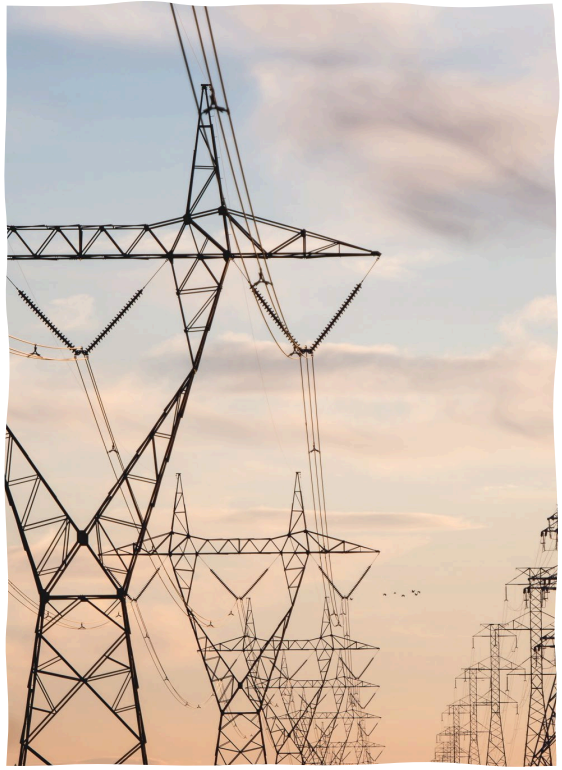


Massachusetts Technical Standards Review Group (TSRG)

Quarterly Meeting- September 17th, 2026

Agenda

- Administrative update on TSRG Membership
- ConnectDER Presentation on Meter Socket Adapters (~15 min)
- Eversource Presentation on RTAC Communications (~15 min)
- TSRG Sub-Committee Updates (~10 min)
  - Meter Socket Adapters
  - Flexible Interconnections
- Tariff Revision Process update (~30 min)
  - IIRG process update and procedural schedule
  - IIRG ESS Subgroup
  - IIRG Flex IX Subgroup
  - IIRG DER Equipment Replacement
  - IIRG Fees
  - IIRG Data Transparency (Maps & Reporting)
- Group Study Status Update (~15 min)
  - Eversource
  - National Grid
  - Unitil
- OPESS Tariff Update (~5 min)
- Technical Standards Update from EDCs (~5 min)
- Close Out & Final Discussion (~10min)
    - Next scheduled quarterly meeting dates
      - December 10th 2026: 1PM-4PM
    - Send topics for future meetings to:
      - Shakir Iqbal (shakir.Iqbal@eversource.com)
      - Tony Morreale (tmorreale@ligconsultants.com)

Administrative Update on TSRG Membership

- Justin Ulrich will replace John Bonazoli & will be the official TSRG member for Unitil
- Nathan Walsh will replace Mike Porcaro & will be the official TSRG member for National Grid
- By next TSRG meeting in Dec 2026, an update will be provided on the Chair & Vice Chair positions for the TSRG Committee

Meter Socket Adapters

Industry Update

ConnectDER

Industry Update on Meter Socket Adapters

- Bill S.2967 and the adopted Sec. 151 requires EDCs to approve MSAs which are NEC compliant and have NRTL certification

- TSRG subgroup was established in June 2025, held last official meeting in April of 2026, after which an implementation plan was proposed by EDCs.

