

**WEST
CONNECT**

Enhancing wholesale
electricity markets
in the southwest

2008

WestConnect

Transmission Planning Report

A Report Detailing the
Subregional Planning Efforts
Within the WestConnect Planning Area
During the 2008-2009 Timeframe

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A Report Prepared by:

K. R. Saline & Associates, PLC

160 N. Pasadena, Suite 101

Mesa, AZ 85201-6764

Phone: 480-610-8741

Fax: 480-610-8796

www.krsaline.com



FOREWORD

This report has been prepared on behalf of the WestConnect subregional planning participants. It was prepared in accordance with a contract agreement between K.R. Saline and Associates, PLC (“KRSA”) and WestConnect. It is considered a public document. However, use of the report by other parties shall be at their own risk. Neither KRSA nor WestConnect accepts any duty of care to such third parties.

KRSA is appreciative of the cooperation and support of the WestConnect planning participants throughout the inaugural WestConnect subregional planning process. Their attendance at subregional planning meetings, performance of technical studies, and contribution of data and information for this report has been exemplary. This indicates their continued commitment to improve and perfect an open, transparent and stakeholder driven subregional planning process that was in place prior to formation of the WestConnect planning process.

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EXECUTIVE SUMMARY

The purpose of the 2008 WestConnect Planning Report is to provide an overview of the subregional planning efforts that occurred within the WestConnect planning area in 2008. This report provides a high level summary of subregional planning efforts for the entire WestConnect planning area. Details of each subregional planning forum activities are well documented by meeting notes, presentations and reports posted to the WestConnect website. Therefore this report only aggregates information from the respective study forums in a summary manner.

The 2008 WestConnect planning cycle encompassed four noteworthy activities. Basin Electric Power Cooperative and Black Hills Power officially became WestConnect Planning Members in October 2008 and participated in the Annual Workshop and Annual Meeting. A third subregional planning group named Sierra Subregional Planning Group (SPPG) was officially formed for the Sierra Nevada and northern California area. Sierra Pacific Power Company, Sacramento Municipal Utility District, Transmission Agency of Northern California and Western Area Power Administration (Sierra Nevada Region) are the founding SPPG members. SPPG held their inaugural meeting in September. WestConnect performed its first WestConnect-wide annual adequacy study for 2013 and 2018. WestConnect also developed and implemented a new Transmission Plan Management (TPM) database which features on-line data entry and reports of the WestConnect Transmission Plan elements.

WestConnect hosted four stakeholder meetings in 2008. The Annual Planning Meeting was on January 17, 2008 at Nevada Power Company headquarters in Las Vegas, Nevada. A WestConnect TTC/ATC Workshop was held on May 21, 2008 at Arizona Public Service Company Headquarters in Phoenix, Arizona. A Joint CCPG/SSPG/SWAT meeting was held on August 20, 2008 at Tri-State G&T headquarters in Westminster, Colorado. WestConnect's Annual Planning Workshop was held on November 13, 2008 at Salt River Project's PERA Club in Tempe, Arizona. These activities resulted in an updated ten year transmission plan for the WestConnect subregional planning participants. That plan is documented in detail in a companion report entitled "2008 WestConnect Transmission Plan." Key findings of this report are outlined below.

1. Stakeholder involvement increased thru improved noticing mechanisms, renewable generation developer interest and participation, and integration of FERC 890 local and subregional planning requirements.
2. WestConnect's transmission planning focus remains on reliable system performance with specific attention being paid to stakeholder input, renewable integration and regional benefits.
3. Based upon the 2008 WestConnect Adequacy Study results for 2013 and 2018 the WestConnect planning processes appear to be yielding a sufficiently robust WestConnect Transmission Plan with a high degree of compliance with NERC TPL standards. .

4. Renewable Integration study work is continuing on multiple overlapping levels including NREL's Western Wind and Solar Integration Study, the WGA Western Renewable Energy Zone study, Colorado SB 100 studies and the SWAT Renewable Transmission Task Force study.
5. Subregional Planning Groups within the WestConnect planning area are developing Charters to provide the framework for future planning activities.
6. WestConnect continues to monitor and respond to the regional and public policy issues affecting transmission planning efforts.

