISO –** DERAs are required to provide multiple streams of telemetry and revenue quality meter to NYISO at 6-second increments for automatic generator control (AGC) contexts, but telemetry of individual DERs is not required. NYISO's rules for small DERs under 100 kW are flexible, and NYISO allows alternative telemetry methods as long as they provide directly measured telemetry with periodicity of five minutes or less.
- **PJM –** Like other RTOs/ISOs, PJM established the DER aggregator as the entity responsible for providing metering and telemetry information. DER Aggregation Resources under 10 MW participating only in energy markets are exempt from telemetry requirements. PJM did specify that meter data must be submitted within one business day.
- **SPP –** DERAs in SPP must designate a meter agent for revenue-quality metering requirements, and DERAs must make meter values available to the LSE and Distribution Utility at whatever granularity they require for reliability. In addition, if a DERA includes demand response, it must be separately telemetered, and metering must be submitted for the demand-response performance in addition to the aggregation total.

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# Submetering is a key issue


- While most of the RTOs and ISOs specified that the primary premise meter is the appropriate metering site, with prompting by FERC several of the RTOs and ISOs will accommodate submetering, particularly ISONE and PJM.
- Submetering and the need for reconstitution was a major source of controversy in the ISONE proposal.
  - DER providers and clean energy advocates argued that submetering is essential.
  - In addition, many of these BTM devices incorporate onboard telemetry that meets the prescribed standards.
  - The utilities in New England argued that the use of submetering could result in double counting of energy services, and that customer load must be reconstituted to remove the submetered load from full premise load. Furthermore, the utilities maintained that their current metering configuration would not allow automatic reconstitution and would be burdensome and costly.

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# State Action Needed


- Key actions that state and local regulators should consider include:
  - **Adopt IEEE 1547-2018.** Consistency in application of this standard will enable equipment that can appropriately and effectively integrate and communicate.
  - **Allow submetering.** If a state doesn't already allow submetering, utility codes and regulations may need to be revised to meet the defined goals for DER performance and market interaction.
  - **Develop submetering standards**. State and local regulators should establish or update submetering standards—defining accuracy, certification, and utility inspection requirements for DER devices or aggregations.
  - **Telemetry infrastructure coordination**. State and local regulators should define acceptable communications pathways and technical standards (e.g., IEEE 2030.5, DNP3, etc.) for DER communication at the distribution level.
  - **Data Access**. State and local regulators should define requirements for fair and effective access to necessary data to enable DERs.

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# State Submetering Actions


- California is the primary state that allows submetering of DERs.
  - With CPUC Decision 22-08-024, the California PUC adopted rules and submetering protocols for plug-in electric vehicles, making it the first state to allow separate metering of EVs without installing a separate utility meter.
  - This action sets an important precedent for allowing submetering behind the main meter, defining accuracy and communications/data protocols, and aligning utility billing/validation systems accordingly.
- Maryland is drafting regulations on device-level meters
  - The draft rules under consideration accommodate the use of non-utility device-level meters as long as they meet appropriate standards such as the American National Standard for Electric Meters C12.1 Code for Electricity Metering (ANSI C12.1).

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# Future Model for Success


- Technology provides an opportunity for more effective collaboration and enablement of DERs while also lowering the overall cost burden of metering and telemetry industry wide.
  - ERCOT – In ERCOT, a common meter authority (Smart Meter Texas) was created to allow consumers, Aggregators and Retail Electric Suppliers access to meter data. However, Smart Meter Texas was developed such that the data it received was a copy, or mirror, of the utility meter data. This effectively doubled the cost of the data systems.
  - Ontario -- In Ontario, a common meter authority was established with only one head end system that is utilized by utilities, the ISO and third-party providers. A single system used by all parties eliminates any discrepancies and ensures the lowest possible cost to collect and share this data appropriately with each required stakeholder.
- Ultimately, a unified, shared structure like Ontario's will need to be adopted to control ever-escalating IT and system costs in the industry.
  - And perhaps more importantly, it will eliminate the ability of meter providers to limit access to the data required for DERs to be effectively enabled and settled in the market.

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# Reframing how we think about FERC 2222


<u>2222 is a significant opportunity for our industry – Not a burden</u>

By having all of industry attack this issue simultaneously, we have the unique opportunity to develop collaborative solutions at a much lower cost than 3000+ utilities doing it ad hoc.

<u>Four primary opportunities in this 2222 implementation process</u>

1. Non-Profit DER Registry is first example. Estimated savings to industry $20-$40 billion in next 10 years.
2. CIM-inspired data structures could lead to another $100B of savings by recognizing that DERs are the new player and if CIM APIs exist from registry to all other CIM structures (and thus utility systems). The onus shifts from the utility industry to the vendor industry to create CIM APIs to known data structures. This would lead to the elimination all software integration costs to enable DERs to the grid and market as well drive a broader implementation of CIM with the same benefits to all other utility system interfaces. (UK example and DOE project) This fundamentally speeds up the innovation cycle across our entire industry.
3. Meter/Settlement if done ‘Right’ could lead to another $75B of savings and simplify 2222 implementation (and all utility DER transactions) for meter data sharing and settlement
4. Common Communication Systems – Consumers are paying for multiple overlapping networks for Gas, Water and Electric communication systems for AMI and operations. Isn’t it time for regulators to help utilities to work together on one shared cost infrastructure?

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# Summary


- Metering and telemetry decisions in each state will likely define the success or failure of DER enablement.
- Policies that limit access to DER and meter data for third parties or RTOs/ISOs, or create cost prohibitive technology requirements for telemetry will slow, or even cause complete failure, for the effective enablement of DERs to the grid and market.
- This represents a significant opportunity for the electric industry to collaborate more effectively and move away from historical norms.
  - Simply examining the very successful example of Ontario's common metering authority shows that it is not only possible to save millions of dollars in costs through this collaboration, but it will also enable DERs and eliminate many of the current issues being faced in the U.S. for fair and cost-effective access to required data.

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# We Need Your Help!


Tracking a wide range of key policy issues related to DER integration across the U.S. is no small task. To that end, state commissions and RTOs/ISOs are invited and encouraged to assist Collaborative Utility Solutions in crowdsourcing information to be included in the Policy Tracker. The value the Policy Tracker can provide will be largely dependent on policy makers sharing information with CUS each month proactively. Specifically, CUS welcomes the opportunity to periodically meet with Commissioners or key staff members at state utility commissions and RTOs/ISOs to hear from you regarding your FERC Order 2222 and DER implementation activities, key dockets, rulemakings, or other proceedings.

Please email **Suzanne Bertin (suzanne.bertin@cusln.org)** with any updates for your states or organizations that you would like to have included in the Policy Tracker, or to arrange a meeting to discuss your states or organization's implementation policy.

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