



Connecticut Distributed Generated Interconnection Working Group Meeting Summary

**State of Connecticut Public Utilities Regulatory Authority Office of
Education, Outreach & Enforcement**

****January 9, 2024****

Notetaker: Michael DiPanfilo, Earthlight

January 2024 IX WG Meeting Topics: Discussing recent cost allocation Decision in Docket No. 22-06-29, utilities' trough-type connection plans, and improving communications regarding FERC 2023 compliance.

Introduction

Aileen Cole from the Great Plains Institute (GPI) opened the meeting at 1:31. There were 38 attendees on the call at this time.

First, Aileen Cole (GPI) reviewed the meeting agenda and the **meeting goals**, as follows:

1. Provide an overview of the December 20, 2023, Decision in Docket No. 22-06-29, *PURA Investigation into DER interconnection cost allocation* and discuss how it pertains to IX WG conversations related to cost allocation.
2. Understand the EDC's approaches and strategies that they plan to include in their trough-type connection proposals (to be filed no later than March 15th, 2024) to meet the requirements established under Order No. 28 in PURA's November 1st, 2023 Decision in Docket No. 23-08-02, *Annual Residential Renewable Energy Solutions Program Review – Year 3*.
3. Provide an opportunity for the EDCs to consult the IX WG during trough-type connection proposal development, as required under Order No. 28.
4. Identify communications issues between parties that have occurred as EDCs and developers work to comply with FERC 2023 and discuss potential solutions to those issues.

Next, Aileen Cole (GPI) reviewed the **meeting ground rules**:

5. **Respect each other.** Help us to collectively uphold respect for each other's experiences and opinions, even in difficult conversations. We need everyone's wisdom to understand complex problems.

6. **Be receptive and adaptive.** Recognize and allow opportunities for participants' opinions to change based on new information, insights, and perspectives.
7. **Make resources available.** Facilitators will ensure that meeting materials and resources are available to participants. Participants are encouraged to identify resources, such as reports, that can help to increase the collective knowledge of the group.

Updates/Developments Since Previous IX WG Meeting

December 20, 2023 Cost Allocation Decision in Docket 22-06-09

Presentation by Jamie Spannhake, Office of Education, Outreach & Enforcement (EOE)

(Note: EOE staff does not speak on behalf of PURA.)

1. Revises cost allocation policy for the interconnection of residential DER projects.
 - a. Only applies to distribution transformer costs (the transformer itself and associated labor/installation costs for the transformer and other related equipment such as a new pole, if needed)
 - b. Transformer upgrades may be needed when the capacity will be more than the current transformer can handle.
 - i. Triggering threshold: Residential DER applicant fails Technical Screen 2.5.1 from the *Guidelines for the Interconnection of Residential Single Phase Certified Inverter-Based Generating Facilities of 25kW (ac) or Less*.
 - c. If a residential DER interconnection requires a new transformer and additional distribution system upgrades, the customer will be responsible for the costs of the total upgrade minus the cost of replacing the transformer.
 - d. Cost adder changes effective April 1, 2024 (note: language allows for EDCs to ask for an extension) through December 31, 2024.
 - i. 2025 cost adder to be determined.
2. Decision has three Orders requiring IX WG action, summarized below (please refer to the Decision for additional details and exact language)
 - a. **Order 1:** EDCs to submit revised interconnection application template that fulfills environmental justice (EJ) requirements listed in Section II.D.2 of the Decision. Filing must include summary of IX WG conversations on this topic. Decision establishes two approaches depending on whether the applicant meets environmental justice (EJ) eligibility requirements.
 - i. **If customer meets EJ requirements:** Upgrade costs will be recovered by the EDCs across all ratepayers through next rate case proceeding.
 - ii. **If customer does not meet EJ requirements:** EDCs will offset a portion (ideally all) of the costs through an adder charged to all non-EJ applicants as part of the interconnection application fee. Any outstanding costs to be recovered across all ratepayers through next rate case proceeding.
 - b. **Order 3:** EDCs to submit proposed 2025 cost adder by August 1, 2024, to be discussed in collaboration with the IX WG.

