

WIRAB Special Monthly Meeting

September 3, 2026



Meeting Agenda



WIRAB Activities:

Release of the Technical Resource for State Regulators on Large Load Interconnection



Upcoming WIRAB Meetings

Meeting Logistics



Recording

This meeting is being recorded and **will be posted publicly on the WIEB website.**

By participating, you consent to your name, voice, and image being part of the recording.



How to Participate

Members entered as Panelists
All other participants entered as attendees

If you need to be promoted to Panelist, please **“Raise Hand”**

Feel free to use the **chat** for comments or clarifying questions



Audio Etiquette

Anyone can **“Raise Hand”** feature to ask questions or provide input

Please **mute yourself** when not speaking

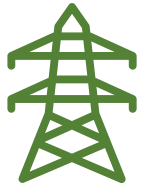
If joining by phone, please identify yourself in the chat



Materials & Follow-Up

Slides and materials will be shared after the meeting and be made available on the webpage

WIRAB's 2026 Strategic Initiatives



Long-term Planning Data and Models

Initiative 1: Advise WECC to work with states, provinces, and planning entities to improve long-term planning assumptions, data, and models to meet evolving regulatory and reliability needs.



Large-load Performance Requirements

Initiative 2: Advise WECC, NERC, and stakeholders to develop common interconnection and performance requirements for large loads—especially data centers—to ensure reliable and secure integration into the Bulk Power System.



Resource Adequacy with Electrification and Large Loads

Initiative 3: Advise WECC to study the impacts of rapid electrification and large load growth on reliability, including regional and seasonal resource adequacy trends.



Energy Storage Reliability Standards

Initiative 4: Advise WECC and the ERO to assess whether reliability standards adequately reflect the growing role of energy storage technologies in supporting grid stability and essential reliability services

WIRAB Large Load Projects



State Oversight Resource for Large Load Interconnections

- Project Goal: develop a state-focused technical oversight resource to support regulators and staff in asking informed, strategic questions when evaluating large load interconnection requests.
- Designed to complement the interconnection harmonization effort
- Follows successful WIRAB IBR product model



Webinar Agenda & Introductions

Welcome & Opening Remarks

Commissioner Lea Márquez Peterson, WIRAB Chair

Part 1: Technical Resource Walkthrough

Ryan Quint & Kyle Thomas, Elevate Energy Consulting

Part 2: Public Utility Commission Perspective

Bret Stevens, Oregon Public Utilities Commission

Part 3: State Energy Office Perspective

Keith Hay, Colorado Energy Office

Part 4: State Energy Office Perspective

Evan Rogers, New Mexico EMNRD

Part 5: Moderated Panel / Open Q&A

Moderated by WIEB Staff

Moderator: Eric Baran, Senior Program Manager – Electric System Reliability, WIEB

Panelists:

- **Ryan Quint**, Founder and Chief Executive Officer, Elevate Energy Consulting
- **Kyle Thomas**, Chief Operating Officer and Vice President, Engineering and Compliance Services, Elevate Energy Consulting
- **Bret Stevens**, Senior Economist, Regulatory Strategy, Oregon Public Utility Commission
- **Keith Hay**, Managing Director, Policy, Colorado Energy Office
- **Evan Rogers**, Economist, Energy Planning Bureau, New Mexico Energy, Minerals, and Natural Resources Department

Opening Remarks

Commissioner Lea Márquez Peterson,
WIRAB Chair





Technical Resource for State Regulators and Commissioners

Oversight of Large Load Interconnections

Kyle Thomas, PE, VP, *Engineering and Compliance Services*

Ryan D. Quint, PhD, PE, *President and CEO*

WIRAB Large Load Technical Resource Page



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WIRAB Technical Resource: Oversight of Large Load Interconnection in the West

September 3, 2026

➤ Announcements, WIRAB Library, WIRAB Meetings



Webpage: <https://www.westernenergyboard.org/wirab-technical-resource-oversight-of-large-load-interconnection-in-the-west/>

Technical Resource: https://www.westernenergyboard.org/wp-content/uploads/WIRAB_Large-Load-Technical-Resource-for-State-Regulators.pdf

Overview of Technical Resource for States



Technical Resource for State Regulators on Large Load Interconnections

August 26, 2026

Purpose of this Resource

This *Technical Resource for State Regulators on Large Load Interconnection* provides state public utility commissioners and commission staff with technical background, guiding questions, and oversight considerations for the reliable integration of large loads, including data centers, cryptocurrency mining facilities, computational loads, and more, into the Western Interconnection.

