



ITCS Status Update

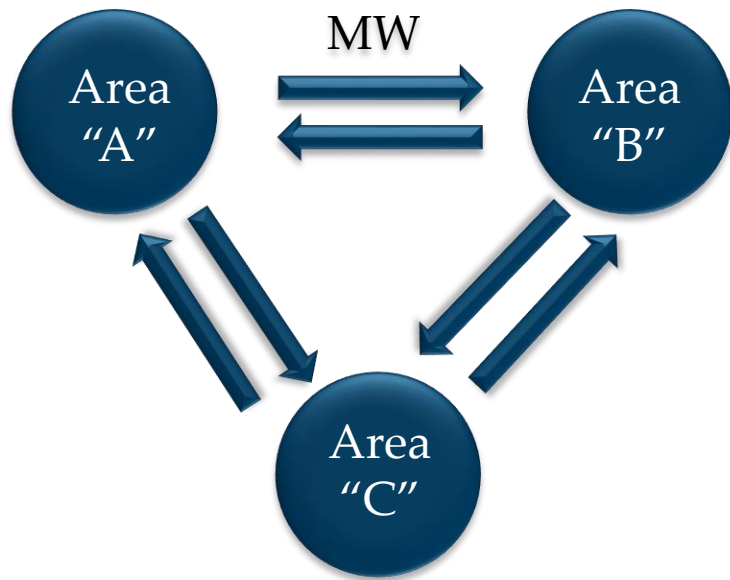
February 27-29, 2024

Vic Howell

Director – Reliability
Assessments and Modeling

Interregional Transfer Capability Study

- Interregional Transfer Capability Study = ITCS
- What is Transfer Capability?



Total transfer capability: the amount of electric power that can be moved or transferred reliably from one area to another area of the interconnected transmission systems by way of all transmission lines (or paths) between those areas under specified system conditions, or such definition as contained in Commission-approved Reliability Standards.

ITCS Project Overview

Fiscal Responsibility Act of 2023, Section 322

Congress directed that, in consultation with the Regional Entities and transmitting utilities, NERC shall conduct a study containing three elements:

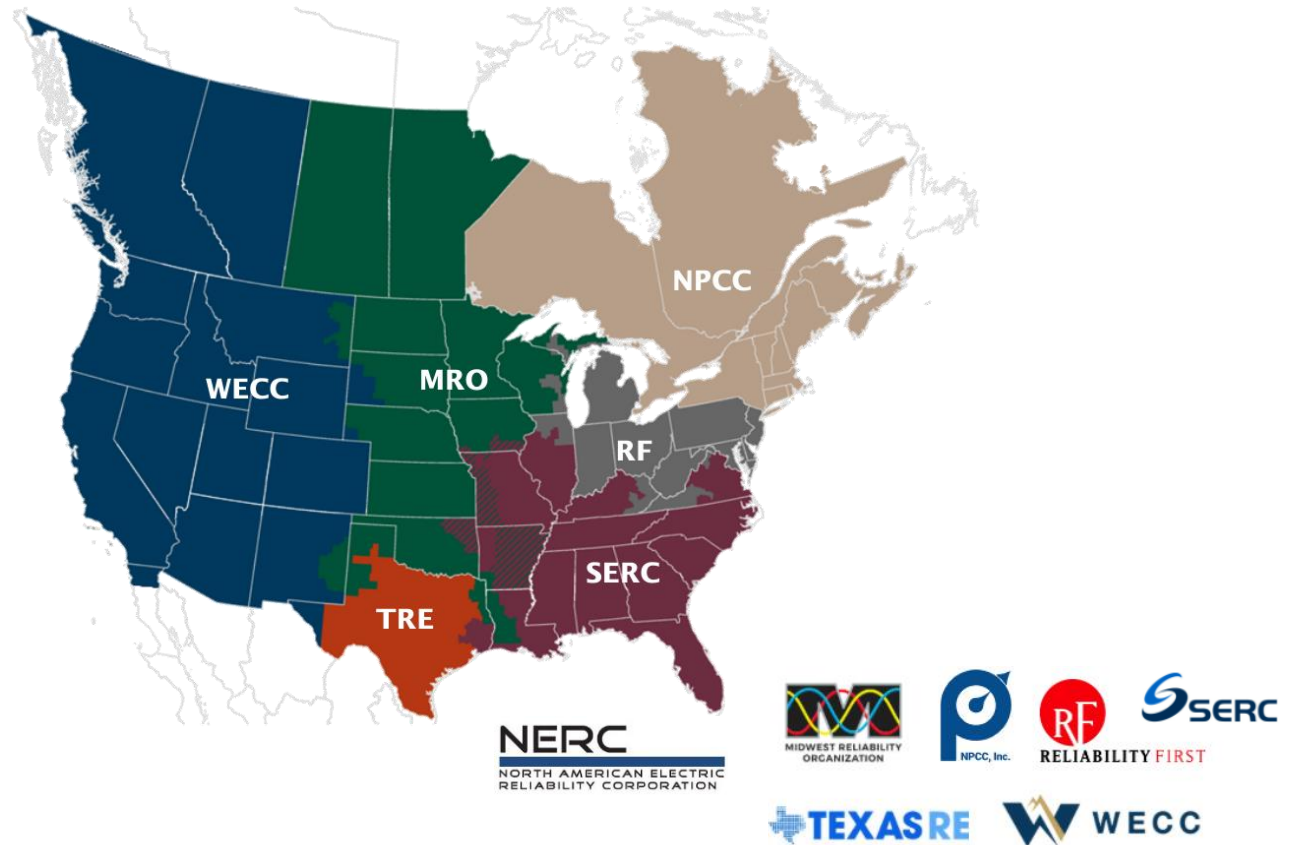
- **Phase 1 Objective:** Determine the total transfer capability between neighboring transmission planning regions.
- **Phase 2 Objective:** Identify “prudent” additional transfer capability between neighboring areas to resolve reliability issues in the future.
- **Phase 3 Objective:** Identify mechanisms to achieve and sustain the identified transfer capability and any recommended enhancements.