- i. IX WG and EDCs to work together to identify the 2025 cost adder (\$50 cap) by August 1, 2024
 - c. **Order 5:** IX WG to submit compliance assessment of new residential DER interconnection cost allocation policy by July 22, 2026, to include:
 - i. Suggestions for refining or improving the cost allocation model;
 - ii. Identification of any issues with the current model;
 - iii. Suggestions for alternative methods of cost allocation if appropriate; and
 - iv. Methods for refining the application fee adder

Discussion and Q&A on December 20, 2023 Cost Allocation Decision (Docket 22-06-09)

1. Brian Rice (Eversource): Eversource interpreted that April 1st is the deadline for implementing the \$25 cost adder, but that there is no prohibition on doing so earlier. Because Eversource thinks this cost adder is a positive change, we are interested in implementing it before April 1st, and would like to work with IX WG to do so.
 - a. Becca Adams (EOE): The Decision contemplates the same service across the state so want to ensure that customers statewide have this access.
2. Aileen Cole (GPI): When does Eversource think they would be ready to implement this change?
 - a. Brian Rice (Eversource): Eversource could be in a position to make necessary adjustments to the power portal within a matter of weeks. Note: Need to align collection of \$25 fee with waiving additional upgrade costs.
3. Joe Marranta (UI): Eversource is closer to implementation than is UI—UI still discussing this with legal and accounting teams and needs to establish systems to accept the \$25 cost adder per qualifying project. Concurs with Eversource regarding April 1st timeline but can't yet commit to a date. Suggests a subgroup on this topic.
4. EOE and GPI will move this to the top of the list of IX WG tasks, and will create subgroup dedicated to this issue, to meet in the near future.

Utility Presentations and Q&A on Trough-Type Connections

United Illuminating

Presentation by Joe Marinaccio (UI)

1. Trough: The junction box containing all the wires. Trough installations are initially easier but tend to cause more issues over time in operation.
2. UI's current guidelines for new/upgraded services: Vertical or horizontal, pre-bussed arrangement for multiple-socket installations, for both socket installation and group metering; wire troughs no longer allowed for single or multiple meter installations.
3. Safety concerns:
 - a. It's UI policy that meter technicians not open troughs to inspect wiring—it is often difficult to close troughs after opening due to over-congestion of wires.
 - b. Applying a lock to a trough involves drilling into a trough that contains energized wire. This exposes technicians to the risk of causing an arc flash which can pose a significant risk to life/property.

- c. EDCs required to provide safe/reliable service to customers; troughs risk that.
- 4. Reasons for current guidelines:
 - a. Mixed line and load wires (incorrect wiring) by customer or developer electricians
 - i. This leads to improper billing for both generation and regular service and significant safety concerns (e.g., meter technician working in trough containing both energized and non-energized wires).
 - b. Environment/climate deterioration issues
 - i. Troughs are less weather-tight than conduit—water intrusion increases arc flash risk, which can cause fire, property damage, safety concerns.
 - c. Energy diversion & customer safety
 - i. Increases cost of energy
 - ii. Customers face the same risk as utility personnel to life/property.
 - iii. Outages resulting from trough tampering (intentional or unintentional) increases risk of entire building losing power (not just one customer).
- 5. Joe showed example photographs of unmetered taps.
- 6. UI is currently reaching out to other utilities to identify potential solutions that allow for safe, reliable and long-term electric service.

Discussion and Q&A: UI

- 1. Val Stori (GPI): Is this issue arising because multi-gang meters are unavailable?
 - a. Yes, confirmed by EDCs—supply chain issues have made it difficult to obtain enough multi-gang meters.
- 2. Alex Marroquin (Consolidated Electrical Distributors, CED): Do you have an alternative solution that does not involve multi-gang metering sockets?
 - a. Joseph Marranca (UI): Nothing right now, though UI does allow two taps at the weather head.
 - i. Alex Marroquin (CED): That is difficult when there's an underground service—can't dig up properties. Hoping for specific solutions to the trough issue.
- 3. Val Stori (GPI): What other utilities have UI reached out to on this topic?
 - a. Joe Marinaccio (UI): So far UI has just reached out and has no additional specifics to share.
 - b. Aileen Cole (GPI): Does UI know if any other utilities have found viable alternatives that may work?
 - c. Joe Marinaccio (UI): Other utilities have not yet identified anything that works but waiting to hear back from a few utilities.

