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Communications and Control for DERs



FERC2222.org

Facilitating Collaboration Among Policy Makers on DER Integration

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Empowering the Energy Transition



DOE Project Information



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FERC Order 2222 & DER Policy Tracking



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.

❖ Today – **Communications and Control for DERs**

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.

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.

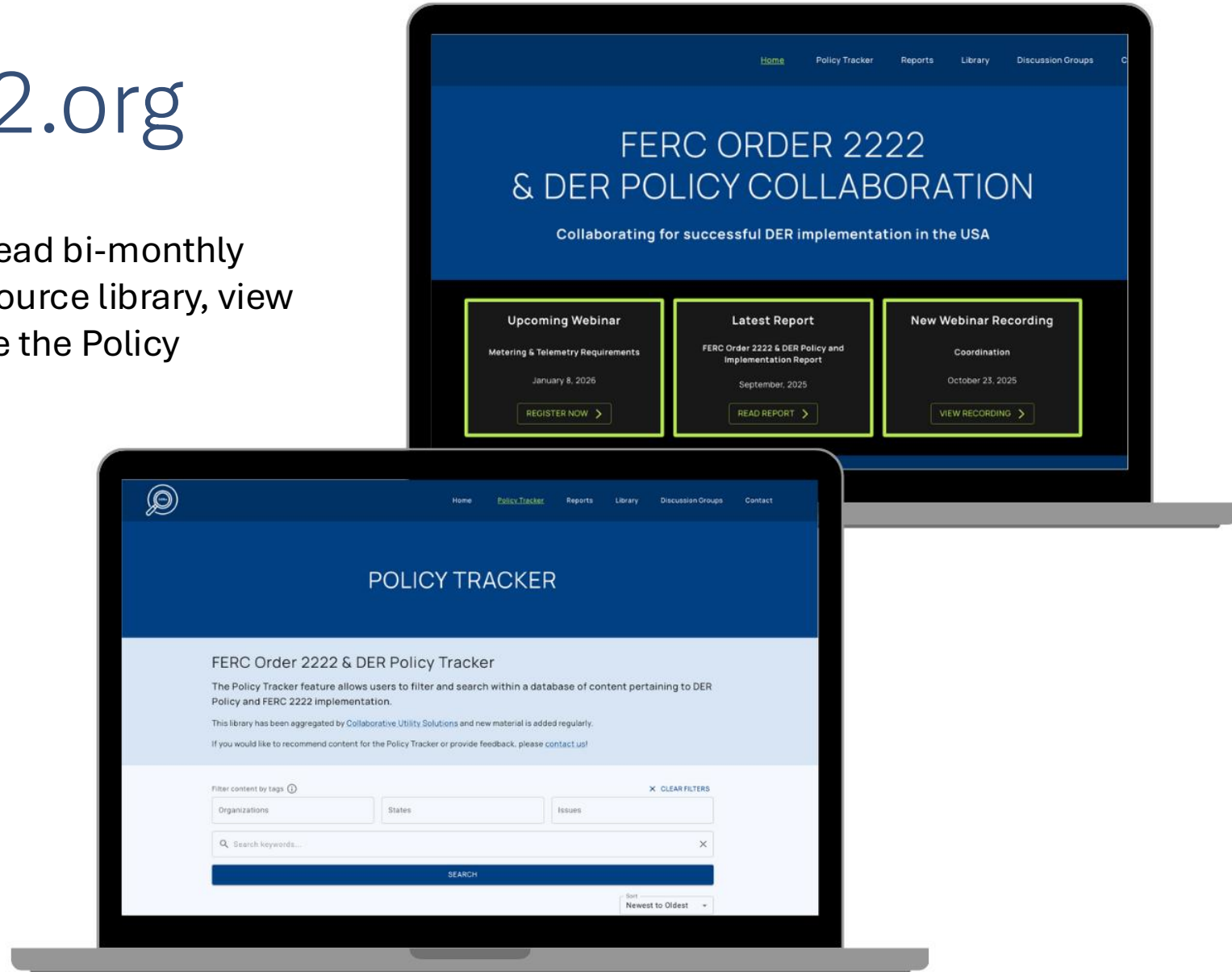


Bi-Monthly Reports

- **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](https://www.ferc2222.org) website**

FERC2222.org

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



Recent FERC Order 2222 Developments



- PJM's Distributed Resources Subcommittee (DISRS) is in the process of updating its rules and procedures to accommodate DER aggregation per FERC Order 2222. Recent meetings have focused on updating and adding additional DER information to PJM's DR Hub tool. The DR Hub currently contains information on the demand response assets contained in demand response aggregations that participate in PJM wholesale markets.