What the Study is NOT

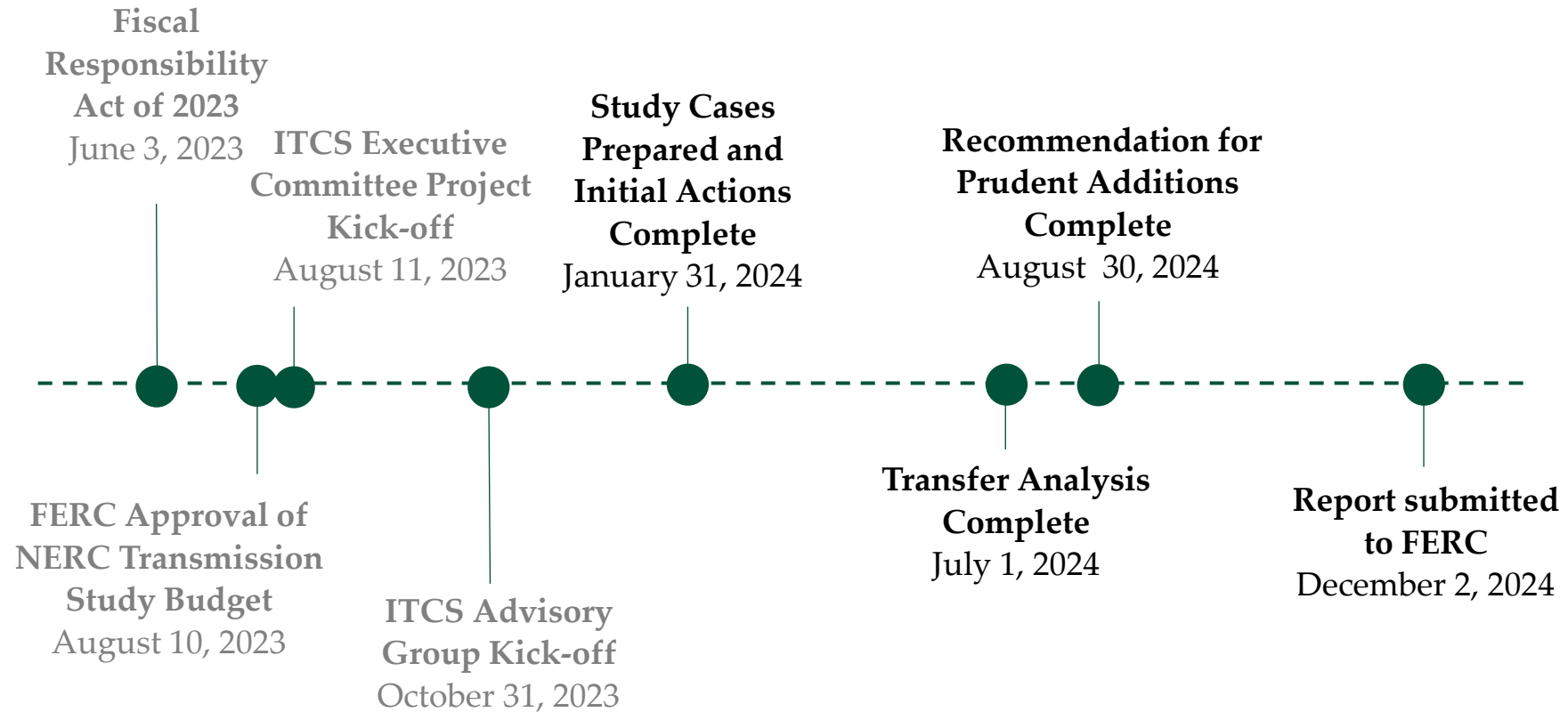
- Planning study
- Replacement for Transmission Expansion Analysis and Interregional Planning groups
- No recommendations for specific projects (generation, transmission, etc.)
- Will focus on WHAT...not HOW
- A complete or final solution

