

Transmission Planning Protocol of Western Electricity Coordinating Council's Transmission Expansion Planning Policy Committee

1 ***Purpose and Objectives***

This Protocol governs the transmission planning process used by the Western Electricity Coordinating Council's (WECC) Transmission Expansion Planning Policy Committee (TEPPC) to support transmission providers in meeting the transmission planning obligations of Attachment K to the transmission providers' Open Access Transmission Tariffs (OATTs). TEPPC's support includes preparing and making a transmission economic planning database available, conducting transmission economic expansion studies as part of a Western Interconnection synchronized study cycle and facilitating collaborative efforts among sub-regional planning groups within the Western Interconnection.

2 ***Conformance with Applicable Criteria***

2.1 **NERC.**

WECC/TEPPC's transmission planning activities conform to all applicable criteria and standards of the North American Electric Reliability Corporation (NERC).

2.2 **FERC.**

TEPPC's transmission planning activities conform with the planning principles described in the Federal Energy Regulatory Commission's (FERC) Order No. 890, to the extent that those principles are applicable to the specific activities described in this protocol that are undertaken by TEPPC in support of Western Interconnection transmission providers and sub-regional transmission planning groups.

3 ***WECC and TEPPC Organizational Descriptions***

3.1 **WECC Description.**

WECC was formed on April 18, 2002, by the merger of the Western Systems Coordinating Council (WSCC), the Southwest Regional Transmission Association (SWRTA), and the Western Regional Transmission Association (WRTA). The formation of WECC was accomplished over a four-year period through the cooperative efforts of WSCC, SWRTA, WRTA, and other regional organizations in the West.

WSCC was originally formed with the signing of the WSCC Agreement on August 14, 1967 by 40 electric power systems. Those “charter members” represented the electric power systems engaged in bulk power generation and/or transmission serving all or part of the 14 Western States and British Columbia, Canada. SWRTA and WRTA were formed in 1995 to implement open transmission access in response to the passage of the Energy Policy Act of 1992.

WECC members have long recognized the many benefits of interconnected system operation. During the mid-1960s, expansion of interconnecting transmission lines among systems in the western United States and western Canada resulted in the complete interconnection of the entire WECC region. As this expansion was taking place, systems generally adopted the Operating Guides of the North American Power Systems Interconnection Committee (NAPSIC) to promote consistent operating practices within the region. NAPSIC later became the NERC Operating Committee. Over 30 years later, WECC continues to provide the forum for its members to enhance communication, coordination, and cooperation – all vital ingredients in planning and operating a reliable interconnected electric system.

As a FERC- and NERC-sanctioned Regional Reliability Organization, WECC continues to be responsible for coordinating and promoting electric system reliability as had been done by WSCC since its formation. In addition to ensuring and enforcing a reliable electric power system in the Western Interconnection, WECC supports efficient and competitive power markets as well as open and non-discriminatory transmission access among members. WECC provides a forum for resolving certain transmission disputes and an environment for coordinating the operating and planning activities of its members as set forth in the WECC Bylaws.¹

The WECC region encompasses an area of nearly 1.8 million square miles. It is the largest and most diverse geographically of the eight regional reliability organizations of NERC.² WECC’s service territory extends from the Canadian provinces of Alberta and British Columbia into the northern portion of Baja California, Mexico, and all or portions of the 14 western states between. Transmission lines interconnect the hydro-electric resources of the Pacific Northwest, the coal-fire resources of the Mountain West and the coal-fired and nuclear resources of the Southwest with major load centers and gas-fired resources located across the region.

Due to its geographic scale and diverse characteristics, WECC’s members face unique challenges in coordinating the day-to-day interconnected

¹ WECC Bylaws at: http://www.wecc.biz/documents/library/publications/Revised_Bylaws_Clean_10-07-03.pdf

² NERC Website at: <http://www.nerc.com/>

system operation and the long-range planning needed to provide reliable and affordable electric service to more than 71 million people in WECC’s territory.

3.2 WECC Board.

WECC is governed by a 32-member hybrid stakeholder Board of Directors (Board) with representatives from the electric power industry community in the United States, Canada and Mexico. The Board includes 7 non-affiliated directors with the remaining directors belonging to separate classes that self-select director representatives to provide balanced representation among utilities, independent power producers, marketers and customers and regulators. The current members of the Board are listed on WECC’s website.³ The WECC Board has established principal committees to carry out its mission, one of which is TEPPC.

3.3 WECC Membership.

Membership in WECC is voluntary and open to any organization having an interest in the reliability of interconnected system operation or coordinated planning. The current Members of WECC are listed on the WECC website.⁴

3.4 TEPPC Background.

WECC has long recognized the need for an Interconnection-wide approach to transmission expansion planning. Since the major interconnections were completed in the 1960s and 1970s, the Western Interconnection has operated as a single system. The development of the transmission rating process is an example of a west-wide approach to transmission system planning and operations.

In recent years, it has become apparent that the economic dimensions of the transmission planning process need to be examined beyond the boundaries of any single company or control area. The difficulties of any sub-region affect the entire Interconnection. The energy shortages that occurred in 2000-2001 clearly showed the extent of economic interdependence within the region. In the wake of these difficulties, the

³ WECC Board List at:

<http://www.wecc.biz/index.php?module=pagesetter&func=viewpub&tid=4&pid=12>

⁴ WECC Members list at:

http://www.wecc.biz/modules.php?op=modload&name=Web_Links&file=index&req=viewlink&cid=1

Western Governors Association⁵ provided the impetus for a series of economic studies of the western interconnected transmission system. These were ad hoc efforts, organized to meet a then-current need.

These activities made it apparent that an ongoing planning process was needed that included economic evaluation of transmission expansion needs. During 2005 and early 2006, WECC organized TEPPC to provide west-wide study and data services, and to provide coordination and transmission expansion planning leadership across the Western Interconnection. TEPPC became a formal committee of the WECC Board in April, 2006. The database developed for the Seams Steering Group – Western Interconnection effort was transferred to WECC for use in the TEPPC study effort.

In Order No. 890, FERC adopted a requirement for transmission service providers to participate in subregional and regional transmission planning processes, to be described in Attachment K of the transmission provider's Open Access Transmission Tariff. This requirement includes the performance of economic studies to identify of the cost of congestion and plans to remedy it on a system-wide basis, and to coordinate with other areas to ensure simultaneous feasibility of the plans.

Based on their experience and the formation of TEPPC, the organizations that make up the Western Interconnection believe FERC's planning principles can be implemented through existing organizations in the West. The WECC/TEPPC planning protocol describes the use of such existing organizations in a layered planning structure. WECC/TEPPC will integrate the layers into a cohesive regional approach to transmission planning that includes the coordination of sub-regional processes.

3.5 TEPPC Charter.

When TEPPC was created in April 2006, the WECC Board provided a charter to guide the committee's activities. Under its charter TEPPC responsibilities include three main functions:

- Overseeing database management.
- Providing policy direction and management of the economic transmission planning process.
- Guiding the analyses and modeling for Western Interconnection economic transmission expansion planning.

⁵ The Western Governors have been concerned with both the reliability and the economic performance of the Western Interconnection, particularly how adequate transmission infrastructure can be put in place to meet future system needs.