State FERC Order 2222 Implementation



- On December 18, 2025, the Pennsylvania Public Utility Commission (PAPUC) voted to advance the development of a Notice of Proposed Rulemaking (NOPR) aimed at modernizing the Commission's electric interconnection regulations. The rulemaking will include a review of interconnection regulations, including how new electric load, upgrades to existing load, and distributed energy resources are connected to the distribution system. This rulemaking is separate from and does not replace the PUC's active proceeding addressing FERC Order 2222 but instead is intended to ensure that Pennsylvania's broader interconnection framework reflects current technologies, customer needs, and grid conditions. The NOPR was published in the *Pennsylvania Bulletin* around April 11, with comments due within 60 days of publication and reply comments due within 90 days.



Other DER Policy Developments

- On Dec. 1, 2025, Virginia Electric and Power Company (Dominion Energy) filed an application with the State Corporation Commission for a virtual power plant (VPP) Pilot pursuant to the Community Energy Act, Va. Code § 56-585.1:16) which requires the Company to submit a pilot program to evaluate methods to optimize system demand through various technology applications and DERs, including the establishment of VPPs. Dominion is asking for approval within eight months of the filing so that they can launch the 18-month pilot program in Q1 2027.
- On Jan. 8, 2026, S.B. 25 (Public Act 104-0458), the Clean and Reliable Grid Affordability Act, was signed into law in Illinois. This omnibus electric bill, effective Jun. 1, 2026, addresses a wide range of topics, including DERs. The new law requires utilities to create VPP programs that aggregate customer-side resources (smart thermostats, small batteries, rooftop and community solar, EVs) and pay participating customers for grid services during peak periods.



Other DER Policy Developments

- On Mar. 2, 2026, the Maryland Public Service Commission issued an order instituting a new public conference, PC 77 (Case No. 9761), Demand Side Management (DSM) Programs, Rate Design Measures, and Distributed Energy Resource Integration in Coordination with the DRIVE Act, to be considered alongside the DRIVE Act and other relevant proceedings. The purpose of this public conference is to catalog the current state of DSM programs as well as rate design measures intended to influence customer load behavior, such as time-of-use rates. The Commission also directed utilities to provide proposals to increase participation in these programs and rates by August 2026.



Other DER Policy Developments

- The New Jersey Board of Public Utilities has issued RFIs in response to Governor Mikie Sherrill's Executive Order No. 2 (dated Jan. 20, 2026), which directed the Board to accelerate deployment of both distributed and utility-scale storage and to develop a VPP program to aggregate behind the meter resources. An RFI was issued earlier this week, with responses due May 20.
- Subcommittees of the Wholesale and Retail Electric Quadrants of the North American Energy Standards Board (NAESB) continue NAESB's consideration of voluntary standards for a DER Entity Registry and a DER Device Registry. A conceptual paper describing the two registries received informal comment from industry and discussion at a March 13, 2026, subcommittee meeting.



What is an Ontology?

An ontology is a model to describe real-world objects

- Including features of those objects
- Includes relationships among those objects

Best if:

1. **Precise** = the features and relationships are extensive with consistent descriptions to explain them
2. **Broad** = coverage across the business domain

The electricity industry's ontology is the
Common Information Model (CIM)



Example of Ontology in Practice

- A battery operator receives a message with a dispatch schedule for time intervals over the next day
- Without a defined ontology, the amount for each interval is unclear
- For example, does the value “5” mean:
 - Charge/consume 5 or discharge/produce 5?
 - Set output to 5 or increase output by 5?
 - 5 kW or 5 MW?



The “Scale” comparison of... Distribution-Connected Resources

Solar

- ~ 5,000 Utility-Scale
- ~ 20,000 C&I
- ~ 8,000,000 Residential

Energy Storage

- ~ 300 Utility-Scale
- ~ 20,000 C&I
- ~ 70,000 Residential

Wind

- ~ 75,000 Turbines Utility
Scale



The “Scale” of... Smart Tech on the Grid

Electric Transport

- ~ 4,500,000 Electric Vehicles
- ~ 4,500,000 Hybrid Vehicles
- ~ 75,000 Delivery Vehicles
- ~ 15,000 Buses
- ~ 750,000 Forklifts