Entities Involved

- NERC and the six Regional Entities in consultation with transmitting utilities
- NERC Advisory Group
- WECC Advisory Group
- Contractors—PowerGEM and Telos Energy



ITCS Timeline Overview



Phase 1: Method

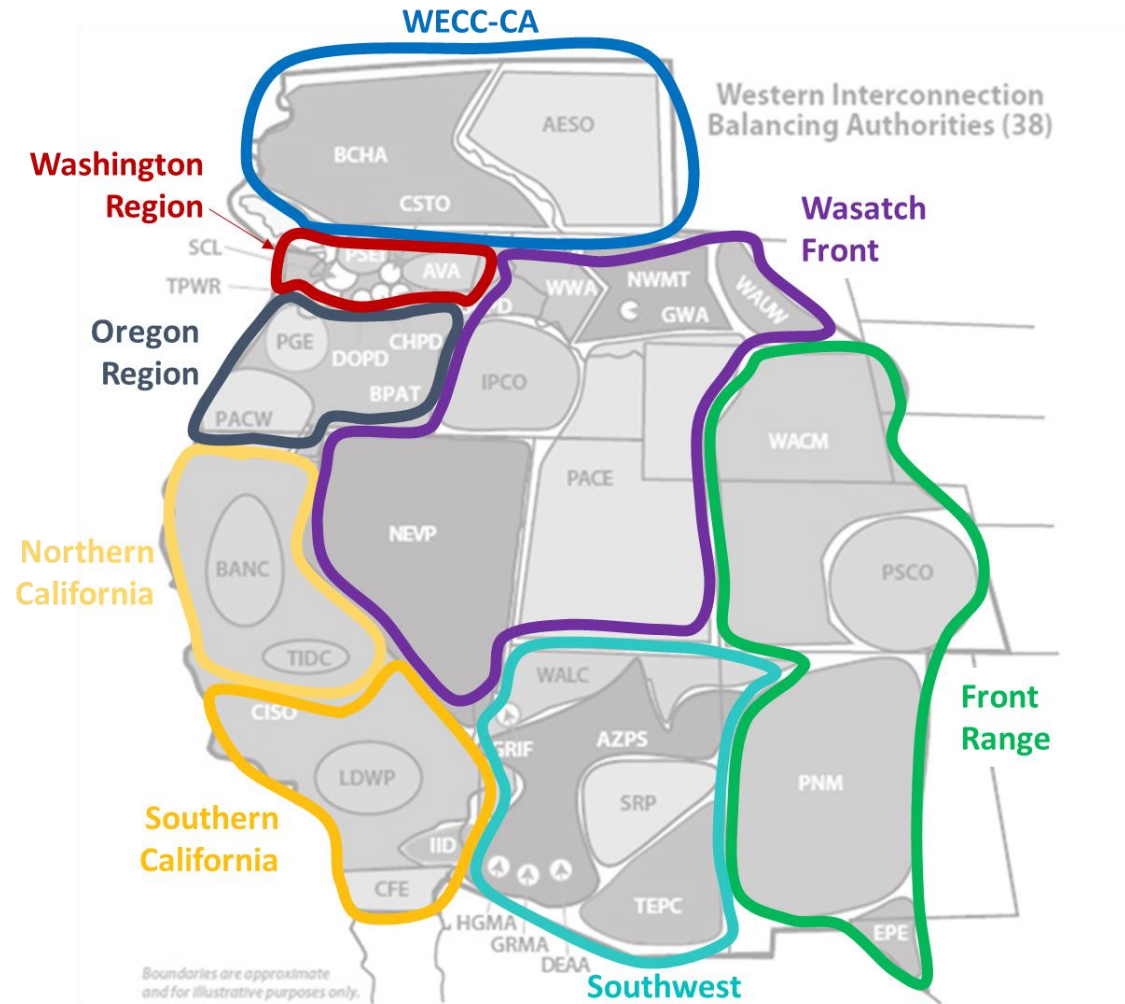
- Calculate current transfer capability (in years 2024 and 2033)
 - Create run-of-the-mill base cases (summer peak, winter peak, etc.)
 - Identify source/sink combinations
 - Identify contingencies
 - Identify RAS schemes to be modeled
 - Develop assumptions that represent extreme/maximum transfer conditions
 - Identify stability limitations (if any)
 - Represent and simulate the extreme/maximum transfer conditions in the cases created in Step 1.a and calculate transfer capability for each of the source/sink combination (bidirectional)

