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NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

LDES – The future of the Grid

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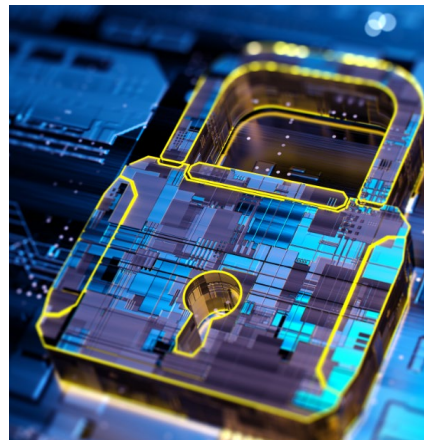
RELIABILITY | RESILIENCE | SECURITY

- Assure the reliability, resilience, and security of the North American Bulk Power System (BPS)
 - Develops and Enforces Reliability Standards
 - Annually assesses seasonal and long-term reliability
 - Monitors the BPS through system awareness
 - Educates, trains, and certifies industry personnel

Critical Infrastructure
Interdependencies



Security Risks



Extreme Events



Grid Transformation





Energy: Tackle the challenge of grid transformation and climate change-driven, extreme weather



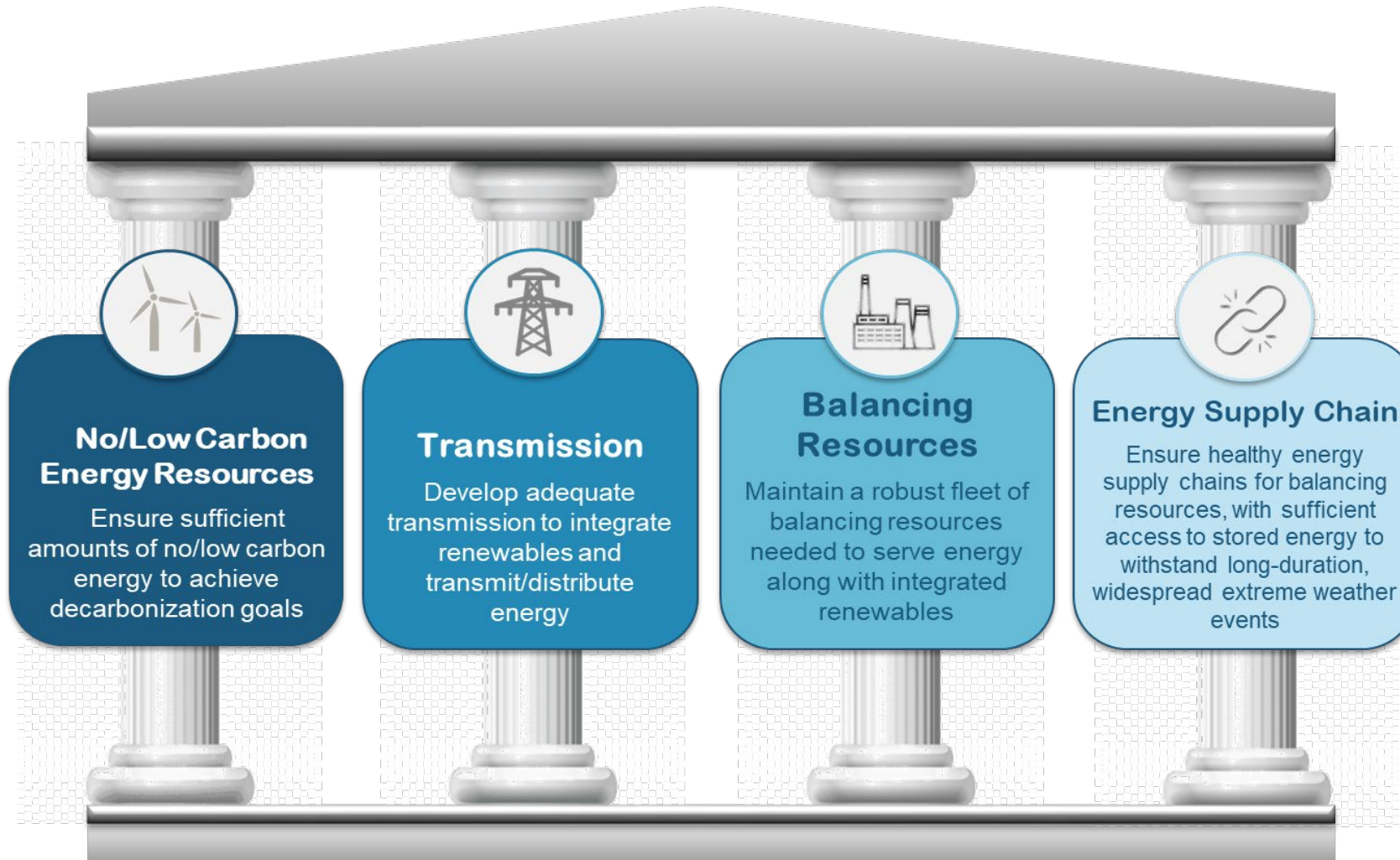
Security: Move the needle by focusing on supply chain, Information Technology (IT) and Operational Technology (OT) system monitoring, cyber design, and evolution of the Critical Infrastructure Protection (CIP) Standards