Smart Thermostats

- ~ 35,000,000 Residential
- ~ 5,000,000 Commercial

Water Heaters

- ~ 1,500,000 Residential



Ways To Prepare for CIM Ontology

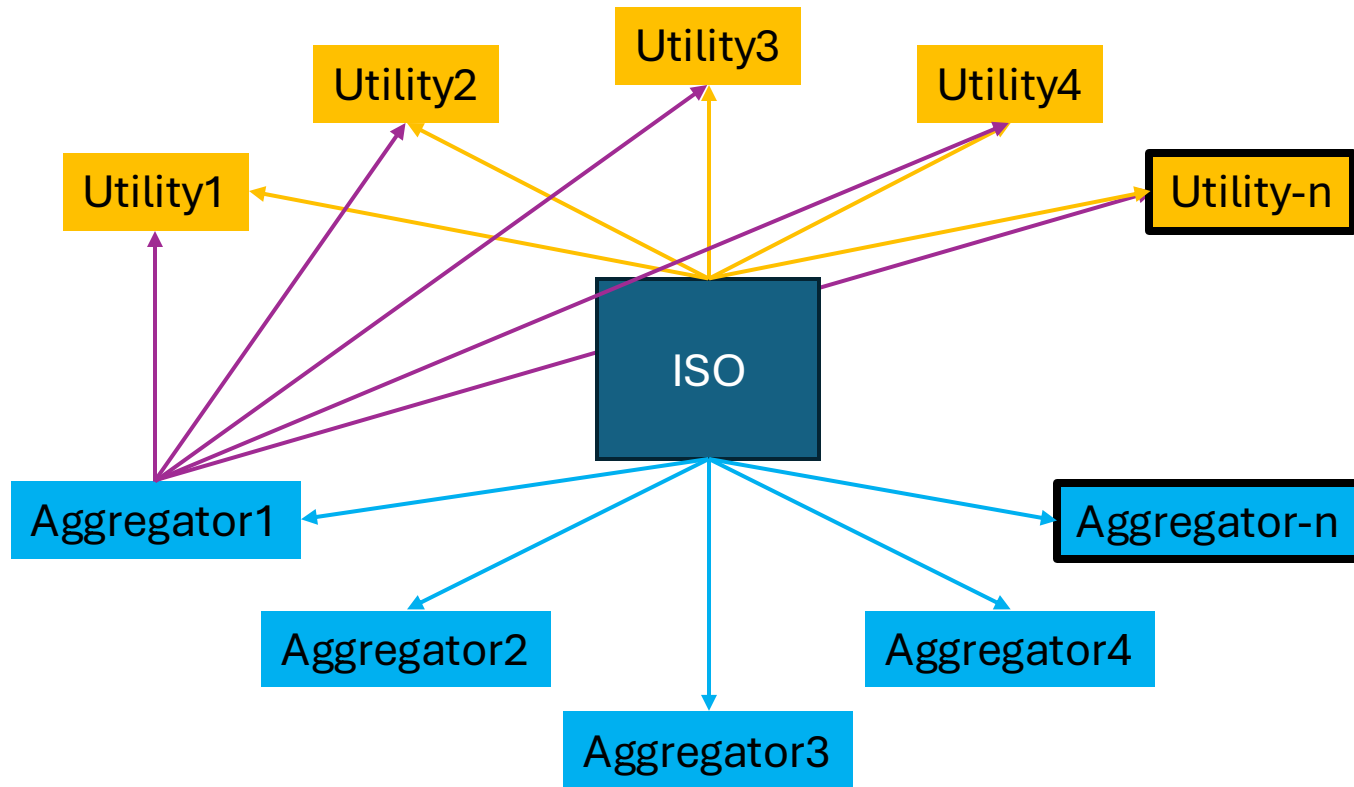
- Sign up for webinars and other events hosted by the national labs, EPRI, and the CIM User Group.
- Ensure that the department in the utility focused on data standards (Data Governance, Enterprise Architecture, Digital Transformation, etc.) is aware of the CIM.
- Query staff about the quality of the data throughout the organization and focus initial considerations in those areas with the most time spent resolving data issues or where costs are the highest to create customer data interfaces between all of the different utility systems.
- Join the working groups; there are several remote sessions every week on various areas of the CIM and quarterly in-person sessions hosted alternately in North American and in Europe.



ISO - Utility Interface
\$150M + \$30M/yr

ISO - Aggregator Interface
\$25M+\$5M/yr

Aggregator - Utility Interface
\$3.75B + 750M/yr



The Cost of Business as Usual: \$12BN + \$2.6BN/yr

- Over 3,000 utilities, the RTOs/ISOs and Aggregators will have to independently create and maintain their own systems. Functionality limited to ‘their scope’.
- DER Enablement to utility programs and market products inhibited by administrative processes of interface and information exchange
- Provides no direction for existing utility system software vendors to improve their systems for DER data use and exchange
- Costs are significant and escalating

Internal ISO/Utility Systems Interface
\$5.2B + \$1.05B/yr

First cost of building Systems
\$3B + 750M/yr

Reframing how we think about FERC 2222



2222 is a mammoth opportunity for our industry – Not a burden

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.

There are four significant opportunities in this 2222 implementation process

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 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 these utilities to work together on one shared cost infrastructure? Isn't it time for utilities across your state to work together on a combined solution for all?

Reframing to Collaborative Approaches



- The stress on the electric industry and its employees is immense. Short-staffed and budget struggles force a tunnel vision approach to solutions to make it to the next day
- Regulatory oversight is the single mechanism that can help industry move from costly, individual approaches to effectively enable DERs for the benefit of the grid, market and all electric consumers.
- 2222 is providing a once in a generation opportunity for regulators to help control costs and enable a more effective future for the electric utility industry.



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.