During 2009, the projects and subregional planning groups will continue to invite stakeholder participation, input and review. The projects and subregional planning groups will continue to provide presentations on updates as they relate to transmission planning. The subregional planning groups SWAT, CCPG and SSPG will finalize formal charters depicting their goals and responsibilities. WestConnect will perform, document and report the 2009 WestConnect Adequacy Study findings and begin working on the inaugural WestConnect Biennial Long Range transmission study. A list of suggested improvements for the WestConnect planning process are found at the end of Conclusions section of this report

This report and its companion 2008 Transmission Plan Report collectively fulfill the annual deliverable requirements of the WestConnect transmission planning function. Both reports are presented to the WestConnect Planning Management Committee for action at the Annual Planning Meeting scheduled for January 14, 2009 at Nevada Power Company Offices in Las Vegas, Nevada.

OVERVIEW

This report documents the WestConnect planning activities that occurred during 2008, results of 2008 subregional transmission planning studies, and the proposed subregional planning activities for 2009. This report begins with a description of WestConnect’s planning authority. It also provides an overview of the brief history of the WestConnect Planning Report, and the purpose and framework of the report’s development.

PLANNING AUTHORITY

WestConnect is composed of electric utility companies providing transmission services throughout the southwestern United States. Its members work collaboratively to assess stakeholder and market needs and to develop cost-effective enhancements to the western wholesale electricity market. WestConnect is committed to coordinating its work with other regional industry efforts to achieve consistency in the Western Interconnection. A WestConnect Steering Committee is charged with the task of overseeing development and implementation of a variety of initiatives for the above stated purpose on behalf of the WestConnect members. Formation of a regional transmission planning function is one of the initiatives WestConnect has undertaken. On August 24, 2006, the WestConnect Steering Committee approved a “WestConnect Planning Objectives and Procedures for Regional Planning” document.¹

Fifteen entities are currently members to the Project Agreement for Subregional Transmission Planning (“STP Agreement”).² The STP Agreement establishes a formal commitment of the signatory parties to fund and oversee the WestConnect subregional planning process. The WestConnect STP Agreement also established a Planning Management Committee (“PMC”) made up of one representative of each of the signatory parties. The PMC is tasked with implementation of a subregional planning process that complies with the WestConnect Planning Objectives and Procedures for Regional Planning. The transmission providers that have signed the WestConnect STP Agreement and that currently comprise the PMC’s membership are listed in **Table 1** below.

¹ WestConnect Planning - Objectives and Procedures for Regional Planning document is available at - http://westconnect.com/filestorage/WestConnect_Objects_and_Procedures_for_Regional_Transmission_Planning.pdf

² The Project Agreement for Subregional Transmission Planning is available at - <http://www.westconnect.com/filestorage/050207RegionalPlanningProjectAgreementExecutionCopy.pdf>

Arizona Public Service	Salt River Project
El Paso Electric	Southwest Transmission Cooperative
Imperial Irrigation District	Transmission Agency of Northern California
Nevada Power Co. / Sierra Pacific Resources	Tri-State Generation and Transmission
Xcel Energy / Public Service Co. of Colorado	Tucson Electric Power Company
Public Service Co. of New Mexico	Western Area Power Administration
Sacramento Municipal Utility District	Basin Electric Power Cooperative
Black Hills Power	

Table 1 – Current WestConnect Planning Management Committee Members

The PMC has the authority to enter into contracts with individuals or firms for provision of project management, report writing, transmission planning and secretarial/communications services to the Southwest Transmission Planning Group (“SWAT”), the Colorado Coordinated Planning group (“CCPG”), Sierra Subregional Planning Group (“SSPG”) and other subregional transmission planning groups (“STPG”) efforts that form the WestConnect planning area. On May 23, 2007 K.R. Saline and Associates was hired as an independent contractor for the purpose of managing the WestConnect planning process and providing the above stated contracted services. The purpose of these contracted services is to annually develop a ten year integrated regional transmission plan derived from SWAT, CCPG, SSPG and other STPG efforts that accommodate all transmission needs across the WestConnect planning area.

The WestConnect transmission planning area encompasses all or portions of eight Western states: Arizona, California, Colorado, New Mexico, Nevada, South Dakota, Texas, and Wyoming. The planning area consists of the geographic area traversed by transmission facilities owned and operated by the WestConnect STP Agreement transmission providers as listed above in **Table 1**. Many of their transmission facilities are jointly owned with other parties. The figure below graphically displays the current WestConnect planning area transmission.



Figure 1 – WestConnect Planning Area

HISTORY OF THE WESTCONNECT PLANNING REPORT

The 2008 WestConnect Planning report is the second annual report documenting the transmission related planning efforts within WestConnect. The first WestConnect Planning Report documented the planning efforts during WestConnect’s inaugural year of planning that occurred during 2007. A short description of the processes to develop, prepare and publish each report is provided in the following paragraphs.