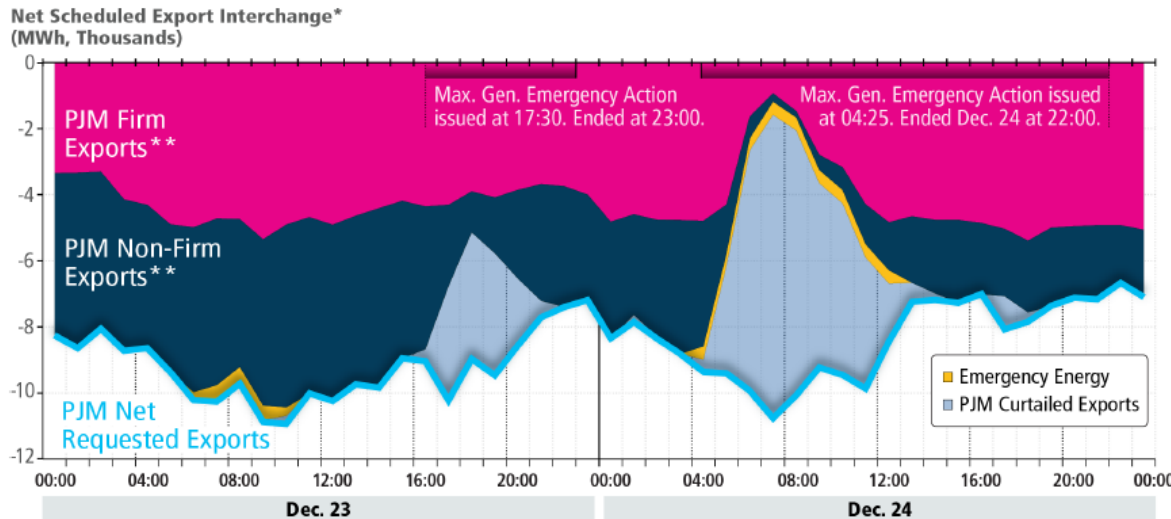
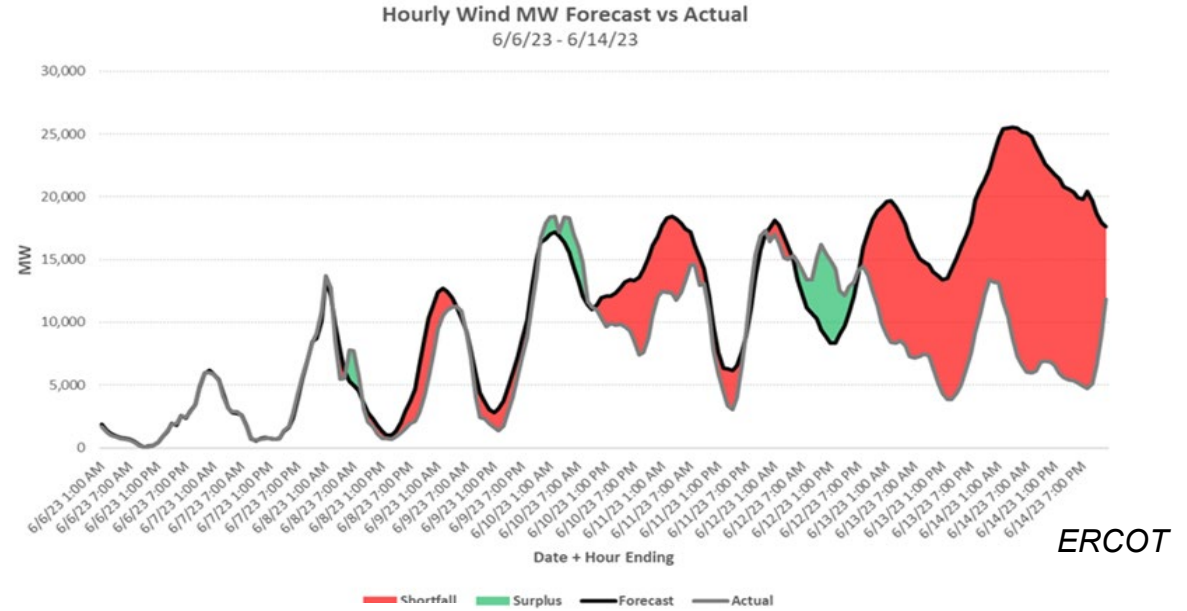
Agility: Tool the company to be more nimble in key areas, particularly standards development, internal operational processes