Source-Sink Areas

FROM	TO	Canada	WA Region	OR Region	Wasatch Front	Front Range	No. CA	So. CA	Southwest Region
Canada			X						
WA Region (NG)		X		X	X				
OR Region (NG)			X		X		X		
Wasatch Front (NG)			X	X		X		X	X
Front Range (WC)					X				X
Northern CA (CAISO)				X				X	
Southern CA (CAISO)					X		X		X
Southwest Region (WC)					X	X		X	

Planning Regions

- NG – NorthernGrid
- CAISO – California ISO
- WC – WestConnect



Phases 1: Cases and Contingencies

- Study four cases from the West
 - 2024 Heavy Summer
 - 2023/2024 Heavy Winter
 - 2033 Heavy Summer
 - 2033/2034 Heavy Winter
- Apply adverse system conditions (contingencies) to each case
- Data request sent and responses received
 - Sent November 2023, responses due January 17, 2024

Phase 1: Next Steps

- Provide updated cases to NERC
- Work with PowerGem to find the max transfer capability between the source/sink combinations
- If issues arise, work with stakeholders to validate and mitigate
- Meeting with WECC Advisory Group on 3/5 to discuss reviewing results

Phase 2: Energy Assessment

- Perform Energy Assessment (in years 2024 and 2033)
 - Identify system conditions under which system will experience energy shortfalls,
 - Determine prudent additions to interregional transfer capability between each pair of transmission planning region,
 - Evaluate which planning area(s) are prudent to increase transfer capability

Phase 2: Energy Assessment

- Transmission vs. Generation Options
- Extreme weather events only considered
- Scenarios will consider multiple risk factors (drought, cold / heat wave)
- Time-synchronized hourly assessment of load and generation to capture geographic diversity
- Calculate Hourly Energy Margin - An hourly measure of resource availability relative to load and operating reserve requirements, factoring weather dependencies of load, hydro, wind, solar, and thermal generators, applied consistently across all regions.