2007 WESTCONNECT PLANNING REPORT

On December 4, 2007 the first draft of the 2007 WestConnect Planning Report was released for the two week public review and comment period on via email, website announcement and posting to the WestConnect website. During the review period, Westconnect Planning received comments from eleven stakeholders. The comments

and concerns were complied and posted for subsequent comment.³ These comments were addressed and integrated into the final draft 2007 WestConnect Planning Report.

On January 9, 2008, the final draft of the first annual WestConnect Planning Report was released to the public. On January 17, 2008 the 2007 WestConnect Planning Report⁴ was unanimously approved by the PMC at the WestConnect Annual Meeting in Las Vegas with the changes reflected within the 2007 WestConnect Planning Errata⁵.

2008 REPORT PURPOSE AND FRAMEWORK

The purpose of the 2008 WestConnect Planning report is to provide an overview of the subregional planning efforts within the WestConnect planning area. This report specifically documents the subregional transmission planning processes, 2008 activities and study results, and outlines the proposed 2009 WestConnect transmission study plan. It also documents WestConnect planning efforts to engage with and respond to emerging public policy and regulatory requirements. The 2008 WestConnect Planning Report is intended to provide a high level summary of subregional planning efforts for the entire WestConnect planning area. Details of those efforts are well documented within each respective subregional forum. Therefore this report only aggregates information from the respective study forums in a summary manner.

The 2008 WestConnect Planning report established criteria for inclusion within this report when the PMC approved the WestConnect Transmission Planning Report Guidelines as shown in **Exhibit 1**. The prerequisites for inclusion of study results within this report can be summarized by the following three criteria:

- Final study reports or summaries must have been through a documented open and transparent stakeholder or industry peer review process and available for posting on the WestConnect website;
- Results of study must have been presented at one or more subregional planning meetings;
- Studies performed for or by a WestConnect STP group must have a study plan approved by the STP.

The collective efforts reported above have resulted in an integrated ten year transmission plan for the WestConnect subregional planning participants. The aggregate plan is documented in a companion report entitled

³ Complied Review and Comment located at - http://www.westconnect.com/filestorage/Comments_on_the_Draft_WestConnect_Planning_Report.doc

⁴ 2007 WestConnect Planning Report - http://www.westconnect.com/filestorage/WestConnect_Planning_Report_FINAL.pdf

⁵ 2007 Errata - http://www.westconnect.com/filestorage/2007_Annual_Meeting_Errata_v2.pdf

2008 WestConnect Transmission Plan. This report and the companion *2008 WestConnect Transmission Plan* report collectively fulfill the annual deliverable requirements of the WestConnect transmission planning function.

The report is sectionalized into four sections to address the planning activities within WestConnect. The first section is the process section which addresses how WestConnect developed this report. It is followed by an overview of the overall WestConnect planning processes. The second section is the *Planning Efforts* section which focuses on the stakeholder involvement, 2008 study activities and 2009 planned study work and activities. The third section of the report focuses on broader transmission planning public policy and regulatory requirements that have driven the current and future study work. The fourth and final section acts to draw general conclusions about stakeholder involvement, planning study work, public policy and regulatory requirements within the WestConnect planning area and set general structure for future WestConnect related planning activities.

This report will regularly use industry terms and acronyms, therefore common industry terminology and acronyms are defined in **Exhibit 18**. Additionally, included as **Exhibit 7**, is a listing of the references and sources used throughout this document to research specific items in detail outside the scope of this report.

2008 REPORT DEVELOPMENT PROCESS

A three-stage approach was used to prepare the 2008 WestConnect reports. The first stage consisted of a workshop which offered participants the opportunity to make ten year plan presentations and discuss planning activities within the WestConnect planning area. During the second stage, WestConnect Planning staff prepared, distributed and posted to WestConnect's website the first draft report for public comment. A final draft of the report was prepared and posted on the website in response to the public comments received. The third stage of the process consisted WestConnect Annual Meeting during which WestConnect Planning presented the final draft of the report to the PMC for approval. A summary of each stage of the annual WestConnect reporting process is described in the following sections.

WESTCONNECT ANNUAL PLANNING WORKSHOP

WestConnect Planning arranged a public Workshop on November 13, 2008 at the Salt River Project's PERA Club in Tempe, Arizona. Transmission Providers and Subregional Planning Groups presented information regarding their respective transmission expansion plans and related planning activities. Merchant transmission and generation developers reported on their respective development plans.