- Updates on major points from that plan include:
  - Training
    - Meeting at National Grid July 14th - overview of all devices
    - Meeting at Eversource October 7th (tentative) - focus on installation and field procedures
  - EDCs working on liability waivers, field procedures, interconnection portal updates, test plans, and standards updates

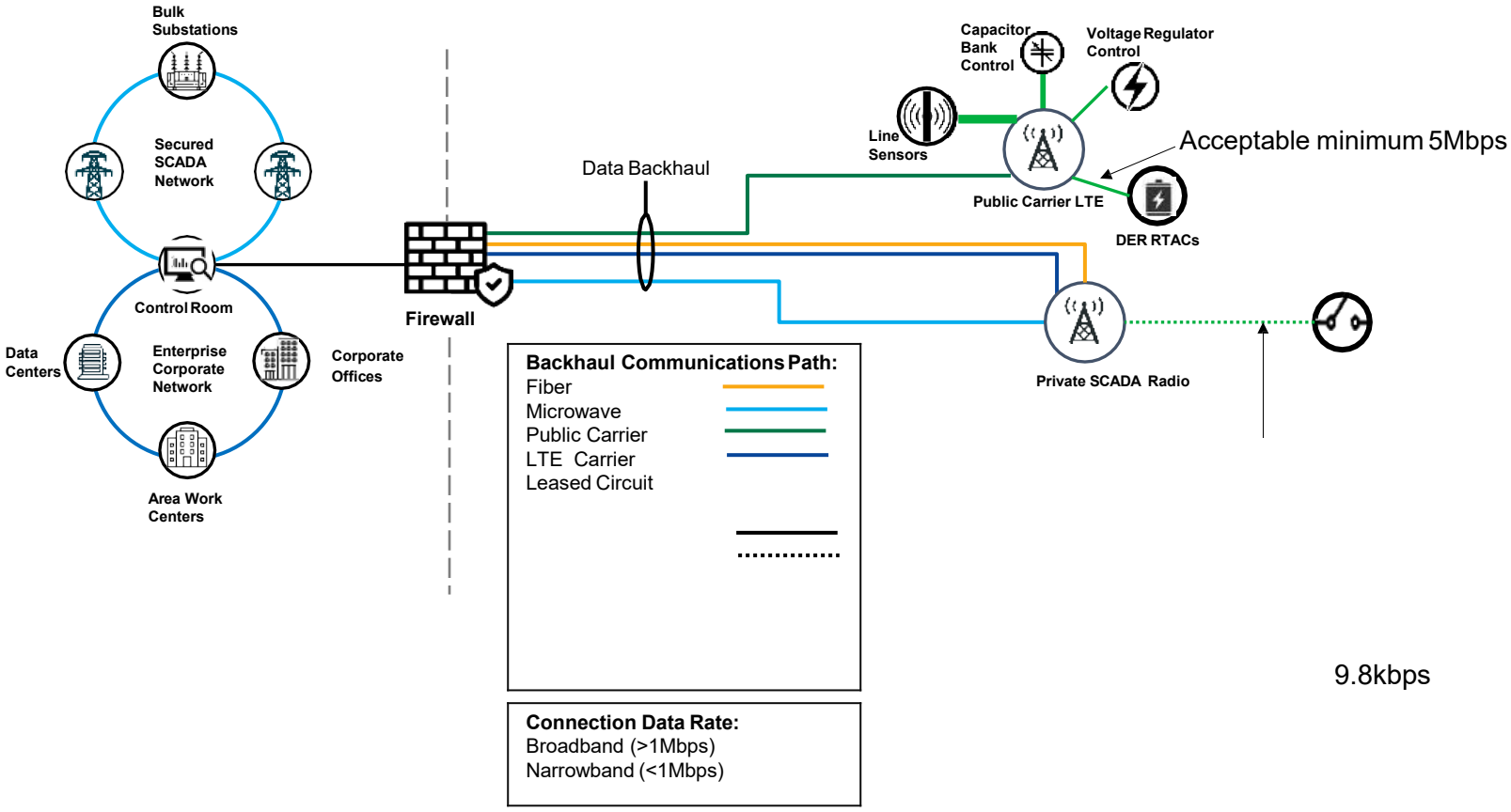
- Open issue from subgroup not addressed in implementation plan:
  - Use case restriction alignment with NEC and NRTL acceptance