These functions complement but do not replace the responsibilities of WECC members and stakeholders to develop and implement specific expansion projects. This section describes the key features of the charter. The full text of the TEPPC Charter is listed on the WECC website.⁶

- 3.5.1 TEPPC organizes and steers WECC regional economic transmission planning activities.
- 3.5.2 TEPPC’s analysis and studies focus on plans with west-wide implications to include a high-level assessment of congestion and congestion costs. The analyses and studies also evaluate the economics of resource and transmission expansion alternatives on a regional-screening-study basis. Resource and transmission alternatives may be targeted at relieving congestion, minimizing and stabilizing regional production costs, diversifying fuels, achieving renewable resource and clean energy goals, or other purposes. Alternatives may draw from state energy plans, integrated resource plans, large regional-expansion proposals, sub-regional plans and studies, and other sources such as individual control areas if relevant in a regional context.
- 3.5.3 TEPPC presents its findings to the Board for comment and approval. Data, analysis and findings are provided to members, sub-regional study groups, and policy makers for further consideration. Members and sub-regional planning groups perform analysis and studies to define, evaluate, prioritize and advocate specific projects as they choose.
- 3.5.4 In consultation with stakeholders and technical experts, TEPPC adopts an analytical methodology and modeling tools for WECC’s regional economic transmission expansion planning.
- 3.5.5 TEPPC conducts the planning process in an impartial, inclusive, and transparent manner that ensures broad stakeholder participation.
- 3.5.6 TEPPC undertakes assignments related to its functions as requested by the Board.
- 3.5.7 TEPPC depends on technical support from the Standing Committees and their subgroups⁷ and other WECC committees and sub-regional planning groups.

⁶ TEPPC Charter at:

<http://www.wecc.biz/modules.php?op=modload&name=Downloads&file=index&req=getit&lid=2152>

⁷ In preparing its economic studies database TEPPC relies on the Load and Resources Subcommittee and of the Planning Coordination Committee for load, resource and network data to avoid duplication and to limit the data collection burden of WECC members.

- 3.5.8 TEPPC reviews its Charter on an annual basis and recommends any changes that it considers advisable to the Board.
- 3.5.9 TEPPC reports to the Board of Directors at each Board meeting with respect to its activities and with such recommendations and findings as are deemed appropriate.
- 3.5.10 TEPPC’s role does not include:
 - Conducting detailed project-specific studies.
 - Prioritizing and advocating specific economic expansion projects.
 - Identifying potential “winners” and “losers.”
 - Developing or advocating cost allocations.
 - Developing or advocating cost allocation criteria.
 - Providing mechanisms to obtain funding.
 - Assigning transmission rights.
 - Providing backstop permitting or approval authority.
 - Performing reliability analysis outside of what is being done currently.

3.6 TEPPC Organization.

- 3.6.1 Balanced Committee Composition. TEPPC has a balanced membership comprised of individuals from WECC member organizations including: transmission providers, policy makers, governmental representatives and others. These individuals have experience with planning, building new economic transmission, evaluating the economics of transmission or resource plans, or managing public planning processes as listed in paragraph 3.6.2 below. The WECC Board approves the appointment of all TEPPC members on recommendation by the TEPPC Chair (or Co-Chairs). Committee composition, membership criteria, and appointment process are described in the TEPPC Charter.
- 3.6.2 Committee Membership. TEPPC membership includes:
 - Two WECC Board Members.
 - One representative from each of the WECC sub-regional planning groups.
 - One representative from a Public Utility Commission.
 - One representative from a State or Provincial Energy Department or Office.
 - One transmission owner.
 - One load serving entity representative.

- One generator owner representative.
- One consumer representative.
- One expert in the Integrated Resource Planning (IRP) processes.
- One wholesale market expert.
- One environmental representative.

3.6.3 **TEPPC Facilitator**. A facilitator has been appointed by TEPPC to assist in the initiation of the TEPPC processes. The facilitator works under the direction of the TEPPC Chair(s) to assist in meeting planning, preparing and monitoring work plans. The facilitator acts as a liaison between TEPPC, subcommittee, work groups and sub-regional planning groups and facilitates broad participation of stakeholders in TEPPC activities.

3.7 TEPPC Governance.

- 3.7.1 The TEPPC members are designated by the Board of Directors. When TEPPC was initiated by WECC, the Reliability Policy Issues Committee (RPIC) solicited WECC members regarding their interest in serving on TEPPC. RPIC reviewed submitted names and qualifications and subsequently recommended a slate of members to the WECC board for confirmation.
- 3.7.2 The board is to review the TEPPC membership at least every three years.
- 3.7.3 If a vacancy occurs, the TEPPC Chair(s) recommends an individual to the board to fill that vacancy.
- 3.7.4 The Chair of the Board of Directors appoints one of the Committee’s Board of Director members to serve as the Committee Chair (or Co-Chairs). The TEPPC Chair(s) appoints a secretary who need not be a director or a committee member.
- 3.7.5 The time and place of meetings of TEPPC and the procedures for such meeting shall be as determined by the members of the TEPPC, provided that:
 - (a) TEPPC meets as needed to fulfill its responsibilities. Quarterly meeting are typical with additional conference calls as required.
 - (b) A quorum for meetings is a simple majority of the members.

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- (c) Meetings of TEPPC may be in person or by conference call as determined by the Chair(s).
- (d) The TEPPC Chair(s) shall provide an e-mail notice to committee members and Board members stating the time and place of all meetings no later than three weeks prior to the meeting, together with an agenda of the items for which possible action may be taken. This information will also be and posted to the TEPPC web page. Any member of the Board may attend any meeting held in person and may monitor any meeting held by conference call. Regular meetings should be scheduled at the beginning of the year.
- (e) Any stakeholders interested in attending TEPPC meetings or monitoring TEPPC conference calls may do so by providing notice of their interest to the TEPPC Chair(s) by email. The TEPPC Chair(s) will provide an email copy of the notice and agenda of future meetings to that stakeholder at the time the notice and agenda are provided to the Board. Information regarding location of specific meetings or how to join a specific conference call may be obtained directly from the TEPPC Chair(s) or their designee. All TEPPC meetings are posted on the TEPPC Webpage.⁸
- (f) Only the Board designated committee members or their designated proxy may vote.
- (g) Action taken by TEPPC shall require a majority vote of those voting members present or on the telephone conference call.

3.7.6 The TEPPC Chair(s) may call for a closed session of TEPPC as provided in the charter to protect the confidentiality of proprietary information or to receive attorney-client communications. Such closed sessions of TEPPC shall only be attended by members of TEPPC and by any other person invited to attend by the TEPPC Chair(s).

3.7.7 The non-Affiliated Directors' compensation for serving on TEPPC shall be established by the Board.

3.7.8 TEPPC will view projects at their conceptual stage, consistent with the Transmission Economic Expansion Planning functions as described in TEPPC's charter and in the Purposes and Objectives of this protocol. TEPPC's goal is to develop and maintain a strong relationship with WECC Staff and with WECC and non-WECC

⁸ TEPPC Webpage at:

<http://www.wecc.biz/index.php?module=pagesetter&func=viewpub&tid=4&pid=14>

committees/organizations regarding coordinating data collection and study scenarios, conducting the economic transmission planning process and reviewing/validating system modeling.

3.8 WECC Staff Support.

WECC provides technical staff support to TEPPC as needed for all its activities, including those of TEPPC sub-committees and work groups.

3.9 Open meetings.

- 3.9.1 Calendars. Except as noted in paragraph 3.7.6, meetings of TEPPC are open to the public. TEPPC’s Technical Advisory Subcommittee and work group meetings are open to the public. Many meetings are held by teleconference or webcast to facilitate wider participation of interested parties and to minimize meeting expenses. The time and place of meetings are posted on the TEPPC Event Calendar.⁹
- 3.9.2 Meeting notices. Formal meeting notice provisions for TEPPC are described in paragraph 3.7.5(d) above. TEPPC also maintains a TEPPC correspondents distribution list and provides notice of TEPPC meetings and activities to all parties who have expressed an interest. Parties may request their addition to the correspondents list using the link provided on the TEPPC Webpage.