The Workshop provided an informal setting to promote effective discussion of each presentation.⁶ Prior to the Workshop each presenter was provided an advance list of criteria and questions for addressing during their presentation as outlined below:

- Referencing the 2007 WestConnect Plan;
 - Highlight changes in your 2008 Plan, focusing on deletions and additions, and
 - Provide a Summary of transmission upgrades
- Questions for entities presenting plans:
 - What stakeholder input and review of your plan has occurred?
 - What technical studies were performed in 2008 to support your transmission plan?
 - What reports exist for the studies performed in 2008?

Each presentation was followed by an open period of discussion including questions and comments from the audience.

PREPARATION OF THE DRAFT REPORT AND INDUSTRY COMMENT

WestConnect Planning provided the first draft of the 2008 BTA report for industry review and comment beginning on December 9, 2008. The first draft report was based on ten year plans entered in the Transmission Plan Management system (“TPM”)⁷ and information gathered at the WestConnect Workshop.⁸ The first draft 2008 WestConnect Planning and Transmission Plan reports were placed on WestConnect’s website and a notice distributed via industry distribution lists to expedite the review process.⁹ Industry comments were collected, compiled and posted on the WestConnect website for other parties review, comment and response during the two week review timeframe. A second draft of the report was then prepared by WestConnect Planning in response to received comments.¹⁰ The final draft of the report was the primary subject of the WestConnect Annual Meeting.

⁶ The WestConnect Workshop agenda and presentation materials are located at

<http://westconnect.com/planning.php>

⁷ Transmission Plan Management System (“TPM”) located at www.westconnectplan.com

⁸ WestConnect Planning Workshop Presentation from November 13, 2008 are located at -

http://www.westconnect.com/documents_results.php?categoryid=17

⁹ The Notice of posting, Comments and Response documentation and the Draft 2008 WestConnect Report available at - http://westconnect.com/planning_reports.php <update later>

¹⁰ Ibid

WESTCONNECT ANNUAL MEETING: PRESENTATION OF FINAL REPORT

The WestConnect Annual Meeting was held in Las Vegas at <<enter>> on January 14, 2009. The primary purpose of this meeting was to present the final draft of the 2008 WestConnect Reports. During the WestConnect Annual meeting, WestConnect Planning made presentations summarizing the Westconnect Reports including comments received during the review period.

Comments on the draft WestConnect reports were received from <Number of parties> entities. The parties commenting on the draft WestConnect Reports are listed in Table 1. A majority of the comments concerned the <complete>. The comments and concerns from the draft report provided valuable feedback and resulted in refinements in these final 2008 WestConnect reports.

Insert Commenting Parties

Table 2 – Draft 2008 Planning Report Commenting Parties

FRAMEWORK OF THE WESTCONNECT PLANNING PROCESS

The WestConnect planning process by definition is inclusive of the subregional planning efforts of SWAT, CCPG, SSPG and any future STPG that forms within the WestConnect planning area. The planning areas for each of the current STPGs are defined in the graphic below.