RTAC Communications

Eversource

TSRG SUB-GROUP

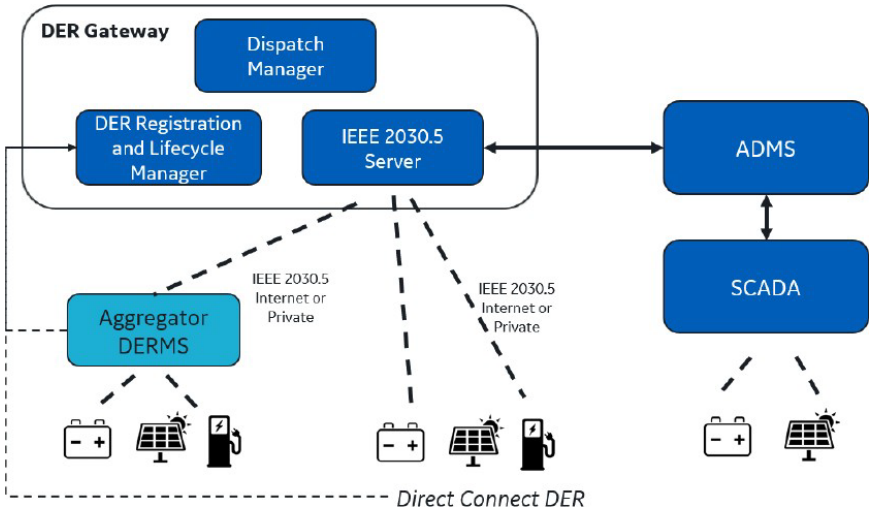
Overview of Eversource DSCADA Communications Network



SCADA Device Type	Data Throughput Requirements (packet size, polling interval)	
	Current State	Future State
Recloser	300 bytes, 60 minutes	300 bytes, 5 minutes
VVO Devices	~400 bytes, 5 minutes	~400 bytes, 5 minutes
DER RTAC	~3,000 bytes, 5 minutes	~3,000 bytes, 1 minute or less

Eversource RTAC to SCADA Comms. Options

- Eversource's TIIR Standard Section 3.19 lists the following communications options between the ES RTAC and SCADA:
  - Fiber
  - Cellular
  - Private Radio – this is non-viable as discussed in previous slide, will be removed in upcoming revision
- Once DERMS is online and the proper tariffs and agreements are in place, RTACs will be polled more frequently (close-to-real-time) and will require more data throughput to effectively orchestrate all these DERs across the grid.
- Eversource is evaluating additional broadband wireless telecommunication options
  - Additional public carriers
  - Low Earth Orbit satellite (e.g., Starlink)



METER SOCKET ADAPTERS (MSA)

USMAN GAUHAR

TSRG SUB-GROUP

Meter Socket Adapter Sub-Group Update

Mission Statement:

Ensuring safe, reliable and standardized implementation of meter socket adapters technology across the Utility network through technical expertise, stakeholder collaboration and foster regulatory compliance per Chapter 231 Section 151 of the MA State Law & applicable safety standards.

Expected Group Output:

The goal of this subgroup is to ensure compliance with the MA State Law per Chapter 231 Section 151 by incorporating Meter Socket Adapters (MSA) for the Simplified Applicants and by ensuring that all safety & operational procedures of the EDCs are addressed. For clarifying purposes, it should be noted that this subgroup will not create guidelines for MSAs that do not support Distributed Generation such as EV Chargers.

Team		
First Name	**Last Name**	**Company/Affiliation**
Usman	Gauhar	National Grid
Wai Pong	Wong	National Grid
Nathan	Walsh	National Grid
Brian	Canfield	National Grid
William	Nieman	National Grid
Eric	Misbach	National Grid
Shakir	Iqbal	Eversource
Patrick	Fam	Eversource
John	Bonazoli	Unitil
Justin	Ulrich	Unitil
Gerry	Bingham	DOER
Courtney	Feeley-Karp	DOER
Carson	Bullock	DOER
Jonathan	Knauer	Connect DER
Khanti	Munro	Connect DER
Emily	Peck	Connect DER
Marc	Monbouquette	Enphase Energy
Marko	Rosenfeldt	Enphase Energy
Nathan	Charles	Enphase Energy
Beau	Millett	Tesla