The resource translates emerging technical standards and best practices into actionable oversight tools for use in Integrated Resource Plans (IRPs), rate cases, transmission and distribution investment reviews, and other regulatory proceedings. While this document was developed with public utility commission (PUC) oversight in mind, the resource is also valuable to the utilities, including investor-owned, consumer-owned, and municipal utilities, who are integrating large amounts of large loads on their systems.

Background

Utilities across the West are receiving large load interconnection requests from individual customers ranging from 50 MW to more than 1,000 MW — sizes that can rival entire utility systems in parts of the region. Commissioned by WIRAB and prepared by Elevate Energy Consulting, this resource draws on a survey of Western commissions and state energy offices, interviews with state regulatory staff, and a review of industry reports and large load proceedings through mid-2026. It supports oversight in tariff proceedings, Energy Service Agreements (ESA) reviews, IRPs, interconnection dockets, and rate cases.

Why This Matters in the West

- **Rapid Growth** — More than 80 percent of new large load requests in the Western Interconnection are data center facilities with new and unique operational characteristics.
- **Unique Risks** — High penetrations of large loads can introduce vulnerabilities in modeling, protection coordination, and operational performance, as demonstrated by recent large-scale tripping events.
- **State Commission Authority** — State commissions can set expectations, require transparency, and ensure utilities are prepared to integrate large loads without compromising affordability, reliability, or resilience.
- **Regional Coordination** — Aligning practices with neighboring jurisdictions, WECC and NERC guidance, and international standards can reduce costs, improve performance, and enhance system stability.

Purpose:

- Support state public utility commissioners, commission staff, and state energy offices exercise informed oversight of large load interconnections.
 - Large cloud and artificial intelligence (AI) data centers, cryptocurrency mining operations, hydrogen electrolyzers, large manufacturing, other industrial facilities
- Help regulators stay informed and engage with utilities, developers, and stakeholders during large load tariff proceedings, electric service agreement (ESA) and special contract reviews, integrated resource plans (IRPs), interconnection-related dockets, rate cases, and rulemakings.
- Help regulators (i) protect existing customers, (ii) ensure just and reasonable rates, (iii) oversee prudent utility investment, (iv) support economic development, and (v) help maintain a reliable and resilient electric grid during a period of massive demand growth.

How to Use This Resource:

- Each topic is introduced in plain language, connected to grid reliability issues where relevant, and paired with practical questions regulators can ask during interactions with stakeholders
- Guiding questions are not universal — should be adapted to each state's authority, utility system, and proceedings.

Awareness of Federal Mandates

- Federal activity moving quickly, should be tracked by regulatory offices
 - FERC show cause orders
 - FERC mandate to NERC
 - NERC computational load efforts
 - NERC Phase 1 standards
 - NERC future standards roadmap

Aspect	State Regulators (Retail Service)	FERC / NERC (Transmission And BPS)
Regulatory Authority	Retail rates and terms of service; large load tariffs, ESAs, and special contracts; IRP and resource adequacy oversight; siting (by state)	FERC: transmission service, wholesale rates, and interconnection policy NERC: mandatory Reliability Standards for applicable registered entities
Interconnection Process	Distribution-level connections and retail service arrangements; state- or utility-defined large load processes	Transmission service requests under the OATT; RTO/ISO processes, where applicable; FERC show cause orders regarding RTO large load rules
Technical Requirements	Conditions in tariffs, ESAs, and utility service rules; state adoption of utility facility connection requirements	NERC FAC-001/FAC-002 facility interconnection requirements and studies apply to utilities; no large load-specific requirements exist yet
Cost Allocation	Retail cost allocation, rate design, and protection of existing customer classes	Allocation and recovery of transmission network upgrade costs under FERC policy
Possible Gap	Reliability obligations largely depend on what states and utilities require by contract and tariff	NERC standards development for large loads is underway but not yet in effect, multi-year implementation expected

State & Regional Action is Paramount

Full implementation of the upcoming NERC Reliability Standards development efforts for computational loads is expected to be years away. Until then, requirements that Western states and utilities put into interconnection requirements, processes, tariffs, and contracts are the primary line of defense from a reliability perspective.