Eversource

Presentation by Patrick Fam (Eversource)

- 1. Safety concerns:
 - a. High risk of arc flash
 - i. Troughs can rust over time, leading to water penetration.
 - ii. Troughs often overpopulated with wires—inspection becomes unsafe.

- iii. Outage would persist until all damaged equipment is replaced.
 - iv. Improper loose splices or taps for one customer will affect other tenants.
 - v. Potential to overload existing service without notifying Eversource.
- 2. Revenue concerns—wiring troughs often lead to billing issues included but not limited to the following (note: revenue concerns often cannot be mitigated with locks, seals, or other methods).
 - a. Mixed billing accounts
 - b. Unmetered loads
 - c. Unintentional double billing (two meters measuring the same load)
 - d. Unintentional theft
- 3. Eversource is continuing to research best practices, safety concerns and other potential issues related to troughs, and is reaching out to other utilities.

Discussion and Q&A (Eversource)

1. Jamie Spannhake (EOE): Why do these troughs exist and why are they used in the first place? Are there new installations of troughs, or is Eversource just working with old installations and figuring out how to make them safe?
 - a. Patrick Fam (Eversource): It's an alternative to multi-position sockets, which are difficult to get. They allow for an open box to be used as a junction point for multiple meters. Main concern with troughs is with old services—Eversource is seeking a long-term solution for the customer.
2. Aileen Cole (GPI): Of all the utilities Eversource reached out to, have any found a solution that works for them?
 - a. Patrick Fam (Eversource): We're still researching utilities, but they may have procedures in place that may not apply to Eversource's service territory/needs—want solutions that can work here.
3. Val Stori (GPI): Have any other utilities found alternatives or researched this?
 - a. Patrick Fam (Eversource): Still researching but have not yet found anything.
4. Becca Adams (EOE): Will anyone step up into this market gap?
 - a. Patrick Fam (Eversource): The market gap depends heavily on supply. There are supply chain issues with meter boxes, panels, breakers.
5. Justin Daigle (Earthlight Technologies): Regarding trough longevity, most equipment currently being made will have the same quality, life expectancy, components as metering equipment. Troughs should not be such a large safety concern and the authority having jurisdiction should identify code issues. Based on experience working in other jurisdictions where troughs are commonplace, there shouldn't be trough longevity issues as long as the equipment is listed with its environment.
 - a. Patrick Fam (Eversource): Eversource understands that and will take that into account; want to ensure there is a long-term solution.
 - b. Justin Daigle (Earthlight Technologies): The biggest issue is the locking mechanism for troughs—using the manufacturer-supplied locking mechanism may be a solution.
 - c. Val Stori (GPI): Seems that the issue is less of an equipment hazard and more of an installation hazard. Could this be solved with an installation standard?

- d. Justin Daigle (Earthlight Technologies): Installation standards exist in the National Electrical Code. EDCs guidelines need to be as clear as possible to ensure that electricians comply with requirements.
6. Strategies to address issues related to trough-type connections will be further discussed during the February IX WG meeting.

Communications between parties regarding FERC 2023 compliance

What information would parties like to get from ISO-NE? Utilities? Developers? Other entities? Are there any other issues/points of discussion related to communications between parties as the EDCs work to comply with FERC 2023?