3.10 Document Postings.

- 3.10.1 Documents associated with each TEPPC meeting are posted on the WECC website. Meeting dates are shown in a table on the TEPPC Webpage with active links from the meeting date to a separate webpage listing relevant documents for the meeting.
- 3.10.2 Other documents of significant interest to TEPPC participants and correspondents are also posted on the WECC website, with links provided on the TEPPC Webpage.
- 3.10.3 To facilitate communication, the TEPPC Webpage includes links to the websites of the Western Interconnection’s sub-regional planning groups and to the websites of major transmission projects.

⁹ TEPPC Event Calendar at: <http://www.google.com/calendar/embed?src=stan@wecc.biz>

3.11 Technical Advisory Subcommittee (TAS).

- 3.11.1 TEPPC has established a Technical Advisory Subcommittee (TAS) to collect and disseminate data needed for economic studies of transmission expansion, to produce studies of future transmission system needs using both analysis of historical data and production cost simulation, and to provide a broad forum for stakeholder participation in TEPPC’s study activities. The overall TEPPC planning process is a complement to (not a replacement of) responsibilities of WECC members and stakeholders to develop and implement specific transmission projects in the Three Phase Rating process.
- 3.11.2 Under TEPPC’s oversight and working with the WECC staff, TAS will populate and verify the database for economic transmission planning studies, determine the models to be used in these studies, collect and analyze historical data and produce western regional economic planning transmission studies. TAS will maintain work groups and encourage stakeholder participation. This includes regional transmission planning experts, sub-regional planning groups, state and provincial energy offices, regulators, load serving entities, environmental and consumer advocates as well as WECC and non-WECC entities. TAS work groups will develop recommendations on key assumptions and data requirements for expansion planning studies and will recommend ways of addressing data gaps to TEPPC.
- 3.11.3 TAS and work group membership is open to all stakeholders. Stakeholders are encouraged to be active participants in TAS and in any or all work group activities, lending their time and expertise to the combined planning effort. Parties who wish to join TAS or any of the work groups may contact the WECC Staff, any TEPPC member or its Facilitator, or the TAS Chair (or Co-Chairs) to be added to the membership list for TAS or any of its work groups.
- 3.11.4 TAS meetings and meetings of its work groups are open to the public. Dates, locations and times of these meetings are posted on the TEPPC Event Calendar.
- 3.11.5 Notice of TAS and work group meetings are sent by e-mail to all parties listed as members of the relevant group. Any party may become a member as indicated in 3.11.3 above.
- 3.11.6 Documents for meetings of TAS and its work groups are distributed with meeting notices or in subsequent e-mail distributions. Major documents are also posted on the WECC website as indicated in paragraph 3.10.2.

4 Relationship of TEPPC to Sub-regional Planning Groups and to Transmission Providers

4.1 The Role of the Sub-regional Groups

Given the geographic scale of the Western Interconnection, no single regional activity could address the needs of all participants. The West's geography imposes an inherent sparsity on the transmission network, and there is a wide diversity in climate, customer demographics, and resource concentration. What members of a sub-regional planning group may see as a high priority concern may not have sufficient impact across the region to warrant study by a regional group. For this reason, the formation of TEPPC did not lessen the need for more locally-focused sub-regional groups. The proposed western transmission planning process endeavors to capture the best of both worlds.

The sub-regional planning groups were organized to address common issues within a particular portion of the Western Interconnection. These organizations are much closer to the loads being served and to smaller load serving organizations, such as municipal or rural electric cooperative systems, increasing the participation of such organizations in transmission planning. In this way, the West's layered approach of TEPPC and sub-regional planning groups serves to broaden overall participation.

Each of the sub-regional groups will have an open, transparent planning process that will be linked to the TEPPC process. The development of joint projects that meet specific needs for a specific transmission area is much more likely at the sub-regional level than it would be if only a single regional organization existed. The sub-regional planning groups may also perform reliability studies. Sub-regional groups will develop transmission alternatives and make technical and economic evaluations of those alternatives. The sub-regional groups may request TEPPC to perform studies. They will form study groups based upon the natural topology of the transmission system and long standing relationships. In some sub-regions, the majority of the transmission enhancements and upgrades that will occur will be the result of sub-regional planning activities.

4.2 The Sub-Regional Groups

The following sub-regional planning groups work with TEPPC to produce a cohesive, regional approach to transmission expansion planning.

- (1) The Northwest Transmission Assessment Committee (NTAC) of the Northwest Power Pool (NWPP) is an open forum to address

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planning and development for a robust and cost effective NWPP area transmission system. NTAC was formed in 2003 after the Transmission Planning Committee elected to expand its "scope of activities to include expansion planning at a broad conceptual level." Membership includes NWPP members and other interested parties.

- (2) ColumbiaGrid was formed in 2006 to improve the operational efficiency, reliability, and planned expansion of the Northwest transmission grid. ColumbiaGrid has substantive responsibilities pursuant to a series of Functional Agreements with Members and other Qualified Non-Member Parties. These agreements relate to planning, reliability, OASIS, and other development services. ColumbiaGrid's sub-regional planning responsibilities are set out in the Planning and Expansion Functional Agreement (PEFA), which coordinates planning activities on a regional basis through a single-system approach. Participation in the PEFA is open to all qualified non-member parties as defined in the PEFA, including Northwest transmission providers, transmission customers, and others. In addition to ColumbiaGrid, the current parties to the PEFA (Planning Parties) include Avista Corporation, Bonneville Power Administration, Chelan County Public Utility District, Grant County Public Utility District, Puget Sound Energy, Inc., the City of Seattle (acting by and through its City Light Department), Snohomish County Public Utility District, and the City of Tacoma, Department of Public Utilities, Light Division (dba Tacoma Power). The Planning Parties include transmission owners subject to the Commission's ratemaking jurisdiction (i.e., public utilities with an OATT), as well as those that are not. The planning process outlined in the PEFA relies on the use of study teams that are open to all stakeholders and interested parties. The process also requires notification of affected parties and requires that adverse impacts from projects be identified and mitigated.
- (3) The Northern Tier Transmission Group (NTTG) is comprised of transmission owners serving the Northwest and Mountain states. They are committed, with the active cooperation of state governments and open participation of affected stakeholders, to improving the operations of and charting the future for the grid that links their service territories. Participants in NTTG are committed to increasing efficient use of the grid and to developing the infrastructure needed to deliver new renewable and thermal power resources to consumers. NTTG's participating utilities are Deseret Power Electric Cooperative, Idaho Power, NorthWestern Energy, PacifiCorp and Utah Associated Municipal Power Systems with additional members of the steering committee from the Idaho Public Utilities Commission, the Oregon Public Service

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Commission, the Utah Public Service Commission, the Montana Public Service Commission, the Montana Consumer Council and the Wyoming Public Service Commission.

(4) WestConnect Sub-Regional Groups (SWAT, CCPG and Sierra) – WestConnect is comprised of utility companies providing transmission of electricity in the Southwestern United States, working collaboratively to assess stakeholder and market needs and develop cost-effective enhancements to the Western wholesale electricity market. WestConnect has three sub-regional planning groups that coordinate transmission planning with three planning areas: Southwest Area Transmission (SWAT), the Colorado Coordinated Planning Group (CCPG) and the Nevada-California Sierra area (Sierra). The transmission owners of WestConnect are:

- Arizona Public Service, El Paso Electric
- Imperial Irrigation District
- Nevada Power
- Sierra Pacific Power
- Xcel (Public Service of Colorado)
- Public Service of New Mexico
- Sacramento Municipal Utility District
- Southwest Transmission Company
- Tri-State Generation and Transmission
- Tucson Electric Power and the Western Area Power Administration (Desert Southwest Office)
- Rocky Mountain Office
- Sierra/Nevada Office)

(5) California Planning Group – A sub-regional planning organization is being formed that will include, at a minimum, the California ISO and other transmission providers in California, plus transmission owners, load serving entities, generators and regulators.

