

# **WIRAB and SPSC Comments on Interregional and Interconnection-wide Transmission Planning**

July 9, 2015

The Western Interconnection Regional Advisory Body<sup>1</sup> (“WIRAB”) and the State-Provincial Steering Committee<sup>2</sup> (“SPSC”) appreciate the opportunity to comment on the Western Planning Regions’ (“Planning Regions”) proposed Interregional Transmission Planning Coordination Procedures (“ITPC Procedures”). Our comments, however, go beyond recommending improvements to the proposed ITPC Procedures. At the outset, we make recommendations about the role of the Western Electricity Coordinating Council (“WECC”) in conducting interconnection-wide transmission planning and reliability analysis and the need for seamless, comprehensive transmission expansion planning across the West.

Our aim in the region should be to build a transmission planning capability and system that features:

- Sophisticated evaluation of grid reliability over a wide range of potential futures including assessments of the use of readily available measures, such as synchronous condensers, to mitigate any identified reliability problems;
- Thorough assessments of transmission needs over a wide range of potential futures including those with a much different resource mix than we have today;
- Thorough evaluation of all non-wire alternatives to meeting the future transmission needs;
- Flexibility to accommodate looming changes in the membership and footprint of regional planning groups;
- Full integration of interconnection-wide and regional planning and planning processes

Today, under Order 1000, we have failed to build such a seamless, comprehensive transmission planning system in the West and the interregional planning proposal will not get us there. We must go far beyond merely complying with Order 1000 requirements region-by-region to advance the interconnection’s interest and serve end-use customers. Comprehensive

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<sup>1</sup> WIRAB was created by Western Governors under Section 215 of the Federal Power Act. Members of WIRAB represent the Governors of 14 western states, the Canadian provinces of Alberta and British Columbia, and Mexico. WIRAB is charged to advise the North American Electricity Council (“NERC”), the Federal Energy Regulatory Commission (“FERC”), and the Western Electricity Coordinating Council (“WECC”) on whether proposed reliability standards and the governance and budgets of WECC are in the public interest. FERC has encouraged WIRAB to provide similar advice regarding the governance and budgets of Peak.

<sup>2</sup> SPSC was created in 2009 to promote the formation of interconnection-wide transmission planning processes in the Western Interconnection with funding provided by the American Recovery and Reinvestment Act (ARRA). The SPSC is comprised of one representative of the Governor and one representative of the public utility commission or public service commission in each state in the Western Interconnection, plus provincial representatives from Alberta and British Columbia. The SPSC has three responsibilities: (1) Provide input into WECC’s transmission expansion planning; (2) Promote actions to make more efficient use of the existing transmission grid; and (3) Promote actions to lower the cost of integrating variable (wind and solar) generation into a reliable power system.

transmission planning is more than the review of projects in the narrow reliability and cost context that some may believe is adequate to comply with Order 1000.

Seamless, comprehensive transmission planning requires that WECC play an integral role in interconnection-wide and interregional transmission planning in the Western Interconnection. Both interconnection-wide and regional plans should be developed with the goals of improving reliability, reducing system cost, and achieving public policy objectives and with sufficiently credible analysis to thoroughly evaluate the benefits and costs of long-distance, high-voltage power line proposals that cross regional planning boundaries.

The Planning Regions and WECC should aim to use common data for all analyses and work to improve to those data bases. The Planning Regions and WECC should use state-of-the-art analytical tools and develop new tools that are capable of evaluating grid reliability under a wide range of potential futures, including those with substantially more wind and solar generation and less thermal generation. They should both have the capability to model measures that address reliability problems. They should closely coordinate on analyses. Further, interconnection-wide and interregional coordination processes will need to address potential changes in Planning Region membership and footprints (e.g. PacifiCorp joining the California ISO).

WECC's interconnection-wide planning and the Planning Regions' region-wide planning complement one another. Both are important. Region-wide planning, without complementary interconnection-wide planning, likely will yield sub-optimal results. Further, interregional planning that consists of the melding of multiple regional plans may lack consistency and coherence from an interconnection-wide perspective.