Key Recommendations for State Regulators

- Establish a large load framework before applications force one.
- Ensure growth pays for growth.
- Scale financial assurances to the risk.
- Demand forecast discipline and transparency.
- Bring reliability into the tariff or other mandatory requirements document, not just the interconnection agreement.
- Encourage utilities to adopt rigorous technical interconnection requirements for large loads.
- Encourage study rigor proportional to size and system strength.
- Integrate large loads into resource adequacy and IRP processes.
- Set clear rules for co-location and bring-your-own-generation.
- Reward verified flexibility.
- Coordinate regionally and stay aligned with federal developments.

General Tips

- Ask “why” when utilities deviate from national or regional standards.
- Tie technical requirements to ratepayer impacts and avoided costs.
- Require regular public reporting on large load performance and compliance.
- Coordinate with other commissions to align practices regionally.

Ten Priority Issues and Guiding Questions

1. Phantom Demand and Load Forecast Uncertainty
2. Speculative Requests, Queue Management, and Developer Readiness
3. Cost Allocation and Protecting Existing Customers
4. Financial Assurances and Stranded Asset Risk
5. Tariff Design, Special Contracts, and Commission Review
6. Resource Adequacy and Alignment with Resource Planning
7. Interconnection Process Transparency, Timelines, and Study Rigor
8. Reliability and Technical Performance of Large Loads
9. Co-Location and Bring-Your-Own-Generation (BYOG)
10. Flexibility, Curtailment, and Demand Response

Speculative Requests, Queue Mgmt, and Developer Readiness

Interconnection queues fill with speculative projects when entry is cheap. Congested, opaque queues delay credible projects, consume scarce study engineering resources, and degrade the quality of downstream reliability studies since speculative requests will skew study results. Several Western utilities have found that meaningful, non-refundable study fees, deposits, site control requirements, and pay-for-what-you-request commitments quickly separate serious developers from speculators. Transparent queues with defined milestones and stage gates also give commissions visibility into what is likely to come.

Core Guiding Questions:

- What readiness criteria (deposits, fees, site control, financial showings) and milestone requirements must a developer meet before utility study resources and system capacity are committed?
- Is the queue processed first-come-first-served, cluster/batch, or some other bespoke methodology?
- Is queue status transparent to the commission and, where appropriate, to the public?

Additional Questions:

- What non-refundable costs or attestations deter speculative or duplicative applications? What evidence suggests they are working?
- When capacity is constrained, what criteria determine which loads proceed first (e.g., readiness, reliability impact, economic value) and who decides?
- What happens when a project withdraws from the queue? How are deposits treated, and how are restudy costs for remaining projects handled?
- Does the process clearly define stages from interconnection application through energization, with timelines and obligations at each gate?

Reliability and Technical Performance of Large Loads

Modern large loads behave differently than conventional industrial loads; data centers are power electronic and introduce similar risks to inverter-based generation. Understanding, modeling, and studying their impact on the BPS is key. Computational load-specific risks should be carefully and thoroughly studied.

Core Guiding Questions:

- What ride-through and other performance requirements are in place? Where were they drawn from?
- How frequently are these performance requirements reviewed and updated to keep pace with rapidly evolving industry practices?
- Has the utility assessed the risk of simultaneous loss of concentrated loads or forced oscillations in its service area?

Additional Questions:

- Are large load customers required to provide verified and validated dynamic models for use in interconnection and planning studies?
- How do the facility's UPS and backup transfer schemes behave during grid disturbances? Does the utility require this info as obligation of interconnection?
- What power quality requirements (e.g., harmonics, flicker, rapid load fluctuation) apply, who monitors compliance, and who pays for mitigations?
- How are load facility protection settings coordinated with utility protection system design and are they verified at commissioning and after modifications?
- Does the utility have telemetry, disturbance monitoring, and communication protocols in place? Are large loads in operating procedures / load shed?
- Is the utility adopting or plan to adopt the WIRAB template interconnection requirements? Are practices aligned with NERC recommendations?