4.3 The Sub-Regional Planning Group Requirements

WECC/TEPPC will promote openness and transparency at a regional level, while the sub-regional planning groups will promote openness and transparency within their defined geographic and electrical footprints. The sub-regional planning groups will meet the FERC requirements for openness, transparency, etc. and will hold regularly scheduled meetings that are open to all stakeholders and are fully compliant with OATT standards of conduct. Such meetings will provide a forum for open discussion of transmission needs, concerns, plans, and issues. The sub-regional planning groups will participate in TEPPC, and TEPPC will

maintain a list of sub-regional groups with links to relevant websites. The sub-regional groups will continue to encourage participation by all stakeholders including customers and local, state and federal agencies within the scope of their portion of the interconnected network. Specifically, the sub-regional planning groups and TEPPC will:

- Conduct, at least annually, transmission system expansion studies and plan development in accordance with NERC/WECC planning criteria.
- Coordinate efforts such that the transmission planning study activities of each sub-regional planning group are synchronized the TEPPC study cycle.
- Support a single repository of all system expansion reports and information for the entire Western Interconnection.
- Commit to coordinate and share information and assumptions for planning studies and efforts between each sub-regional planning group and input to WECC.
- Maintain individual planning processes and procedures, but work to coordinate planning efforts between groups.
- Support sub-regional planning groups and Interconnection-wide planning.
- Collaborate with each other to the greatest extent possible.
- Where appropriate, in coordination with WECC TEPPC and other sub-regional planning groups, develop coordinated transmission studies and plans.

4.4 Congestion Study Obligations of Transmission Provider and TEPPC and Sub-regional Planning Group Support

The obligation to meet regional planning principles specified in FERC Order No. 890 belongs to the transmission providers', not TEPPC or the sub-regional groups. TEPPC and the sub-regional groups will act in support of the transmission providers to create a true regional planning process. By participating in the TEPPC process, the transmission providers will be able to meet the intent for regional participation expressed by FERC in Order No. 890.

Each transmission provider will have on file with the FERC as part of its OATT an Attachment K that describes its transmission planning process. This will include a coordinated, regional planning process that complies with the planning principles adopted in Order No. 890. The transmission planning process will include the transmission provider's participation in TEPPC and sub-regional planning groups

As discussed in subsection 5.1 below, Order No. 890 allows stakeholders to submit requests for economic planning studies of congestion. These requests will be submitted to transmission providers under the provisions of each transmission provider’s Attachment K to its OATT. Attachment K will also describe the TEPPC process (detailed in Section 5 below) that will be used to prioritize and respond to congestion study requests on a west-wide basis to create a synchronized study plan among TEPPC, the sub-regional planning groups and the transmission providers.

5 A Cohesive Approach to Congestion Studies

5.1 The Congestion Study Principle

One of the new requirements imposed on transmission providers in Order No. 890, is compliance with the economic planning studies principle. FERC found that:

... to represent good utility practice and provide comparable service, the transmission planning process under the *pro forma* OATT must consider both reliability and economic considerations.¹⁰

They further observed that:

The purpose of this principle [economic planning studies] is to ensure that customers may request studies that evaluate potential upgrades or other investments that could reduce congestion or integrate new resources and loads on an aggregated or regional basis (e.g., wind developers), not to assign cost responsibility for those investments or otherwise determine whether they should be implemented.¹¹

The Commission directed that in the planning process to be described by Attachment K, stakeholders will be given a right to request a defined number of high priority studies annually. Transmission providers were also directed to consult with their stakeholders during the development of Attachment K to devise a means to allow transmission providers and stakeholders to cluster or batch requests for economic planning studies to enable efficient performance of such studies.¹²

The study activity provided for in Order No. 890 is separate from the OATT studies specified for transmission service requests and generator

¹⁰ FERC Order No. 890, ¶542, p.310.

¹¹ FERC Order No. 890, ¶544, pp 311-312.

¹² FERC Order No. 890, ¶¶546-547, pp. 313-314.

interconnection requests, which will continue to be done under the appropriate provisions of the OATT. The congestion studies described by Order No. 890 provide stakeholders with information that they can use for:

- Developing transmission expansion policies.
- Identifying needs for demand-side resources.
- Establishing transmission needs for alternative energy sources (e.g., wind or solar).
- Making requests for transmission service through transmission service providers’ OATTs.
- Identifying best locations for generator interconnection.
- Developing potential transmission projects or non-wire alternatives for congestion relief, etc.

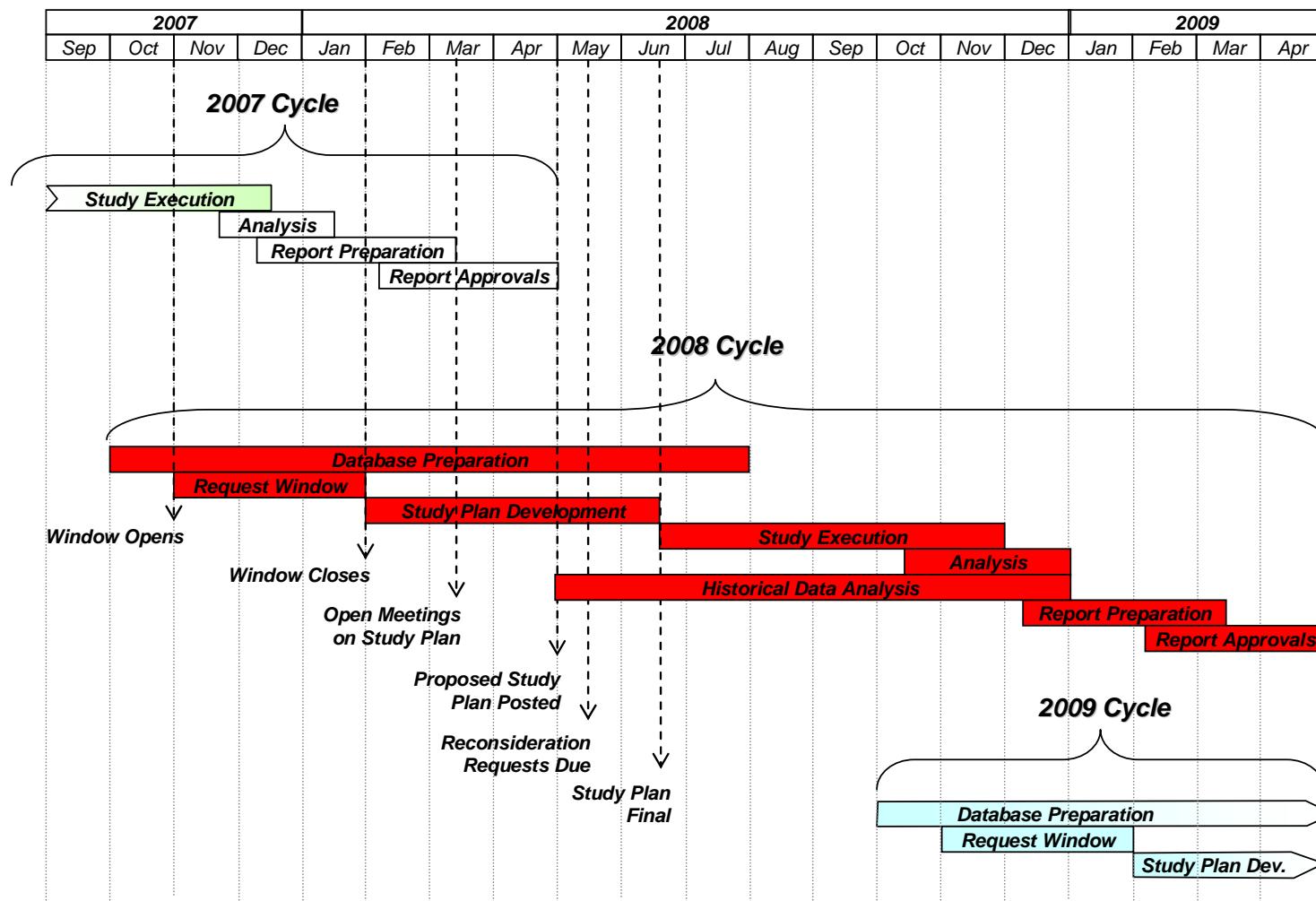
5.2 Synchronizing the Study Cycle

As a general rule,¹³ implementing FERC’s Order No. 890 economic planning studies requirement on a provider-by-provider basis would be costly, would likely result in duplication, and could hinder the sub-regional and regional coordination that FERC desires. Further, congestion issues are typically a product of system-wide dispatch and not solely of dispatch within a single provider’s transmission facilities. Performing production cost congestion studies at the regional or sub-regional level is more effective and more efficient. Because far more entities have an interest in regional studies, a balance must be struck between the desires of all stakeholders for information and the cost of producing that information. The proposed approach to meeting that balance is to include an annual synchronized study cycle in the Western transmission planning process. The annual synchronized study cycle will have the following elements:

5.2.1 WECC/TEPPC Database. The WECC/TEPPC database is the starting point for congestion studies by TEPPC, sub-regional groups and transmission providers. This database is available to the public. It utilizes publicly available information for expansion plans (such as state Integrated Resource Plans) and economic inputs from public sources to avoid confidentiality issues regarding data transparency.

¹³ In some instances where effects are localized to a portion of the system, congestion studies may best be performed by an individual transmission provider.

Figure 5.1
Synchronized Study Timeline



— D R A F T —

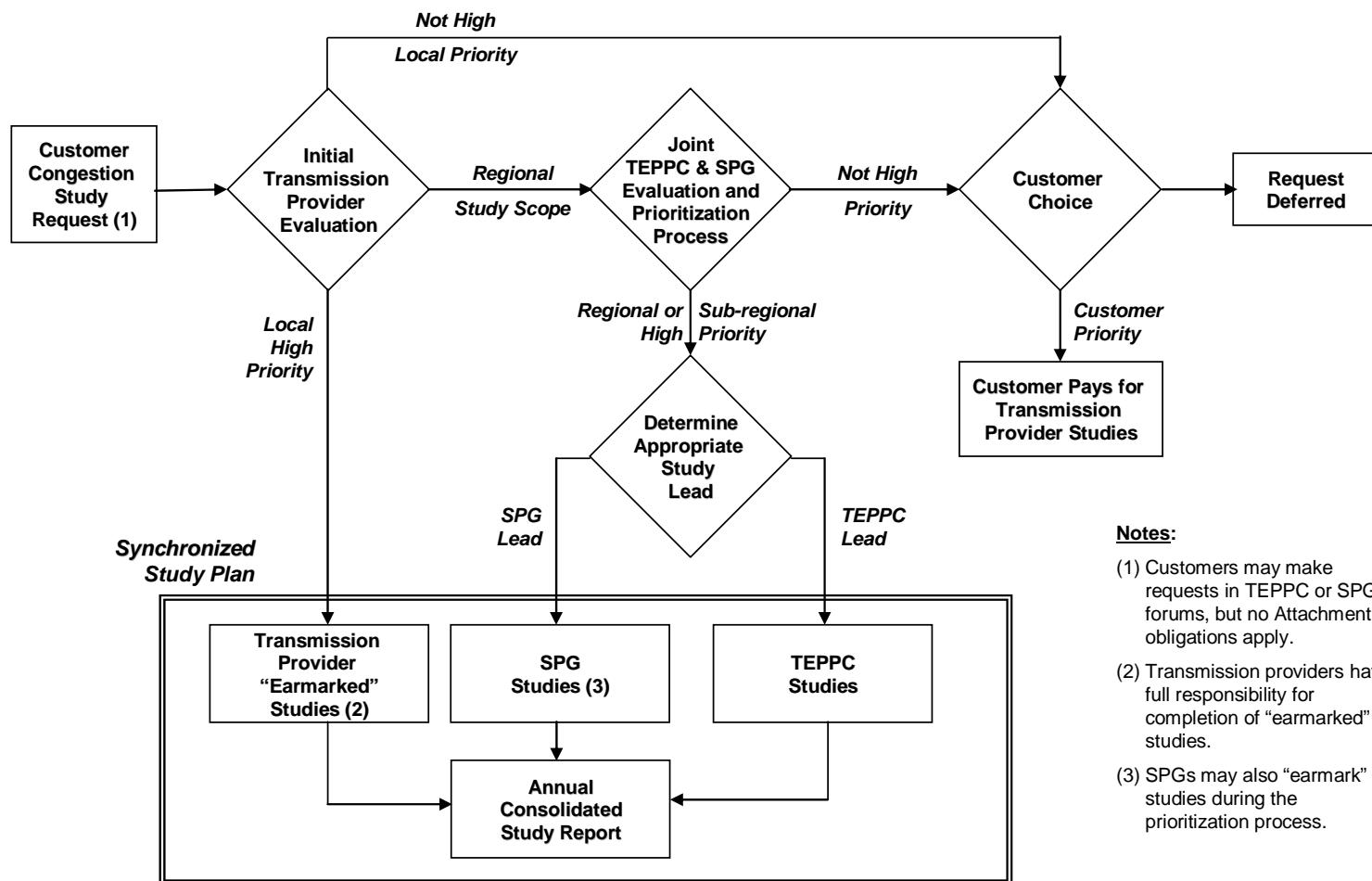
5.2.2 Study Cycle Timeline. Figure 5.1 shows a timeline for the synchronized study cycle to be coordinated by TEPPC. In this diagram there is no differentiation between transmission providers, sub-regional groups or TEPPC since all three would operate on the same overall cycle. As shown in Figure 5.1, activities for each study year overlap because data preparation must begin early and final report approval will occur after the end of the calendar year. Three study years are used as examples to show this general pattern. In this figure, the activities described in paragraphs 5.2.4, 5.2.5 and 5.2.6 are combined and labeled “Study Plan Development.” Study execution, analysis and report writing follow with final report approval by then end of April each year.

5.2.3 Request Window. Each year a study request window will be open for three months (from November 1st through January 31st) for each study year. Stakeholders will submit their requests to transmission providers under the provisions of Attachment K. Requests received by January 31st will be provided to TEPPC by participating transmission providers. As shown in Figure 5.1, study analysis and initial report drafting occur before the request window closes to allow this information to guide study requests. All requests provided to TEPPC will be combined into a single list of requests for use in developing a west-wide, synchronized study plan

5.2.4 Consolidation of Study Requests. In March of each study year, TEPPC will convene an open meeting (and follow-up meetings as needed) to develop a synchronized Western study plan. Figure 5.2 is a schematic diagram of the formation of the study plan through the open meeting(s). Prior to forwarding customer requests for congestion studies, the transmission providers make an initial evaluation to sort out requests that have high priority for local studies and earmark those studies to be handled through their local planning process. Transmission providers may choose to have requests reviewed by their sub-regional planning group to determine whether the sub-regional group wishes to ear-mark studies before submission of the requests to TEPPC or to make clustering/combination recommendations to TEPPC.

Figure 5.2

***Synchronized Study Development and
Congestion Study Request Processing***



All requests, including studies earmarked by transmission providers or sub-regional planning groups, will come to TEPPC. TAS, with WECC Staff assistance, will combine requests received from all sources into a single list of potential studies. The list will include requests received by transmission providers and recommendations for follow-up studies arising from work done by TEPPC, sub-regional planning groups or transmission providers during the previous study year.