Sustainability: Invest in ERO systematic controls, eliminate single points of failure, strengthen succession planning, and ensure robust cyber security protections for all systems



ERCOT, SPP, MISO: A “wind drought” caused 60 GW of installed wind capacity to generate 300 MW



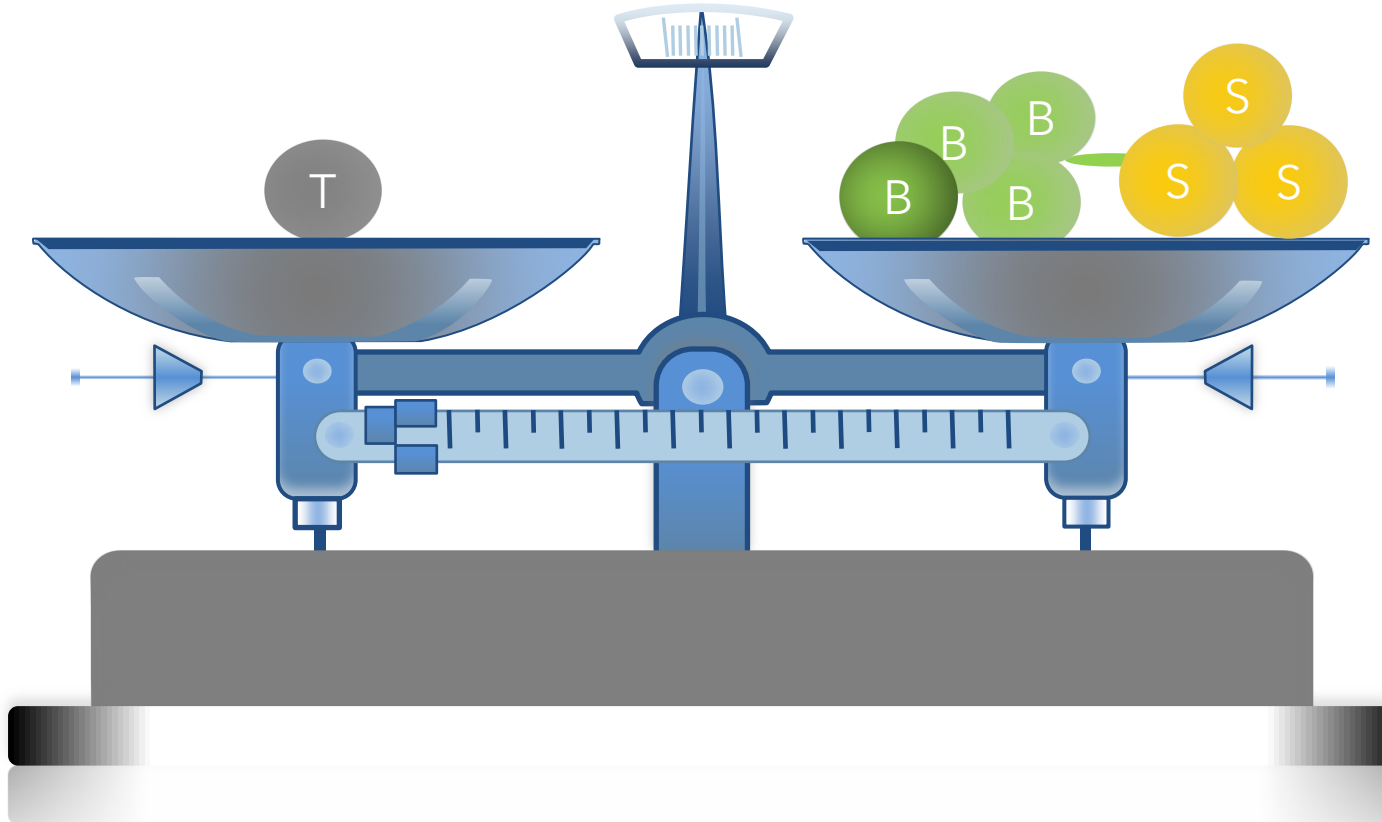
PJM: Transmission system during extreme cold weather limited the ability to export to support southern neighbors