Update on Template Interconnection Requirements

July 2026 Registration Snapshot: Registered Participants: 141; Organizations Represented: 114

Category	Registrants
Utilities & Power Providers	63
Government & Regulators	14
Reliability & Market Organizations	9
Developers, Large Loads & Technology	12
Engineering, Consulting & Legal	12
Research & Trade Associations	12
Other / Unclassified	19

Participant Engagement

45 Active Participants

- Interested in contributing directly to development of the Large Load Interconnection Requirements Template

96 Monitoring Participants

- Interested in receiving updates and reviewing project outputs

Update on Template Interconnection Requirements

Date	Topics
✓ May 28, 2026 (11:00 a.m.–12:00 p.m. MT)	Kickoff: Background, Goals, and Timeline
✓ June 25, 2026 (11:00 a.m.–12:00 p.m. MT)	Large Load Interconnection Requirements Review
✓ July 16, 2026 (11:00 a.m.–12:00 p.m. MT)	Large Load Interconnection Requirements Template Section #1
✓ August 13, 2026 (11:00 a.m.–12:00 p.m. MT)	Large Load Interconnection Requirements Template Section #2
September 24, 2026 (11:00 a.m.–12:00 p.m. MT)	Large Load Interconnection Requirements Template Section #3
October 22, 2026 (11:00 a.m.–12:00 p.m. MT)	Template Review and Finalizing
November 12, 2026 (11:00 a.m.–12:00 p.m. MT)	Template Finalizing and Next Steps
December 3, 2026 (11:00 a.m.–12:00 p.m. MT)	Industry and Public Webinar

Next Steps:

- Industry Advisory Group meetings through November
- Industry webinar planned for early December (more details to come)



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Public Utility Commission Perspective

Bret Stevens, Senior Economist,
Regulatory Strategy, Oregon Public
Utility Commission



State Energy Office Perspective

Keith Hay, Managing Director, Policy,
Colorado Energy Office



COLORADO
Energy Office

State Energy Office Perspective

Evan Rogers, Economist, Energy
Planning Bureau, New Mexico Energy,
Minerals, and Natural Resources
Department



Energy, Minerals and Natural Resources Department



Questions?

Please submit questions using the chat box or raise your hand



Technical Resource for State Regulators and Commissioners *Oversight of Large Load Interconnections*

August 2026

Purpose

This technical resource is designed to support state public utility commissioners, commission staff, and state energy offices exercise informed oversight of large load interconnections. "Large loads" predominantly include large cloud and artificial intelligence (AI) data centers, and include cryptocurrency mining operations, hydrogen electrolyzers, large manufacturing, and other industrial facilities. Industry is experiencing large load interconnection requests from individual customers whose demand range from 50 MW to more than 1,000+ MW, which can rival the size of entire utility systems in parts of the West. The guiding questions in this resource are intended to help regulators stay informed about key topics and engage with utilities, developers, and stakeholders during large load tariff proceedings, electric service agreement (ESA) and special contract reviews, integrated resource plans (IRPs), interconnection-related dockets, rate cases, and rulemakings. The goal is to help regulators (i) protect existing customers, (ii) ensure just and reasonable rates, (iii) oversee prudent utility investment, (iv) support economic development, and (v) help maintain a reliable and resilient electric grid during a period of massive demand growth.

This resource was commissioned by the Western Interconnection Regional Advisory Body (WIRAB) and completed by [Elevate Energy Consulting](#). It is informed by a survey of Western commissions and energy offices, interviews with state regulatory staff across the West, and a review of industry reports, reliability analyses, and other large load proceedings through mid-2026.

How to Use This Resource:

This resource is intended to be focused and high-level: each topic is introduced in plain language, connected to grid reliability issues where relevant, and paired with practical questions regulators can ask during interactions with their stakeholders. The guiding questions are not a universal checklist; they should be adapted to each state's authority, utility system, and proceedings. This resource does not substitute for legal advice, independent engineering analysis, or a detailed review of project-specific costs and reliability impacts.

Applicability

Oversight of large loads is split across state and federal jurisdictions, and unlike generation, much of it is not yet covered by mandatory federal reliability requirements.¹ State regulators have authority over retail service including who may serve a large load, rates and terms of that service, large load tariffs, special contracts, resource planning, and (in many states) facility siting. The Federal Energy Regulatory Commission (FERC) has authority over transmission service and wholesale markets, and the North American Electric Reliability Corporation (NERC) administers mandatory Reliability Standards for users,

¹ These are actively under development with FERC's [show cause orders](#) to each of the six regional grid operators under its jurisdiction and with NERC's [Large Load Action Plan](#) and Reliability Standards [development efforts](#).

Upcoming Meetings



WIRAB Monthly Meeting

First Thursday of the Month at 2:00 PM MT

Next Meeting: October 1, 2026 at 2:00 PM MT

Fall 2026 Joint CREPC-WIRAB Meeting

October 13-15, 2026 in Missoula, MT

<https://www.westernenergyboard.org/meeting-calendar/>

Thank You!

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