In an open process with WECC Staff assistance and subregional planning group participation, TAS will suggest the possible clustering or combination of study requests to maximize the value of the study work to be performed. Prior to the first open meeting, the consolidated list of potential studies and possible combinations will be distributed to TEPPC, TEPPC Correspondents, sub-regional planning groups and all parties who have submitted a study request. Discussions will be held in open meetings to evaluate suggested consolidations and priority of potential studies as described in paragraph 5.2.5 below.

A requesting party is free to participate directly in the TEPPC process from the time its submission of a study request is made to a transmission provider. Study requestors are encouraged to join in the discussion of study priorities and to use the TEPPC process for resolving disputes over the components of the study program. However, they are not required to participate.

5.2.5 Prioritization of Studies. The development of the synchronized study program and assignment of project leads must consider the best use of available resources for completing the studies. Each organization needs to determine the number of studies it can undertake in each cycle. Depending on the number of requested studies, the prioritization of the study requests may be required as shown in Figure 5.2 to identify the studies that have high priority for either regional or sub-regional studies.

While prioritization may be simplified by the clustering of studies or combining of like requests, the volume of requests may still exceed study resources. The priority and order of studies needs to be part of the study plan development discussions. Input on the prioritization of requests will be taken during the study plan discussion meeting(s) so that stakeholders are party to these discussions and are informed regarding the choices that must be made to develop a study program that can be efficiently and effectively performed during the study year.

The criteria used for the prioritization will include:

- (a) What portion of the interconnected system will be considered by the study?
- (b) Does the request raise fundamental design issues of interest to multiple parties?
- (c) Does the request raise policy issues of national, regional or state interest; for example, access to renewable power, and location of both conventional and renewable resources?
- (d) Can the objectives of the study be met by other studies by clustering or combination?
- (e) Will the study provide information of broad value to customers, regulators, transmission providers, etc.?
- (f) Can similar requests for studies or scenarios be represented generically if the projects are generally electrically equivalent?
- (g) Can requests be aggregated into energy or load aggregation zones with generic transmission expansion between?
- (f) Does the study request require the use of production cost simulation or can it be better addressed through technical studies such as power flow and stability analysis?

Since it is the transmission provider’s obligation under its tariff to provide congestion studies, transmission providers must be active in the study formation and prioritization process to ensure that all requests received from stakeholders by the transmission provider are given fair and equitable treatment per the provisions of that transmission provider’s Attachment K.

5.2.6 **Responsibility for Completion of Studies.** Based on the open discussions described above, a proposal will be made for the studies to be performed during the next study year. The proposal will identify the organization (TEPPC, sub-regional planning group, or transmission provider) best suited to lead each study as shown in Figure 5.2. For example, TEPPC will take the lead for studies with west-wide impacts or where the nature of the study was such that it could best be addressed by TEPPC’s technical expertise in economic modeling of system-wide transmission performance. Requests dealing with more localized network issues, such as loops around a metropolitan area or upgrade of facilities in a specific restricted area, may best be addressed by a sub-regional group. A request so specific that it involved only the facilities of a

single transmission provider might best be led by that transmission provider. The overriding principle is to assign the study requests, suitably clustered, to the organization best able to address the request based on stakeholder input and on the lead organization's technical expertise and knowledge of the issues.

At any time in the study plan development process, transmission providers or sub-regional groups may earmark studies that they believe should fall under their responsibility. Any organization making such an earmark takes responsibility for completion of the study and communication of the results. TEPPC will make its website available for such communications either directly or by providing a link to the location where the information is posted. While TEPPC will not be responsible for completion of such earmarked studies, including these studies in the consolidated list will assist all parties by making them aware of the planning work being done across the West. It will provide all stakeholders with information on the relationship between local, sub-regional and TEPPC study efforts that taken together, constitute the synchronized western study plan.

5.2.7 **Finalizing the Study Plan and Requests for Reconsideration.** After considering input received during the study plan discussion meeting(s) and the prioritization of the potential study list, TEPPC will post a proposed synchronized study plan by April 30 of the study year, as shown in Figure 5.1. The posted plan will identify the studies selected for completion, the organization agreeing to lead each study and a list of requests that will not be completed during the current study year. Any party whose study was not included in the synchronized plan or who has other concerns with the final study plan proposal may submit a request for reconsideration to TEPPC by May 15th of the study year. TEPPC will respond to such requests by June 15th. Parties dissatisfied with TEPPC's final action may avail themselves of the WECC dispute resolution process for mediation or arbitration of their dispute over the study plan components, priorities or study assumptions.

5.2.8 **Studies Not Included in Final Study Plan.** Parties whose study requests are determined to not have high priority for local, sub-regional or regional studies as determined by the process described in paragraph 5.2.5 above, will be notified through their transmission provider. As shown in Figure 5.2, the requesting party may then choose to defer the study request for a later year or to negotiate with the transmission provider to pay for that study to be done in the current year. As transmission providers respond to such requests, TEPPC will provide assistance to the transmission provider by supplying the TEPPC economic planning database and

such other requested assistance to the extent that the request is within TEPPC’s authorized scope of activities.

5.2.9 **Study Plan Execution and Monitoring.** TEPPC will hold monthly coordination calls in which all the study leads for regional or sub-regional studies will participate to report on study progress. Each study lead will also report progress and respond to questions at each quarterly TEPPC meeting. In these reports, the leads for regional or sub-regional studies will indicate whether further coordination/collaboration is needed with other groups. The purpose of these regular forums for coordination of study work is to ensure that the resulting set of studies will be more cohesive and to keep stakeholders apprised of schedule, outcomes, difficulties and issues associated with each study.

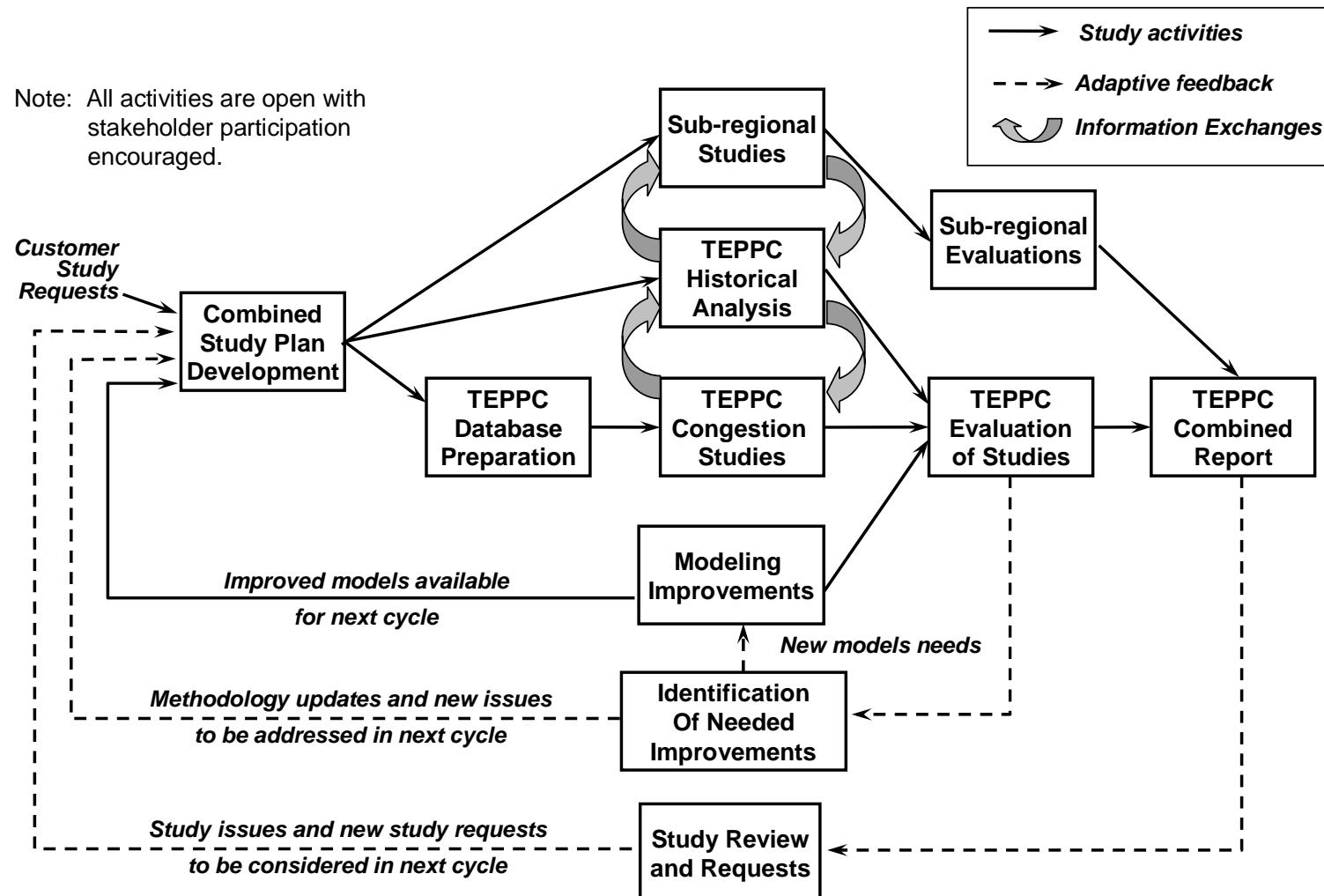
TEPPC or a sub-regional planning group accepting a study lead assignment will make best efforts to ensure timely completion of those studies. Difficulties in completing the assigned studies are to be made known to the transmission provider as soon as they are apparent so this information can be conveyed to the requesting party and adjustments made in consultation with the transmission provider and the requesting party.