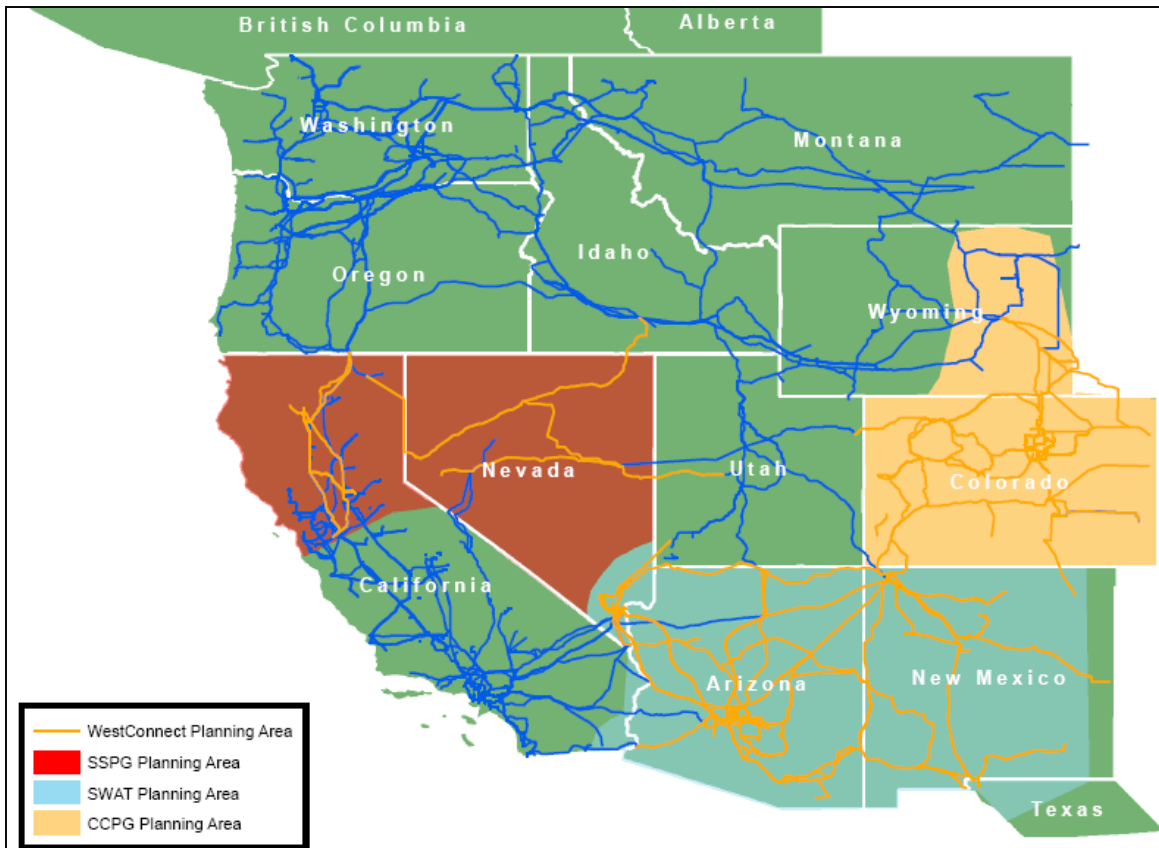


Figure 2 – Coordinated Western Interconnection Planning Processes

The WestConnect planning process has been organized to strategically coordinate these subregional planning efforts and encourage the consistent participation of WestConnect STP Agreement members and any additional interested stakeholders or customers. The process has also been designed to synchronize and coordinate with the Western Electricity Coordinating Council (“WECC”) regional planning process and its Transmission Expansion Planning Policy Committee (“TEPPC”) regional transmission congestion study efforts. Coordination is accomplished through a layered approach utilizing existing planning organizations to perform local, subregional and regional

planning within the Western Interconnection as depicted in the figure below. The WestConnect subregional planning process consists of activities represented each of the single STP circles.

