

Establishment and Authority

The Transient Stability Analysis Work Group (TSAWG) was established by the Joint Synchronized Information Subcommittee (JSIS).

Purpose and Responsibilities

The purpose of the TSAWG is to promote development and implementation of operational tools using system-wide models for reliability assessments and predictive intelligence for the operations horizon. The TSAWG will provide technical guidance or recommendation to WECC Member entities in pursuit of new software enhancements and help raise it to the level at which engineers and operators can confidently make operational decisions.

The TSAWG is responsible for:

1. Developing and recommending best practices for network models (steady-state and dynamic) to support real-time transient stability analysis, including:
 - a. Improving applicability of the following dynamic models for real-time operations:
 - i. Inverter-based resources,
 - ii. Distributed generation,
 - iii. High voltage direct currents (HVDC), Static VAR Compensators (SVC), thyristor-controlled series compensators (TCSC) and other flexible AC transmission system (FACTS) devices,
 - iv. Load modeling, and
 - v. Energy storage resources; and
 - b. Improving modeling of Remedial Action Schemes (RAS).
2. Developing and recommending best practices for network models (steady-state and dynamic) to support real-time voltage stability analysis.
3. Developing and recommending best practices for integration of methods using data for situational awareness and predictive intelligence, including machine learning and other data-analytics-based methods for different time horizons.

4. Developing and recommending best practices for incorporating new resource types in assessments, including energy storage resources.
5. Sharing and archiving lessons learned (guidelines, white papers, best practices, etc.) in the development, deployment, and operation of various tools for reliability assessments and predictive intelligence.
6. Performing other tasks as appointed by JSIS.

Committee Composition and Governance

1. Membership

- a. The TSAWG will be composed of members from WECC Member organizations or other organizations with subject matter expertise in transient stability study and system dynamics modeling.
 - i. Membership of the TSAWG should provide a reasonable geographic representation for operating entities within the Western Interconnection.
- b. Members will be selected by their organization's JSIS representative or by their organization's WECC Member Representative if no JSIS representative exists.
 - i. WECC Member organizations may have multiple members on the TSAWG.
 - ii. Notice of selection should be sent to the co-chairs (or designee).
 - iii. For organizations that are not WECC Members, members can be selected by self-nomination and approval by the TSAWG co-chairs (or designee).
- c. Members will serve until they resign or until a successor has been selected.
- d. The TSAWG will also include a liaison, appointed by WECC management, as a member.

2. Leadership

- a. The chair of the JSIS will approve two members of the TSAWG to serve as the co-chairs.
 - i. The co-chairs will manage the committee and its meetings.
- b. The co-chairs will each hold office for a staggered term of two years, or until a successor has been duly appointed. The co-chairs may serve multiple terms.
- c. WECC staff will partner with the co-chairs to manage the committee and its meetings, plan the agenda, and coordinate efforts with the other technical committees to ensure alignment with WECC staff work plans and priorities.
- d. WECC staff will prepare minutes of TSAWG meetings for the committee's approval.



- e. The co-chairs may appoint a steering committee that will assist with meeting agendas and action recommendations. The steering committee will include the WECC liaison and subgroup chairs, and may include other members.

3. Meetings

- a. The TSAWG will meet as often as required to carry out its responsibilities.
 - i. Meetings will be held according to the WECC Meeting Policy.
 - ii. TSAWG meetings may be in-person, virtual, a combination of the two (hybrid), or by conference call, as determined by the co-chairs.
 - iii. Meetings will be open to the public except as otherwise approved according to Board policy.
- b. A quorum for meetings will be one-third of committee members.
- c. The TSAWG will strive to make all decisions by consensus. If consensus is not possible, action taken by the TSAWG will require a majority vote of the members present.
 - i. Voting may be by any means the co-chairs determine appropriate.
 - ii. Voting must take place in a noticed meeting.
 - iii. TSAWG members may not vote by proxy or absentee ballot.
 - iv. Each WECC Member organization may only have one vote.
 - v. Members who vote in the minority regarding an approval item should provide an explanation for their vote. This explanation or a summary will be included in the minutes.
- d. WECC will give notice to each member of the TSAWG of the time and place of all meetings and will post notice of all meetings on the WECC website. Notice will be given no less than:
 - 30 calendar days before in-person and hybrid meetings.
 - 10 calendar days before virtual meetings and conference calls.
- e. An agenda, and the items for which action may be taken, will be posted no less than:
 - 10 calendar days before in-person and hybrid meetings.
 - Three calendar days before virtual meetings and conference calls.
- f. Any person who wants notice of TSAWG meetings may notify the WECC liaison. WECC will then email the notice of future meetings to that person when the committee members receive the notice.



- g. The TSAWG has been approved by the Board to hold closed sessions. Closed sessions must be held according to the procedures and requirements in the Board Policy on Closed and WIDSA Sessions. The TSAWG closed sessions are approved to discuss data collected from Balancing Authorities and Transmission Operators: Phasor Measurement Unit (PMU) data, SCADA data, station one-line diagrams, RAS, protection schemes, interchange information, system inertia data, path flows, path limit data, System Operating Limits (SOL), and system disturbance cases and base cases.

Reporting

The TSAWG will report to the JSIS on its activities and any recommendations.

Review and Changes to the Charter

The TSAWG will review this charter every three years or as needed and discuss any changes with the Joint Guidance Committee (JGC). The TSAWG will then make a recommendation to the JSIS for approval.

	Committee	Date
Approved	JSIS	Month Day, Year
Endorsed	JGC	Month Day, Year
Reviewed	TSAWG	April 14, 2022