5.3 Illustrating the Synchronized Cycle

Figure 5.3 provides a graphic illustration of the synchronized study cycle to be implemented through this protocol to assist transmission providers in meeting their Attachment K obligations for compliance with Order No. 890. The process begins with the combined study plan development using transmission provider’s customer study requests and feedback from prior year’s studies. The combined plan includes a clustering, evaluation and prioritization of all requests received by transmission providers as described in subsection 5.2. TEPPC would be responsible for database preparation and would be the lead for its study assignments and for historical analysis.

The sub-regional groups, transmission providers and TEPPC will perform the study work for which they have lead responsibility. TEPPC will also finalize preparation of the database to be used for economic expansion studies such as, production cost evaluations of congestion. Database preparation will actually begin prior to the study year in order to have data available in time for use when the study plan is finalized.

**Figure 5.3
An Annual Synchronized Study Cycle**



Information exchanges among the study leads, represented in Figure 4.3 by curved arrows, will occur at TEPPC meetings, subcommittee meetings and monthly coordination calls. Upon completion of studies, TEPPC and the subregional groups will evaluate their results. A preliminary draft of the report will be made available by December 31st of the study year with the final report completed by the following March 31st. The TEPPC report will provide full details for TEPPC studies. The results of sub-regional or transmission provider studies will be reported as summaries with links provided for access to full reports.

The synchronized study cycle is designed to be adaptive with self-evaluation and feedback that improve the process in subsequent study years. The evaluations may include production cost model improvement needs, improvement of sub-models (such as, hydro or wind), re-examination and improvement of methodologies, and issues to be considered not covered in previous and new study requests arising from the study plan report.

This approach to study plan development will be conducted at TEPPC meetings and will be open to all stakeholders. The process will gather and disperse information from and to stakeholders in all layers of the planning process – WECC/TEPPC, the subregional groups, transmission providers, state IRP processes, etc. While each organization may have specific study responsibilities, the information transfer between them is designed to produce an integrated, cohesive study result.

6 *TEPPC Activities in Support of Study Plan*

6.1 TEPPC Annual Activity Calendar

6.1.1 Figure 5.1 provides the general calendar timeline for TEPPC activities to form and execute the synchronized study plan. Prior to the beginning of each calendar year, TEPPC will establish specific meeting dates and work completion dates for that year. This information will be posted on the WECC website and updated as necessary through the year with agendas, work schedule updates and documents to be considered in TEPPC or TAS meetings.

6.2 TEPPC Work Group Responsibilities.

6.2.1 **The Data Work Group.** The Data Work Group is responsible—with support from WECC Staff—for collection and verification of the TEPPC database for economic studies of transmission expansion. The Data Work Group will use publicly available information for populating the database and will make maximum use of data collected by other WECC committees for reliability studies. The

database will be made available to sub-regional groups, project developers, regulators and others in a portable database format that is usable by vendors of production cost simulation programs.

6.2.2 **The Studies Work Group.** The Studies Work Group is responsible—with support from WECC Staff—for directing those studies for which TEPPC is the study lead. The Studies Work Group will be responsible for establishing the assumptions for the studies, selecting the study periods to be used for base cases preparation, the system configurations evaluated, evaluating study results and preparing study reports. The selection of base cases, assumptions and methodology will be based on the needs of the consolidated study plan, sub-regional planning groups, transmission providers and stakeholders, while considering the best use of resources and the need for timely completion of work as part of the annual study cycle.

6.2.3 **The Modeling Work Group.** The Modeling Work Group is responsible—with support from WECC Staff—for evaluating and proposing improved models for production cost simulation and for providing for portability of the TEPPC economic studies database.

6.2.4 **The Historical Analysis Work Group.** The Historical Analysis Work group is responsible for evaluating congestion events and impacts using historical data. Historical analysis provides balance and perspective for interpreting the results of production cost simulations of congestion. It also provides perspective for making judgments about the urgency and value of study requests when the prioritization of study requests is required (see paragraph 5.2.5). As shown in Figure 5.1, this work occurs in parallel with the production cost simulation studies of congestion and with the study work of the sub-regional planning groups. The results of this historical analysis of transmission system performance will be included in the annual study report as shown in Figure 5.3.

6.3 Process Evaluation.

Each year as part of the approval of the annual study report, TEPPC will conduct a review of all its activities. This review will include an evaluation of the following:

- Effectiveness of the study activities.
- Need to modify its structure of sub-committees and work groups.
- Need for better modeling.
- Need for database improvement.
- Effectiveness of coordination with sub-regional planning groups and other WECC committees.

The evaluation of past performance will also include a determination of the need for additional WECC study resources based on the number of potential study requests that could not be included in the synchronized study program.

TEPPC will make recommendations for adjustments for implementation where necessary. The recommendations will be submitted to the WECC Board to approve changes needed in TEPPC’s structure or budget.

TEPPC will develop a schedule for implementing its changes in a prudent and expeditious manner.

6.4 Scope of Studies

- 6.4.1 Issues Addressed by TEPPC. The primary focus of TEPPC’s study effort is evaluation of west-wide impacts of system congestion and expansion alternatives in response to varying portfolios of resources that may be deployed to serve future loads on the transmission system. TEPPC will not evaluate specific projects, but will provide system information and study results that can be used by others to develop transmission projects, demand-side response methods, new resource plans or other non-wire solutions for potential future congestion on the transmission system.
- 6.4.2 Issues Not Addressed by TEPPC. TEPPC will provide the results of studies to all parties, but it will not rank alternatives to identify preferred alternatives nor will it engage in any allocation of costs among potential project participants or beneficiaries. Selection of alternatives and development of projects will remain the province of parties willing to make capital investments in the Western Interconnection as part of their business plans for participation in Western electric power market. Allocation of cost will remain under the jurisdiction of state and federal authorities or under agreements entered into by subregional groups or groups of willing investors and their customers.
- 6.4.3 Disclosure of Assumptions and Criteria. All assumptions and criteria used for preparation by TEPPC shall be publicly available. The development of study assumptions and criteria will occur in open meetings of TEPPC and of TAS and its work groups. Reports of study results will list the assumptions and criteria used in those studies. Study results will be posted on the WECC website as they become available.