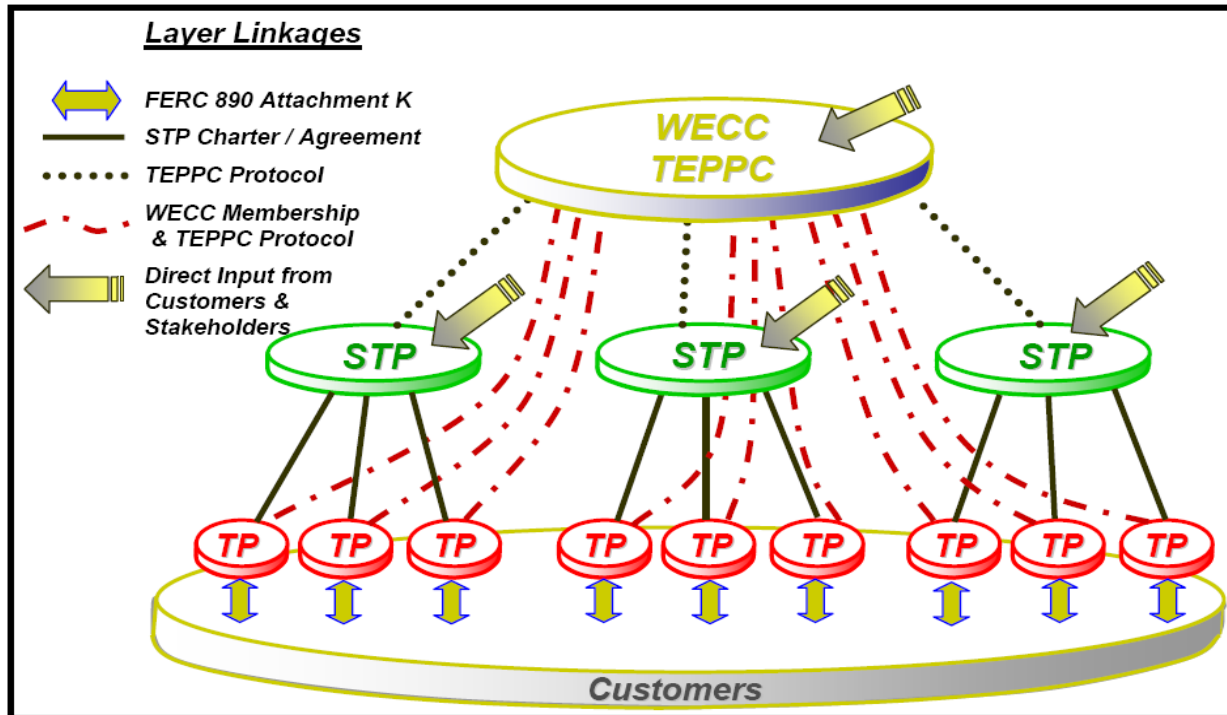


Figure 3 – Coordinated Western Interconnection Planning Processes

The WestConnect planning process utilizes a planning cycle concept depicted in **Figure 3**. It assumes two consecutive planning cycles overlap by a given period of time. The overlap of two study cycles offers stakeholders a window of opportunity to be involved and provide input on a variety of levels. It has also been synchronized with the TEPPC planning process to enable a common window of stakeholder input regarding proposed study efforts for the upcoming study cycle. This stakeholder input period is scheduled to occur annually between the months of November and January. It is buttressed by a planning workshop and an annual planning meeting. The WestConnect workshop occurred on November 14, 2008. The annual planning meeting is scheduled for January 14, 2009.

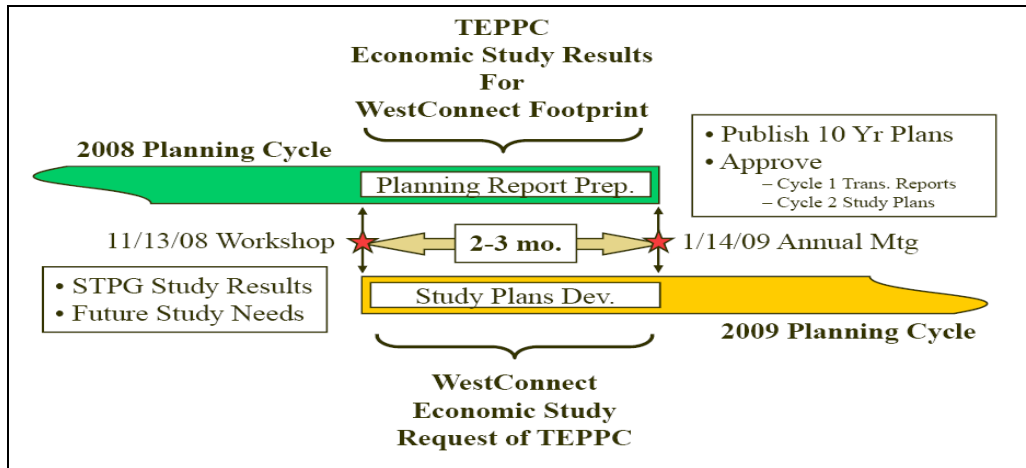


Figure 4 – 2009 WestConnect Planning Cycle

The planning workshop affords all STPGs an opportunity to report on their respective study results and offer suggestions regarding proposed studies for the subsequent study cycle. Merchant developers and Transmission providers also present their ten year transmission plans at the workshop. Stakeholder comments and input on all three workshop topics are welcomed and encouraged. During the workshop stakeholders also have the opportunity to propose additional subregional studies.

The time between the workshop and annual meeting was spent preparing, reviewing and commenting on an annual WestConnect transmission planning report of the precedent planning cycle and a draft of the annual WestConnect transmission plan. A subregional study plan is drafted during the preparation of these documents. All three documents are presented for PMC approval at the annual planning meeting.

In addition to the WestConnect Planning Workshop and the WestConnect Annual Planning Meeting the following activities have occurred in 2008 in support of the WestConnect planning process:

- *Development of the Transmission Plan Management system (“TPM”)*¹¹ – The TPM is an online database that allows utility to update their ten year plans all year long. Stakeholders can access this data as required, providing the most up-to date information possible.