Summary of Major Accomplishments & Upcoming Activities	
Completed Activities:	
DATE	DESCRIPTION OF ACTIVITY
07/15/26	Meter Socket Adapter- Part 1 Training - Development of EDC Field Procedures training is completed at National Grid premise with the participation of all EDCs and MSA industry representatives.
08/07/26	AMI meters from National Grid are provided to ConnectDer for ANSI C12 testing at Eurofins lab..
Upcoming Activities:	
10/07/26	Meter Socket Adapter- Part 2 Training – Training for the field representatives of EDCs is planned at Eversource with the MSA industry.

FLEXIBLE INTERCONNECTIONS

MARK BENTSON

TSRG SUB-GROUP

Flexible Connections Sub-Group Update

Mission Statement:

Center discussion on the use of technology, improved methods, and products that can enable dynamic management of DER assets on the grid.

As a SubGroup, our primary aim is to define and review Flexible Connections across industry. The goal being to enable DER projects in appropriate areas to interconnect to avoid significant distribution system upgrades, while reducing costs and timeframes associated with the standard interconnection process. This includes defining policy on how curtailment will work for DERs. Success may allow for faster and cheaper integration of DERs by increasing the hosting capacity of existing grid infrastructure and/or increased penetration of DERs to the grid.

Expected Group Output:

Deliverables and actionable next steps to be escalated/reported to the TSRG on the following:

- **Utility Controlled, Flexible Connections –** Use Cases, Thermal Constraints, Foundational technologies, scheduling, economics & markets, curtailment, studies, scaling.
- **Dynamic "Local" Control –** Enabling inverter functionality, Smart Inverter controls & Power Control systems, managing assets via Grid Services.

Bring/communicate any non-technical standard issues or topics to additional groups/DPU.

Team

First Name	Last Name	Company
Gerry	Bingham	DOER
Russ	Aney	Parallel Products
Nachum	Sadan	GridEdge Networks
Doug	Pope	Pope Energy
Greg	Hunt	ZeroPoint Energy
Richard	Labrecque	Agilitas
Mrinmayee	Kale	NewLeaf Energy
John	Mosher	Solect Energy
Prasanth	Gopalakrishnan	Applied Systems Engineering Inc.

First Name	Last Name	Company
Daniel	McDonough	National Grid
Michael	Porcaro	National Grid
Justin	Woodard	National Grid
Mark	Bentson	Eversource
Shakir	Iqbal	Eversource
Ryan	West	Eversource
Michael	Taniwha	Eversource
Jeannie	Amber	Eversource
Paul	Krell	Unitil
John	Bonazoli	Unitil

Summary of Major Accomplishments & Upcoming Activities

Completed Activities:

DATE	DESCRIPTION OF ACTIVITY
12/11/2023	Kick off meeting with SMEs
1/22/2024	Review Flexibility SubGroup Charter, Defining Flexible Interconnections, Developer Feedback on Reporting
3/7/2024	Confirmed working definition and listed out scope
4/12/2024	Alignment on Initial Constraint Criterion (Thermal) and Initial Foundational Technologies (software, hardware/equipment, communication protocols - DNP3/IEEE 2030.5)
5/21/2024	Transmission system capabilities, impacts, & benefits and how this impacts our Flex Connect discussions moving forward. Thermal Constraints Data / Reporting for Viable Circuits – Preliminary List for early scaling.
6/18/2024	Initial IIRG – Flex Connect / DERMS language and deliverable list established for UL 3141, Failsafe items, & Data points
7/22/2024	UL 3141 "Outline of Investigation for Power Control Systems" criteria for equipment standardization – Review of scope, requirements, testing & optional testing. Out for industry review and comment.
9/30/24	Group alignment on carrying over existing IEEE 1547 subgroup scope. As we can move these to Flex Connect, then we can close the 1547 group. – Communications Protocols (DNP3, 2030.5, SunSpec Modbus), Customer Comms, & Grid Support functions
10/21/24	Introduction to defining fail safe mode operation/countermeasures: Communications Failures & Data Points (DNP3)
11/25/24	Advanced/Smart Inverter Functionality Presentation: Brian Lydic (IREC), Nachum Sadan (GridEdge Networks), and Jeffrey Albus (Eos Energy Enterprises)
1/21/25	Eversource presentation / Q&A of their recent Flexible Interconnection activities
2/19/25	Established Curtailment Catch-All Doc – Work to define "Curtailment"?, Defining policy on how curtailment will work for DERs, Industry thoughts on ways of curtailing, Feasibility analysis and curtailment studies, collaborative discussion between Utility and Industry
3/19/25	Refined Curtailment Catch-All Doc – Discussed %s in curtailment estimates, CIP areas, Hosting Capacity Fee, and potential use-cases not limited to 1) Full flexibility with estimated figures 2) "Hybrid" Model that ensures a confirmed amount of capacity in addition to flex capacity where available & not to exceed nameplate 3) Firm with schedule and adherence to schedule
5/29/25	Continued discussion on the Curtailment Catch-All Doc Flex connect schedules and implementation
6/18/25	How we study, what it means for customers 8760 models in connection with studies Different types of DE profiles, flex connect schedules and implementation
7/31/25	8760 models in connection with studies Software packages; excel, Cyme, Synergi, Windmill, PSSE Data cleaning; net load vs gross load
8/27/25	When to offer flex connection in the process, which feeders/stations are most suitable for flex connect Thermal and voltage limits Use cases; PV only, PV + ESS, ESS Only
9/30/25	IIRG Updates Voltage Constraints and how it relates to flex connect
10/30/25	Smart Inverter Settings Volt/Var MW vs. MWH
11/25/25	Abnormal Circuit Configurations Volt/Watt
Dec '25-Sep. '26	TSRG Sub Group Flex Connect was placed on hold. No updates.
Upcoming Activities:	
	Collaborate with IIRG to determine next steps for TSRG Flex Connect Sub Group

IIRG GROUP UPDATE

KATE TOHME/BRETT JACOBSON

IIRG GROUP

ENERGY STORAGE

Muhammad Khan & Greg Hunt

IIRG SUB-GROUP

IIRG Energy Storage Sub-Group Update

Mission Statement:

Scope of the IIRG Energy Storage Sub-Group is limited to energy storage topics related to interconnection and processes overseen by the DPU. Topics discussed by the group may tangentially relate to other elements, however each substantive topic must be centrally focused on its relation to energy storage.

Expected Group Output:

Recommendations from the group shall focus on process recommendations to the DPU for processes under their purview. Technical topics may come up in natural course and will be discussed to the extent practical. This sub-group will develop recommendations on technical topics when appropriate, however detailed discussion and decisions on technical topics will be deferred to the Technical Standards Review Group (TSRG).

Team

First Name	Last Name	Company/Affiliation
Muhammad	Khan	Eversource
Greg	Hunt	Zero Point Energy
Michael	Porcaro	National Grid
Jill	Duplessis	Eversource
John	Mosher	Agilitas Energy
Nathan	Walsh	National Grid
Justin	Ulrich	Unitil
Naera	Haghnazarian	Eversource
Jeremy	Kites	Unitil
Natalie	Treat	ACT
Sarah	Bresolin	ENGIE North America Inc.
Alex	Chaplin	New Leaf Energy
Chris	Modlish	AGO
Tom	Ferguson	MA DOER
Ryan	McGlothlin	Silo Electric
Gurudatta	Belavadi	New Leaf Energy

Summary of Major Accomplishments & Upcoming Activities

Completed Activities:

DATE	DESCRIPTION OF ACTIVITY
3/6/26	Closed topics 4 and 5, continuing topic 3 discussion, started topic 6 discussion
6/3/2026	Topic 7 DLS approach finalized and presented to IIRG
8/4/26	Started topic 8,9 and 10 discussion.
9/1/2026	Closed #8, continued discussion on topics 9 and 10, started topic 11 discussion

Topic		Status
1.	ESS Metering	Complete, submitted to IIRG Co-Chairs
2.	Open Loop Response Time	Complete, submitted to IIRG Co-Chairs
3.	Trip settings for standalone ESS, when flexed to zero	Complete – To be presented to IIRG Co-Chairs
4.	Future load effects on curtailment where flexing	Complete, topic deferred to Flex IX Subgroup
5.	Potential real power impacts from reactive power support	Complete, deferring to core IIRG as this is not ESS specific
6.	DCM applicability for ESS facilities	Complete, topic deferred to core IIRG Group
7.	DLS review – carried over from TSRG	Complete, approach presented to IIRG
8.	Volt-var policy alignment and inverter modeling	Complete, to be submitted to IIRG Co-Chairs
9.	Standardized 8760 profiles for Flex IX	In progress, profile development require coordination with IIRG Flex IX Subgroup
10.	Formation of group study areas and ESS participation	In progress
11.	Subgroup tasks related to DPU Order on ESS Tariff	In progress, ongoing discussion regarding potential ESS peak reduction benefits and operational requirements

FLEX INTERCONNECTIONS

MIKE PORCARO

IIRG SUB-GROUP

IIRG Flexible Connections Sub-Group Update

Mission Statement:

The Flex IX Subgroup's current scope is targeted to developing common, comprehensive Flex IX offerings, as well as estimated implementation plans that align with the existing provisions of the DG Interconnection Tariff. Individual electric distribution companies ("EDCs") may also offer additional, utility-specific Flex IX options at their discretion. Incentive compensation and the Long-Term System Planning Process ("LTSPP") are outside the scope of the Flex IX Subgroup's work at this time.

Expected Group Output:

Develop a guideline summarizing a statewide common understanding of Flex IX offerings for distributed generation ("DG") interconnection applicants in an iterative manner based on system, customer and market needs, which are expected to include:

1. Dynamic curtailment
2. Dispatch limiting schedules
3. Flex IX as a bridge to wires

Team

First Name	Last Name	Company
Michael	Porcaro	National Grid
Shakir	Iqbal	Eversource
Brett	Jacobson	Eversource
Jill	Duplessis	Eversource
Gerry	Bingham	MA DOER
Carson	Bullock	MA DOER
Courtney	Feeley Karp	MA DOER
Chris	Modlish	Attorney General's Office
Kayla	Burns	Attorney General's Office
Nikhil	Balakumar	Eclipse
Sean	Burke	BlueWave
Kate	Tohme	New Leaf
Joshua	Briggs	Lodestar Energy
Brian	Lydic	IREC
Dexter	Hendricks	CCSA

First Name	Last Name	Company
Daniel	Passarello	Nexamp
Andrew	Hickok	Solect Energy
Ami	Vyas	BlueWave
Tom	Figel	Reactive
Emma	Hillman	IREC
Silas	Bauer	BlueWave
Burke	Niner	Clearpath Energy
Meg	Howard	MassCEC
Muhammad	Khan	Eversource
Gerhard	Walker	Eversource
Mrinmayee	Kale	Pure Power
Russ	Aney	Parallel Products
Kelsey	Read	MassCEC
Jessica	Malcolm	Peak Power
Dmytro	Gladyshevskyi	Peak Power
Jayamali	Kasige	Peak Power

Summary of Major Accomplishments & Upcoming Activities

Completed Activities:

- Guideline drafted and circulated for subgroup review, including sections on
  - Dynamic control / actively managed Flex IX
  - Dispatch Limiting Schedule (DLS) connections
  - Temporary Flex IX opportunities (Flex-as-a-Bridge)
  - Curtailment strategies
  - Equipment & design considerations
  - Data sharing & study approach/info
- Guideline comments received and in process of incorporation
- Collaboration and coordination on approach to update DPU on group progress

Upcoming Activities:

- Finalize Guideline document
- Continue subgroup discussion on areas requiring further investigation
- Align on any beneficial edits/addition to Guideline for future release

DER EQUIPMENT REPLACEMENT

Andrew Hickock

IIRG SUB-GROUP

In-Service DER Equipment Replacement Subgroup

Mission:

To develop a comprehensive procedure to administer the replacement of in-service DER equipment.

Expected Group Output:

The recommended procedure from this group will be presented to the TSRG and the IIRG for potential inclusion of interconnection tariff changes.

For Discussion Purposes:

- "Like-for Like Inverter" shall mean and inverter with the same nameplate capacity or smaller, same fault current or smaller, same operating mode, and same grounding characteristics; or an **inverter listed in the TSRG Common Technical Manual as acceptable replacement.**

Fees

Will Kern

IIRG SUB-GROUP

IIRG: Fee Sub-Group

- **Past Topics**
  - Common System Modification (CSM) Fee
    - Approved by the DPU 8/12/26
    - To be implemented by 11/1/26
  - Application Fee
    - Decision Pending on next steps

- **Future Topics**
  - Equipment Replacement Fee
    - Pending TSRG final decision on technical requirements
    - Will be the next topic cover by the Fee Subgroup
    - Date TBD
  - Pre-Application Fee
    - Review of Pre-App process and fee
    - Date TBD

Data Transparency (Maps & Reporting)

Gerry Bingham

IIRG SUB-GROUP

GROUP STUDY STATUS UPDATES

UPDATE BY EDC'S

Group Study Status Update

- The EDCs have provided the below links for Group Study status updates
- Status is updated monthly
- Intended to be generally informative on Group Study timeline expectations
- Included here for reference and general discussion, however Group specific questions may need to be deferred to a separate Group specific forum

- **Eversource**
  - https://www.eversource.com/content/residential/about/doing-business-with-us/interconnections/massachusetts/distribution-group-studies
- **National Grid**
  - https://gridforce.my.site.com/s/article/MA-Distribution-Group-Study-Documents
- **Unitil**
  - N/A

OPERATIONAL PARAMETERS FOR ENERGY STORAGE SYSTEMS (OPESS) TARIFF

DOCKET UPDATE

OPESS Tariff Directives

- On Aug 11th, Department of Public Utiliites approved the Operational Parameters for ESS docket with some modifications
- Each EDC filed their Compliance tariffs memorializing the approved provisions on September 10th 2026
  - The new parameters will be effective October 1st 2026 following DPU's approval of the compliance tariffs
- Going forward:
  - Each EDC would include Dispatch Limiting Schedule (DLS) as an informational appendix to their ESS Tariff
    - Any future changes to the DLS must be consulted with the Stakeholders through the ESIRG platform (now as part of IIRG ESS sub-group)
- OPESS Tariff Docket numbers per EDC:
  - National Grid: 23-115
  - Unitil: 23-117
  - Eversource: 23-126
- Please utilize MA DPU File room for additional information related to each EDC's OPESS Tariff provisions:

https://eeaonline.eea.state.ma.us/dpu/fileroom/#/dashboard

TECHNICAL STANDARDS UPDATE

EDC'S UPDATE

EDC Technical Standards

- As needed, EDC Technical Standards may be updated

- **National Grid**
  - NG to provide Updates

- **Unitil**
  - Unitil to provide Updates

- **Eversource**
  - No new updates to report.

THANK YOU!

Next Quarterly Meeting:

December 10th 2026, 1PM-4PM

Send topics for future meetings to:

Shakir Iqbal (shakir.Iqbal@eversource.com)
Tony Morreale (tmorreale@ligconsultants.com)