We offer the following recommendations about the role of WECC and the ITPC procedures:

- 1. WECC should develop 10-year and 20-year interconnection-wide transmission expansion plans. As part of those plans, WECC should undertake robust stress testing of transmission solutions, conduct “what-if” scenario analyses, and examine the reliability implications of transmission configurations.**
- 2. WECC should improve the quality of its public datasets, including its Common Case and Reference Case. Those datasets should be used in common by WECC, Planning Regions, utilities, and others to conduct planning and reliability studies. The Planning Regions should use WECC's Common Case as the starting point for all of their production cost modeling cases.**
- 3. WECC and the Planning Regions should use state-of-the-art analytical tools and develop new tools that are needed to evaluate grid reliability under a wide range of futures including those with a lot more wind and solar and much less thermal generation. WECC and Planning Regions should fully develop roundtrip production cost and power flow modeling capability and expand their capabilities to evaluate ramping needs. WECC should use the refined models to conduct interconnection-wide reliability analyses, including the evaluation of potential mitigation measures.**

- 4. Planning Regions should coordinate with WECC staff on regional and interregional transmission planning matters and more fully include WECC in their ITPC Procedures.**
- 5. Planning Regions should revise the proposed joint evaluation round-robin process (see Procedures for ITP Joint Evaluation, Section 1.10.3, at page 10). The Relevant Planning Regions should conduct joint benefit-cost analysis of the proposed Interregional Transmission Project (ITP) from the perspective of their joint footprint. These analyses should assess the reliability and economic benefits of proposed projects. WECC should include analysis of long-distance high-voltage lines in its interconnection-wide plans and this analysis should inform the Planning Regions joint evaluation.**
- 6. Planning Regions should develop a web-based portal where ITP developers and stakeholders can track progress towards milestones for any ITP. The portal should also include the publicly available databases and key modeling assumptions being used by each Relevant Planning Region to conduct its economic and reliability analysis. The portal should also describe any data and study case reconciliations that are made between Relevant Planning Regions.**
- 7. Planning Regions should advance the posting of meeting materials to 15 calendar days prior to the Annual Interregional Coordination Meeting and extend the stakeholder comment deadline to no later than 30 calendar days after the meeting (see Annual Interregional Coordination Meeting, Sections 1.3 and 1.5, at page 5).**
- 8. Planning Regions should provide summary notes from the Annual Interregional Coordination Stakeholder Meeting and collect and post responses to all stakeholder comments (see Annual Interregional Coordination Meeting, Sections 1.4 and 1.6, at page 5).**
- 9. Planning Regions should only close the portion of the joint evaluation study team meetings involving discussion of CEII data, not the entire meeting, to stakeholders (see Procedures for ITP Joint Evaluation, Section 1.7.1, at page 8).**

Below, we provide further elaboration and justification for these recommendations.

- 1. WECC should develop 10-year and 20-year interconnection-wide transmission expansion plans. As part of those plans, WECC should undertake robust stress testing of transmission solutions, conduct “what-if” scenario analyses, and examine the reliability implications of transmission configurations.**

Federal, state, and provincial policy-makers need an independent, objective, and transparent source of information and analysis to set energy policy goals and objectives in the Western Interconnection and to evaluate the alternative paths to achieving those goals and objectives.

Will new transmission lines need to be built to achieve the policy objective? When? Where? Are there alternative ways to achieve the same objective at a lower cost? Will achieving the policy goals impact system reliability? Are technologies or business practices available that could be used to mitigate the reliability impacts? These are some of the questions that can be addressed with robust interconnection-wide transmission planning. Independent and robust interconnection-wide transmission planning is essential to informing policy makers about if, when, and where new transmission lines may be needed and to assure that the bulk electric system continues to be reliable and economic.

WECC is uniquely situated to provide this information and analysis for the Western Interconnection. WECC gained experience working with policy-makers and stakeholders during the development of its 2011 and 2013 Interconnection-wide Transmission Plans. The plans included:

- 10-year and 20-year study horizons;
- Expected common and reference cases;
- Sensitivity analysis of key input assumptions;
- Stress testing of the common and reference cases;
- What-if scenarios to better understand potential energy futures;
- Evaluation of alternatives to transmission expansion;
- Assessment of costs and benefits of long-distance, high-voltage transmission lines; and
- Key observations and recommendations

In particular, policy makers in Western states and provinces place a high value on WECC's interconnection-wide transmission planning because the process allows them to explore potential public policy options and test future "what-if" scenarios.