¹¹ WestConnect Transmission Plan Management system (“TPM”) website is located at www.westconnectplan.com

- *WestConnect Newsletter*¹² – An automated email newsletter was developed and implemented during the summer of 2008, by WestConnect to enhance the opportunity for effective communication and notification of industry news, events, and document additions.
- *Monthly Coordinated Planning Conference Calls* – Conference Calls were held on a monthly basis to promote discussion of WestConnect planning items and STP group activities and concerns.
- *WestConnect Website*¹³ *Support* – The website is utilized as a publicly accessible forum for the posting of WestConnect related planning documents, meeting notices, presentations and notes. Transition of SWAT website materials to the WestConnect website was completed in 2008. Similarly, transition of CCPG website material is in progress to assure a single location for access to subregional planning material.
- *WestConnect Google® Mapping Product*¹⁴ – Within the WestConnect website, WestConnect Planning has developed an interactive, online mapping tool graphically displaying the WestConnect ten year transmission plan.
- *Meeting Attendance and Notes Preparation* - KRSA has attended and taken notes for each of the STP meetings since being selected as WestConnect's independent contractor for planning service.
- *WestConnect Total Transfer Capacity/Available Transfer Capacity ("TTC/ATC") Meeting* – at the request of the PMC, Westconnect Planning hosted the 2008 Annual TTC/ATC Meeting. WestConnect Planning is expected to provide this service in forthcoming years.

The 2009 WestConnect planning process will result in the four primary planning products; this Planning Report, 2008 WestConnect Transmission Plan report, Interactive Map of WestConnect Plan and the TPM. Two additional planning products are budgeted for the 2009 timeframe, a planned TTC/ATC table or map and possibly an aggregate interconnection queue information webpage. **Figure 5** below graphically displays the core planning product interaction.

¹² The WestConnect newsletter sign up is located at <http://www.westconnect.com/newsletsub.php>

¹³ The WestConnect website is <http://www.westconnect.com>

¹⁴ WestConnect Google® Mapping product is available online at - http://westconnect.com/planningmap_sm.php

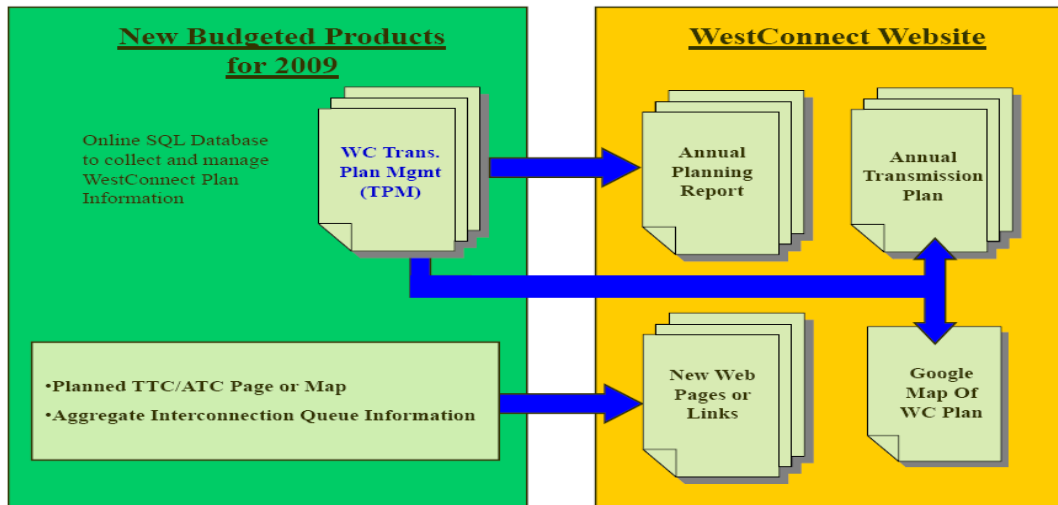


Figure 5 – Coordinated Western Interconnection Planning Processes

PLANNING EFFORTS

Subregional transmission planning processes active within WestConnect’s planning area are organized to promote effective, open and transparent collaborative transmission planning within and among subregions of the WestConnect planning area. Subregional planning activities within WestConnect are currently carried out by CCPG, SWAT and the newly formed subregional transmission planning group for Nevada and Northern California, SSPG. These groups have each begun development of individual Charters defining their roles and responsibilities as formal subregional transmission planning groups (“STPG”).

WestConnect is facilitating the development and application of consistent study principles and coordinated study timelines among its three subregional planning groups. WestConnect is also nurturing relationships among its STPGs such that each is committed to providing human resources resulting in timely completion of the three groups planning activities. At the same time, WestConnect is exploring ways to better synchronize its study plans with WECC, TEPPC and other WECC subregional transmission planning groups. The 2009 synchronized study plan is clearly laid out in **Exhibit 16**.