Phase 2: Next Steps

- Perform Energy Assessment (in years 2024 and 2033)
 - Develop a consistent North American dataset
 - U.S. data collected
 - Sending data request to Canadian provinces asking for historical hourly generation by resource type
 - Identify periods of tight supply conditions
 - Develop metrics and methods
 - Re-dispatch transmission planning cases

January 25 NERC Advisory Group Meeting

- Project and timeline overview and actions completed
- Phase 1 and Phase 2 review, technical discussions
- Transmitting utility engagement
- Discussion—What does success look like to you? What does it NOT look like?
- Next steps and advisory group meeting schedule
 - Monthly advisory group virtual meetings
 - In-person meeting in October

NERC AG Success Poll Results

What does success look like:

- Actionable
- Repeatable
- Increased communication and coordination
- Alignment
- Clear

What is NOT success:

- Put on the shelf
- Continued disconnect
- Not actionable
- Deeply technical

ITCS Resources

- NERC ITCS [webpage](#)
- NERC ITCS Advisory Group Meeting [Schedule](#)
- WECC Weekly Update
- WECC [website](#)
- Email us at engage@wecc.org

ITCS Updates

ITCS Status Update

[January 31, 2024, 2:00–3:00 p.m.](#)

The virtual status update on the Interregional Transfer Capability Study (ITCS) will include a high-level overview, share updates from NERC's ITCS Advisory Group meeting, follow up on WECC's ITCS Data Request, review Phases One and Two, provide resources, and answer stakeholder questions.

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You can follow the ITCS process on our [webpage](#).

The screenshot shows the NERC website with the following structure:

- Header:** NERC logo, search bar, and navigation links (About NERC, Career Opportunities, Governance, Committees, Program Areas & Departments, Standards, Initiatives, Reports, Filings & Orders, Newsroom).
- Left Sidebar:**
 - Event Analysis (Event Analysis, Lessons Learned, Event Reports, EA Program, Human Performance)
 - Interregional Transfer Capability Study (ITCS)
 - Modeling Assessments
 - Reliability Assessments
 - Performance Analysis
 - Section 1600 Data Requests
 - Reliability Indicators
 - Demand Response Availability Data System (DADS)
 - Generating Availability Data System (GADS)
 - Geomagnetic Disturbance Data (GMD)
 - Transmission Availability Data System (TADS)
 - Migration Information Data Analysis System (MIDAS)
 - Electricity Supply & Demand (ES&D)
 - Bulk Electric System Definition, Notification, and Exception Process Project
 - Committees (Reliability and Security Technical Committee (RSTC))
 - Webinars
- Main Content Area:**
 - Home > Program Areas & Departments > Event Analysis, Reliability Assessment, and Performance Analysis > Interregional Transfer Capability Study (ITCS)**
 - Interregional Transfer Capability Study (ITCS)**
 - A strong, flexible transmission system that is capable of coping with a wide variety of system conditions is key for the reliable supply and delivery of electricity. NERC has a long history of highlighting the need for more infrastructure, including transmission and pipelines, in its reliability assessments as the independent voice for reliability.
 - NERC is conducting the Interregional Transfer Capability Study that will analyze the amount of power that can be moved or transferred reliably from one area to another area of the interconnected transmission systems. The study will be conducted in consultation with the six Regional Entities and each transmitting utility in neighboring transmission planning regions.
 - Transfer capability is a critical measure of the ability to address energy deficiencies by relying on distant resources and is a key component of a reliable and resilient bulk power system. Recent and continuing resource mix changes require greater access and deliverability of resources to maintain reliability—particularly during extreme weather and environmental conditions.
 - The study, which was directed in the [Fiscal Responsibility Act of 2023](#), must be filed with the Federal Energy Regulatory Commission by **December 2, 2024**. A public comment period will take place when FERC publishes the study in the Federal Register. After submittal, FERC must provide a report to Congress within 12 months of closure of the public comment period with recommendations (if any) for statutory changes.
 - For any questions please contact the ITCS Project Team.
 - ITCS Meetings**
 - Type
 - Title
 - ITCS Advisory Group (5)
 - ITCS Schedule**
- Right Sidebar:**
 - ITCS Updates**
 - ITCS 2023 Fourth Quarter Update
 - ITCS 2023 Third Quarter Update
 - ITCS Documents**
 - ITCS Transfer Study Scope - Part I
 - ITCS SAMA Study Scope - Part II
 - ITCS Framework - Clean
 - ITCS Framework - Redline
 - ITCS Framework Review Comments
 - ITCS Resources**
 - ITCS Advisory Group Scope
 - ITCS Advisory Group Roster
 - ITCS Advisory Group Meeting Schedule
 - ITCS Project Team Roster
 - ITCS FAQs
 - Webinars/Presentations**
 - ITCS Framework and Plan - August 2023



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