The joint evaluation procedures and the round-robin interregional effort described in the Planning Regions' ITPC Procedures (*see* Procedures for ITP Joint Evaluation, Section 1.10.3, at page 10) are not equivalent to interconnection-wide transmission planning and should not be considered a substitute for WECC's interconnection-wide transmission planning. The Planning Regions' region-wide and interregional planning should complement WECC's interconnection-wide transmission planning and should not compete with or crowd-out WECC's efforts. The lack of specific linkages between the Planning Regions' established tariffs and WECC's planning activities should not be construed as justification for limiting WECC's role in transmission planning.

- 2. WECC should improve the quality of its public datasets, including its Common Case and Reference Case. Those datasets should be used by WECC, Planning Regions, utilities, and others to conduct planning and reliability studies. The Planning Regions should use WECC's Common Case as the starting point to develop all their production cost modeling cases.**

The use of common and public datasets is essential to transmission planning in the West. Present industry data sharing practices in the West are hampering sound transmission planning. WECC and the four western Planning Regions should share databases as much as possible to avoid duplication of effort and to minimize cost. WECC and the Planning Regions should collaborate to ensure common data bases are accurate and up-to-date and have been vetted by stakeholders. WECC can provide datasets, modeling tools, and professional expertise to other entities without becoming a Registered Entity or impairing its ability to be the independent overseer of grid reliability in the West.

WIRAB/SPSC support the Planning Regions proposal to use WECC's base cases as the starting point to develop their own cases for power flow reliability analysis (*see* ITPC Procedures, Base Case Development and Coordination, Section 1, at page 3). The Planning Regions should also commit to using WECC's Common Case as the starting point to develop all of their cases for production cost modeling and economic analysis.

We also support the proposal of the Planning Region to share data and provide corrected/updated electrical models for transmission facilities that have interregional significance in the form of change files (*see* ITPC Procedures, Base Case Development and Coordination, Section 1.3, at page 4). We recommend that the Planning Regions include WECC in the sharing of these change files.

**3. WECC and the Planning Regions should use state-of-the-art analytical tools and develop new tools that are needed to evaluate grid reliability under a wide range of futures including those with substantially more wind and solar and less thermal generation. WECC and Planning Regions should fully develop roundtrip production cost and power flow modeling capability and expand their capabilities to evaluate ramping needs. WECC should use the refined models to conduct interconnection-wide reliability analyses, including the evaluation of potential mitigation measures.**

As the reliability assurer for the Western Interconnection, WECC should conduct stringent reliability analyses of all scenarios and transmission solutions identified in plans. To do this it needs to fully develop its roundtrip production cost and power flow modeling capability. Specifically, WECC and the Planning Regions should establish a joint venture to perfect roundtrip analysis and ramping analysis. They should be prepared to replicate the type of reliability analysis underway at NREL and GE that is examining reliability challenges associated with weak parts of the grid and the large scale deployment of variable generation. The Planning Regions and WECC should commit to seek national lab/DOE support in this effort.

WECC should also develop the capability to evaluate measures to mitigate reliability problems. For example, if its analysis indicates that the retirement of a large number of coal plants and the addition of a large amount of variable energy resources could result in system frequency response or weak grid problems, then WECC should analyze the installation of synchronous condensers, the installation of clutches on natural gas plants, and other readily available mitigation measures. WECC should consult and work closely with the Planning Regions to

identify and evaluate potential mitigation measures. WECC also needs to integrate into its planning work the expertise of forward-thinking system operators who can contribute to understanding real-time operational challenges and solutions.