6.5 Data Management

- 6.5.1 Obligations to Supply Data. WECC members will supply data for the TEPPC database through the existing WECC Loads and

Resources Subcommittee data request forms and instructions following the WECC rules for data provision and security.

6.5.2 Access to Data. TEPPC will operate on an open, transparent basis with the TEPPC economic planning database available upon request. Requests for the TEPPC database will conform to the WECC Information Disclosure Policy and its associated Exhibits.

6.6 Congestion and Expansion Case Studies

6.6.1 TEPPC Study Program. As described in subsections 4.2 and 4.3, TEPPC will participate with transmission providers and sub-regional planning groups in the development of a combined synchronized study plan. TEPPC will include its recommendations for follow-up studies from evaluation of the previous year's study results in the list of potential study requests. TEPPC's recommended study program will not have greater or lesser priority than requests submitted by any other party, but will be considered as part of the combined list. Parts of TEPPC's own recommended study program may be deferred to later years when other requested studies are judged to have greater value and merit for the current study cycle.

The purpose of TEPPC's economic study program is to identify potential congestion problems in the transmission system. As part of it studies, TEPPC may evaluate how identified problems could be addressed. TEPPC may examine both conceptual non-wire and wire solutions in order to understand the extent of the problem, evaluate resolution possibilities and provide information to system users and potential investors. Solutions to be considered may include: demand side response, demand management systems, local generation and transmission expansion options including planned or announced projects.¹⁴

6.6.2 Data Collection for Studies. Data collected for studies and for the TEPPC database will include: future loads, existing generation, new committed resource additions, network impedances, committed transmission additions, hydroelectric production forecasts and generic thermal production costs.

- Data collection assumptions will be identified and listed for inclusion in the annual study report.
- The data collection sources will include the work of other WECC committees, subcommittees and work groups, of State

¹⁴ Considerations will include projects under review as part of the WECC Regional Planning Process as described in section 7.3 below.

integrated resource planning processes, of sub-regional planning groups, and of transmission providers.

- Parties making study requests will be required to supply data needed for the evaluation of their requests. Failure to do so in a timely way will result in the elimination of that request from synchronized study plan.

6.7 Publication of Transmission Plans

6.7.1 TEPPC’s Role. TEPPC will publish a report of regional transmission plans. Because TEPPC is prohibited from naming “winners and losers” under its charter, TEPPC cannot select among proposals and develop an optimized transmission plan for the entire Interconnection. However, in its congestion studies, TEPPC can evaluate the economic impact of proposed projects, indicate the relative merits of alternative solutions to congestion and provide data that shows how different projects may meet similar objectives.

For example, had TEPPC existed when the 3rd AC Pacific Intertie and the Southwest Intertie Project (SWIP) were under consideration some years ago, TEPPC studies could have observed that both projects would move energy from the Northwest into the same areas of growing demand in California and study reports could have observed the impact of congestion of each project or both together. Such an evaluation would point to the degree of duplication that might exist.

However, having made such an evaluation, TEPPC would show both projects as being proposed without recommending which might be better. TEPPC will provide study-result information that will enable potential customers seeking future transmission capacity to make judgments about which projects they might consider to meet their needs, and information on projects they could support with capital investment or capacity purchase agreements. The same information will be useful to regulatory bodies at both the state and federal levels as they make decisions that fall within their jurisdictions.

6.7.2 Sub-regional Planning Groups’ Role. The agreements for forming each sub-regional group differ across the West. Some groups have made provisions for developing a consolidated, simultaneously-feasible transmission plan with provisions for joint project development and cost allocation principles. However, not all groups have made this choice. To the extent they do not provide for a single transmission plan, their role is much like that of

TEPPC: providing information to investors, customers and regulators.

6.7.3 Transmission Provider Role. Each transmission provider will be responsible for publishing its own transmission plan under provisions described in its Attachment K.

7 Communication and Collaboration

7.1 Information Portal for Major Projects

As future transmission needs are identified, parties with an interest in meeting those needs will come forward with proposals for demand-side solutions, new generation or investments in transmission infrastructure. As these projects are announced, TEPPC will provide an information portal for posting information regarding major projects. TEPPC will also establish a coordinated regional planning meeting calendar in conjunction with sub-regional planning groups, to minimize the occurrence of duplicative or overlapping regional planning meetings. The information portal will provide basic information on these projects and provide links to more detailed information as supplied by the project's sponsors.

TEPPC's provision of information will not and cannot provide endorsement or recommendation of any project. Instead, TEPPC acts as an incubator for development of proposals by providing information and encouraging parties to find solutions to identified problems. In the course of executing studies as part of the synchronized study plan, TEPPC may include projects in simulations and report their congestion relieving effects, but will make no judgments about the merits of one approach over another. Many other technical factors must be considered beyond production cost simulation to determine specific facilities and a plan of service and before such judgments can be made. The choice of "winners and losers" is left to investors, customers and regulators.

7.2 Workshops and Webinars

TEPPC will provide workshops and webinars¹⁵ as needed to facilitate dissemination of information and discussion of issues related to future transmission needs. TEPPC, TAS and the work groups have hosted such workshops and webinars on topics that have included: the TEPPC portable database format, wind energy development and modeling, major transmission project proposals and compliance with Order 890 requirements. TEPPC will continue to host such workshops and webinars subject to expressed interest among the TEPPC and its stakeholders.

¹⁵ Seminars conducted using internet based conference facilities.

Requests to host future workshops and webinars are welcome and should be made to the TEPPC Chair(s) (or Co-chair) for TEPPC’s consideration.

7.3 Relationship of TEPPC Expansion Planning to the WECC Reliability Planning Process.

As TEPPC activities reveal transmission needs and as projects are developed by the industry to meet those needs, these projects will naturally move from the realm of economic planning to the reliability planning activities that fall under WECC’s Planning Coordination Committee (PCC). TEPPC will provide the economic intelligence needed by project developers—whether they are developers of demand-side services, builders of new resources or developers of new transmission—to develop a business plan, identify investors and customers, seek regulatory permits and approvals; and to construct, install and operate their equipment or facilities. TEPPC’s activities are preparatory to more detailed technical reviews under WECC and NERC reliability standards.

As the projects move from the formative stage toward commitment of capital, they enter the existing WECC Regional Planning Process, which leads to consideration of stakeholder needs and potential participation by other parties before the project configuration is finalized. Then projects are subject to the WECC Three Phase Rating Process for path rating and progress report review. This process ensures that any detrimental impact caused by the planned project on the existing transmission system is mitigated. The process identifies transmission capacity ratings and ensures reliable operating conditions.¹⁶ These activities precede energizing a transmission facility when it becomes an operational part of the Western Interconnection.

8 Cost allocation

Allocation of project costs will not be done by TEPPC. The sub-regional planning group’s agreements or transmission provider’s Attachment K may address project cost allocation, but such activities fall outside the scope of activities authorized for TEPPC by WECC (see paragraph 5.4.2 for further discussion.).

¹⁶ The procedures for project rating review and progress reports address the reliability impacts of transmission projects. The phases of the process are shown in Figure 1 of the PCC Handbook (<http://www.wecc.biz/modules.php?op=modload&name=Downloads&file=index&req=getit&lid=215>).

After regional planning review, a project that is to be part of a formally rated transfer path enters a three-phase process that results in an approved capacity rating for the project prior to its operation. The studies conducted by the project sponsor as part of the planning process include power flow and transient stability analysis. The study results are subject to peer review through PCC and its Technical Studies Subcommittee (TSS) to determine that when operating within the approved capacity rating, the project will be in compliance with NERC and WECC planning standards.