Discussion: Are Reliability Standards Keeping Pace with Energy Storage?

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WECC Energy Storage Forum

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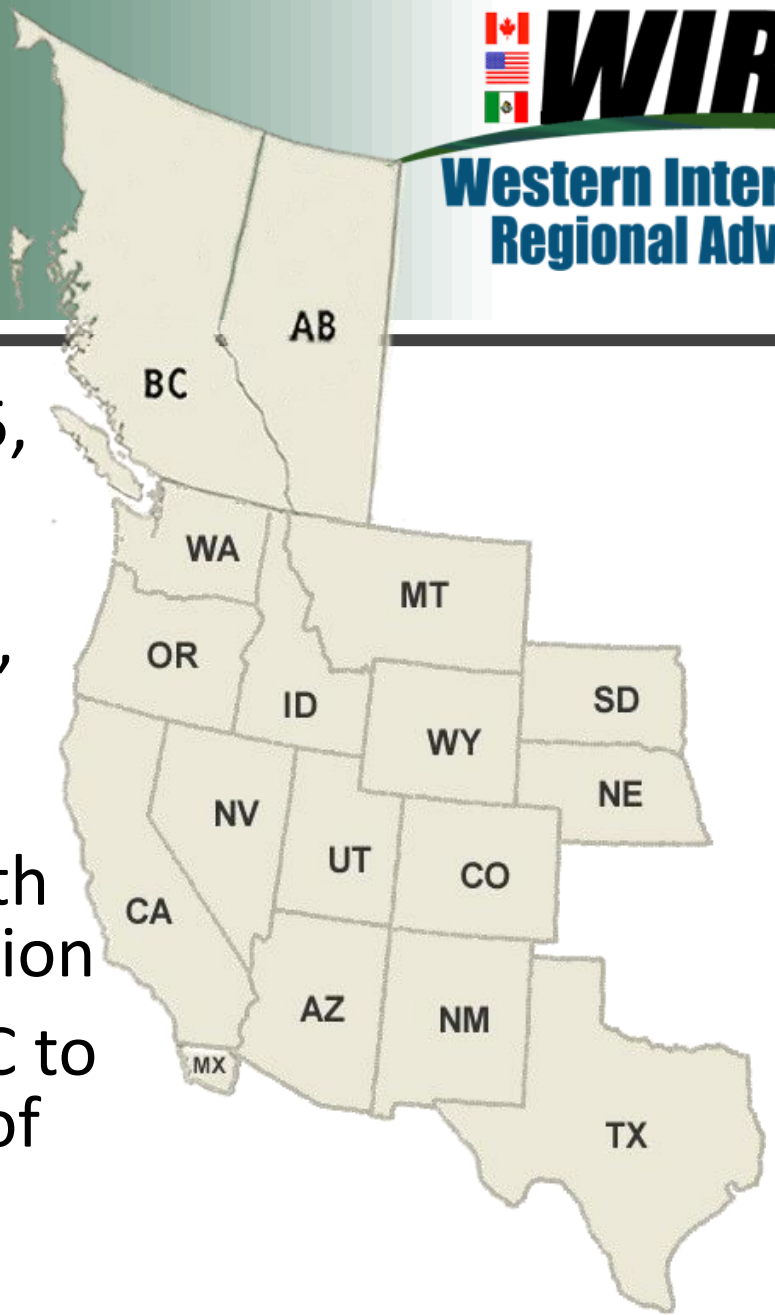
WIRAB
Western Interconnection Regional Advisory Body

Who is WIRAB?

Western Interconnection Regional Advisory Body

- **Statutory Authority:** Established in 2005, as an independent body with statutory authority under Section 215(j) of the Federal Power Act to Advise FERC, NERC, and WECC on reliability matters in the Western Interconnection.
- **Membership:** All state and provinces with load served in the Western Interconnection
- **Funding:** Assessments approved by FERC to load serving entities under Section 215 of the Federal Power Act.



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

Why This Matters Now

- **Storage growth is accelerating**
  - BESS project to **exceed 12% of nameplate capacity** in the West by 2032 (WECC Western Assessment of Resource Adequacy, 2023)
  - Up from just 1.4% in 2023
- Most new battery capacity will be hybridized with solar PV
- These resources are increasingly relied upon for:
  - Peak Capacity
  - Frequency Response
  - Voltage Control
  - Fault Ride-through
- **We don’t want to wait until there is a system event traced back to uncoordinated requirements for energy storage resources.**

Federal, State, and Regional Policy Signals

- Federal and state policy signals accelerating deployment:
  - **FERC Orders 841 & 2222** – Enable storage in markets.
  - **IRA storage tax credits spurring hybrid systems**.
  - State mandates in states like CA, CO, NM, OR, WA expanding BESS procurement.
- IRPs across the West now rely on GW of storage
- Resource adequacy programs provide credit to energy storage resources

Key Gaps Identified

- **Current Challenges:**
  - Standards not always aligned with how storage performs (e.g., frequency response, ride-through).
  - Hybrid systems complexity is often not well captured
  - Modeling inconsistencies across utilities and balancing authorities
  - Grid-forming inverters (GFM) encouraged but not required
- **Guidance but not mandates:**
  - **NERC 2023 BESS Guideline** – Highlights need for improved modeling under abnormal conditions
  - **NERC GFM White Paper** – Introduces GFM functions but lacks enforceable specs

Implications for the West

- Storage will play a central role in balancing and flexibility services.
- Without clear and modern requirements, we risk:
  - Underutilizing capabilities
  - Mischaracterizing resources in planning
  - Losing reliability contributions under stress conditions
- WECC is well-positioned to provide regional leadership.

Questions for the Energy Storage Forum

Western Interconnection Regional Advisory Body

- Are Reliability Standards Keeping Pace with Energy Storage especially BESS?
- Where are you encountering limitations in current standards or modeling practices when it comes to new energy storage resources?
- How can WECC/ERO and its stakeholders help clarify expectations for storage?
- What role should performance-based requirements play for BESS and hybrid resources?
- Are any challenges addressed with the pending IBR Standards? Are there attributes that are missing?
- Are energy storage resources being poorly captured in current modeling or operational planning?
- How do we ensure consistency across jurisdictions and operators?
- What do we do next?

Thank You!

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