*Dynamic Transfers not included; **Excludes Emergency

Retire 100 MW Base Load Generation

- 100 MW Traditional Base Load generates 2400 MWh




300 MW Solar + 400 MW Batteries


- Assume 8 hours of sunlight
 - Assume no losses in conversion
- Usage
- 100 MW solar for 8 hours (800 MWh)
 - 400 MW storage for 4 hour discharge (1600 MWh)
- Storage
- 200 MW solar to charge storage 8 hours (1600 MWh)

- Footprint
- Natural Resources
- Solar/Wind Drought
- Ramping capabilities

- Current Communications Products:
 - Strategic Communications Plan
 - Talking Points
 - [Quick Reference Guides](#)
 - [FAQs](#)
 - [Fact Sheets](#)
 - [Educational Materials](#)
 - [Quarterly Updates](#)
 - EROCG Monthly Updates



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IBR
REGISTRATION
INITIATIVE

Quick Reference Guide: IBR Registration Initiative

May 2024

As part of its [Inverter-Based Resource Strategy](#), NERC is dedicated to identifying and addressing challenges associated with inverter-based resources (IBR) as the penetration of these resources continues to increase. ERO Enterprise assessments identified a reliability gap associated with the increasing integration of IBRs as part of the grid in which a significant level of bulk power system-connected IBR owners and operators are not yet required to register with NERC or adhere to its Reliability Standards.

In response, FERC issued an [order](#) in 2022 directing NERC to identify and register owners and operators of currently unregistered bulk power system-connected IBRs. Working closely with industry and stakeholders, NERC is executing a FERC-approved work plan to achieve the identification and registration directive by 2026. Resources are also posted on the [Registration page](#) of the NERC website.

IBR Registration Milestones

Phase 1: May 2023–May 2024	Phase 2: May 2024–May 2025	Phase 3: May 2025–May 2026
<ul style="list-style-type: none"> Complete Rules of Procedure revisions and approvals Commence Category 2 GO and GOP candidate outreach and education (e.g., through trade organizations) 	<ul style="list-style-type: none"> Complete identification of Category 2 GO and GOP candidates Continue Category 2 GO and GOP candidate outreach and education (e.g., quarterly updates, webinars, workshops, etc.) 	<ul style="list-style-type: none"> Complete registration of Category 2 GO and GOP candidates thereafter subject to applicable NERC Reliability Standards Conduct specific Category 2 GO and GOP outreach and education (e.g., quarterly updates, webinars, workshops, etc.)



Key Activities



- NERC’s Board of Trustees approved proposed Rules of Procedure revisions on February 22.
- NERC filed its [proposed revisions](#) with FERC on March 19.
- NERC published its [Q1 2024 Quarterly Update](#) on April 2.
- NEW** NERC submitted its [quarterly work plan update](#) to FERC on May 9.

Available Resources

- [Frequently Asked Questions – Rules of Procedure Approach to Registration of Unregistered IBRs](#)
- [IBR Webinar Series and FAQs](#)
- [Quick Reference Guide: Candidate for Registration](#)
- [Quick Reference Guide: Inverter-Based Resource Activities](#)
- [NERC Registration Page and Standards Page](#)
- [Learn about NERC and Join the E-ISAC](#)

Learn More About NERC and the E-ISAC

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Questions and Answers