**4. Planning Regions should coordinate with WECC staff on transmission planning matters and more fully include WECC in their ITPC Procedures.**

The Planning Regions should regularly consult with WECC to improve common databases, modeling tools and planning methodologies. To better achieve these goals, the Planning Regions should more fully involve WECC in the following sections of the ITPC Procedures:

- Purpose of the ITPC, Sections 1 through 3;
- Interregional Coordination Process, Sections 1 and 1.3;
- Base Case Development and Coordination, Sections 1, 1.3, and 1.4;
- Interregional Information Exchange, Section 1.1;
- Procedures for ITP Coordination, Sections 1 and 2.1;
- Procedures for ITP Joint Evaluation, Sections 1.3 through 1.7, 1.8.2, 1.8.3, 1.8.4, 1.9.1, 1.9.2, and 1.10.1.

**5. Planning Regions should revise the proposed joint evaluation round-robin process (see Procedures for ITP Joint Evaluation, Section 1.10.3, at page 10). The Relevant Planning Regions should conduct joint benefit-cost analysis of the proposed Interregional Transmission Project (ITP) from the perspective of their joint footprint. These analyses should assess the reliability and economic benefits of proposed projects. WECC should include analysis of long-distance high-voltage lines in its interconnection-wide plans and this analysis should inform the Planning Regions joint evaluation.**

The proposed “round-robin” approach to joint evaluation narrowly evaluates proposed ITPs using power flow modeling and reliability analysis. The Planning Regions should put more emphasis on production cost modeling and economic benefit-cost analysis. The criteria for selecting an ITP for inclusion in a regional plan need to be more clearly specified and should include both economic and reliability factors.

In addition to each region using its own production cost modeling to conduct separate economic analyses of interregional projects, the Relevant Planning Regions should conduct thorough cost-benefit analyses of such projects from a multi-region perspective. It is important that ITPs be evaluated from an interconnection-wide and interregional perspective. If there are regional disagreements about costs and benefits and analytical methods, these should be made public and the regions should aim to resolve all such differences.

WECC should analyze proposed long-distance high-voltage transmission lines in its interconnection-wide transmission plans. The results of WECC’s planning studies should inform the joint evaluation of interregional transmission projects by the Planning Regions.

- 6. Planning Regions should develop a web-based portal where ITP developers and stakeholders can track progress towards milestones for any ITP. The portal should also include the publicly available databases and key modeling assumptions being used by each Relevant Planning Region to conduct its economic and reliability analysis. The portal should also describe any data and study case reconciliations that are made between Relevant Planning Regions.**

Transparency of the joint evaluation process is crucial. Developers and stakeholders need to be kept abreast of progress being made by the Relevant Planning Regions and made aware of key differences in the databases and key modeling assumptions being used by the regions to evaluate an ITP. When differences in data, modeling assumptions, or study cases are reconciled these agreements should be documented and made public.

- 7. Planning Regions should advance the posting of meeting materials to 15 calendar days prior to the Annual Interregional Coordination Meeting and extend the stakeholder comment deadline to no later than 30 calendar days after the meeting (see Annual Interregional Coordination Meeting, Sections 1.3 and 1.5, at page 5).**

The proposed 21 day window between the posting of materials for the Annual Interregional Coordination Meeting and the deadline for stakeholder comments is unreasonable. This is the primary opportunity for stakeholders to provide meaningful input on technical and complex interregional planning matters. The comment window should be widened to a least 45 days.

- 8. Planning Regions should provide summary notes from the Annual Interregional Coordination Stakeholder Meeting and collect and post responses to all stakeholder comments (see Annual Interregional Coordination Meeting, Sections 1.4 and 1.6, at page 5).**

There is little incentive for stakeholders to provide verbal comments at the Annual Interregional Coordination Meeting or written comments after the meeting without a reasonable expectation that comments will be considered and addressed. The Planning Regions should commit to publicly responding to stakeholder comments.

- 9. Planning Regions should only close the portion of the joint evaluation study team meetings involving discussion of CEII data, not the entire meeting, to stakeholders (see Procedures for ITP Joint Evaluation, Section 1.7.1, at page 8).**

Meetings of the joint evaluation study team should not be closed to stakeholders by default. The default position should be open meetings. To protect CEII data, the relevant portions of joint evaluation study teams meeting should be closed to stakeholders.