1. Oliver Sandreuter (Lodestar Energy): From a developer perspective, we're looking for clarity from ISO-NE on timelines including study timelines, what timelines are expected in group studies, etc.
 - a. Brad Marszalkowski (ISO-NE): The November 9th transmission committee meeting presentation (Slide 7) includes an updated schedule—link [here](#).
2. Nigam Travedi (BlueWave): Regarding the existing/ongoing transmission studies, we raise the issue of completion and changing of categorization of transmission studies and their extended timeframes. There is a huge lag between getting a queue position and starting a transmission study—If the distribution-side study is completed, that project should be able to be completed, is within Level 0 requirements, and should be able to be completed as Level 0 rather than being folded into the larger cluster.
3. Rick Labreque (Agilitas): We learned that if the Affected System Operator (ASO) study is completed in August 2024 and receives I.3.9 approval at the November ISO-NE Reliability Committee meeting, they'll be included in the base case for the first ISO-NE transmission cluster study. But DER developers still lack information on whether they'll be in that lucky group whose studies are completed by August, and that is entirely within the control of the transmission owners/planners. DER developers would like transmission owners and ISO-NE to determine how many studies are in-progress and which ones will be finished by the deadline—want more transparency study status.
 - a. Kavita Ravi (BlueWave Energy): Also interested in this sort of transparency. Developers can appeal to ISO-NE but need information about study status before doing so.
 - b. Jacob Lucas (Eversource): I.3.9 approval at the October meeting is the final opportunity. Eversource agrees with the need for improved transparency. Eversource has approved existing studies and can share a best guess of when studies will be completed but cannot give certainty or a guarantee, as there are factors outside of the transmission owner's control. Eversource is determining provide this information to developers such that it is available to everyone at the same time. Eversource is concerned about next bucket—once FERC 2023 is in effect, the timeline to complete future studies will change but is not yet known.
4. Kavita Ravi (BlueWave Energy): Is Eversource working to complete existing studies as quickly as possible? Is ISO-NE supporting utilities with the same effort? Are they also trying to get as many projects through as possible?

- a. Jacob Lucas (Eversource): Eversource is working as quickly as possible to complete studies and is fully supportive of getting as many ASO projects approved as possible, especially as Level 0 where possible. Eversource has recurring meetings with ISO-NE but cannot speak for them.
- b. Kavita Ravi (BlueWave Energy): Is ISO-NE urgently working to complete ASO studies that are currently underway?
 - i. Brad Marszalkowski (ISO-NE): ISO-NE working expeditiously with all transmission owners while sticking with standards and procedures.

What issues would parties like to discuss in the IX WG?

- 5. Myra Sinnott (Delorean Power): We're in a group of Eversource projects trying to be a Level 3 study—we've had some intensive last-minute requests from Eversource hope Eversource is trying to establish smoother processes while allowing developers enough time to provide requested information.
 - a. Jacob Lucas (Eversource): This specific short-notice turnaround request was to provide developers a final iteration opportunity to cure potential model deficiencies so they can be included in the current transmission study. There can be many deficiency notices on the models—Eversource is interested in identifying best practices to get the models to be satisfactory on the first submittal. It's consumed so much time to iterate on these deficiencies.
- 6. Meiyun Li (Eversource): Main issues with developer-submitted models:
 - a. Developers often use the manufacturer's default PSCAD model, which is not customized to the specific project.
 - b. The manufacturer model being used isn't always up to date (e.g., it may contain bugs/errors that have been "fixed" in updated versions).
 - c. Some models do not incorporate the specifications required under ISO-NE's most recently updated Source Requirement Document (SRD).
- 7. Kavita Ravi (BlueWave Energy): Interested in IX WG discussions on improving developer-submitted models, which will be more important once cluster studies also have accurate models—opportunity to "get ahead" where possible.
- 8. Will hold an additional sub-group meeting to work through model optimization and communications improvements related to this topic.

Administrative Items/Next Steps

- 1. Next recurring IX WG meeting scheduled for Tuesday, February 13th.
 - a. EDCs to present MSA proposals to IX WG, IX WG will have opportunity to provide feedback.
 - b. Participant from BlueWave to be notetaker for next meeting.
- 2. GPI to send out invites for two sub-group meetings—\$25 cost adder, optimizing developer-provided models.