WESTCONNECT PLANNING STAKEHOLDER PARTICIPATION

At the very core of subregional transmission planning meetings is stakeholder participation. The subregional planning processes active within WestConnect’s planning area are open to all interested parties. Interested stakeholders are encouraged to participate in the various WestConnect subregional planning studies. Stakeholder participation in 2008 has been excellent. A summary of the WestConnect planning area meetings and the number of utilities, governmental agencies and entities, and non-utility firms or individuals that participated in the various subregional planning processes in 2008 is provided as **Exhibit 2**. **Exhibit 3** lists by entity, the participation at the WestConnect meetings during 2008. **Exhibit 4** lists by entity, the participation at the CCPG meetings during 2008. **Exhibit 5** lists by entity, the participation at the SWAT meetings during 2008. **Exhibit 6** lists by entity, the participation at the SWAT meetings during 2008.

Stakeholder participation, including study requests, is greatly encouraged. **Exhibit 12** depicts the WestConnect Subregional Planning Study Timeline, showing the stakeholder study request window that exists annually from November through January. The WestConnect stakeholder study request window is purposely aligned with the TEPPC stakeholder study request window. This allows stakeholders to better ascertain which study forum best suits their needs. The opportunity for stakeholder participation and study requests occur at various forums including coordination meetings with neighboring STPGs, open WestConnect planning meetings and utility FERC 890 stakeholder meetings.

WESTCONNECT MEETINGS

WestConnect Planning hosted four open meetings during the 2008 timeframe. These four WestConnect sponsored meetings were open to all stakeholders and were publically noticed both via email distribution lists and posting to the WestConnect website. In chronological order, below are the four meetings, the generalized topics of discussion and overview of stakeholder participation.

- *WestConnect Annual Meeting* – This meeting was held in Las Vegas, Nevada at Nevada Power Company’s facility on January 17, 2008. The meeting was notice via email distribution lists and posted on the WestConnect website. The main topic for this meeting was the presentation and approval of the 2007 WestConnect Reports. Stakeholders did participate in this meeting.
- *WestConnect Total Transfer Capacity/Available Transfer Capacity (“TTC/ATC”) Meeting* – This meeting was held in Phoenix, Arizona in Arizona Public Service’s facility on May 21, 2008. The meeting was notice via email distribution lists and posted on the WestConnect website. The main topic for this meeting was the presentation of each of the eleven members TTC/ATC. Stakeholders did participate in this meeting.
- *WestConnect Joint Meeting*– This meeting was held in Westminster, Colorado at Tri-States Office’s facility on August 20, 2008. The meeting was notice via email distribution lists and posted on the WestConnect website. The main topic for this meeting was the presentation of transmission planning efforts within the SWAT, CCPG and SSPG planning areas. Stakeholders did participate in this meeting.
- *WestConnect Annual Workshop* – This meeting was held in Tempe, Arizona at Salt River Project’s PERA facility on November 13, 2008. The meeting was notice via email distribution lists and posted on the WestConnect website. The main topic for this meeting was the presentation of WestConnect Planning membership’s ten year plans, merchant transmission projects and STPG planning activities for 2008 thru 2009. Stakeholders did participate in this meeting.

The Annual meeting, Joint meeting and Workshop were generally well attended by stakeholders. Increased stakeholder participation at the annual TTC/ATC meeting is encouraged, specifically for renewable generation developer, as during this meeting is when transmission capacity from market to market is discussed. A grouped break out of the meeting participation is shown in **Exhibits 2 and 3**.

WESTCONNECT AND REGIONAL PLANNING

Regional planning is important to determine the planning obstacles and provide large area coordination that may not present themselves when studying more limited transmission system areas. Some example of potential regional planning issues would be seams transmission issues or mega projects that traverse multiple STPs.

COORDINATION WITH NEIGHBORING SUBREGIONAL PLANNING GROUPS

Coordination with neighboring subregional planning groups (SPG) is essential for dealing effectively with transmission projects that traverse multiple planning group areas and dealing effectively with potential seams issues that could result from lack of coordination. Additional coordination including data collection formats, study case selection and schedule and consistency with work products are some of the items addressed through coordination with neighboring subregional planning groups.

WestConnect and its SPGs have participated in quarterly WECC STP coordination meetings during the 2008 year. WestConnect hosted the inaugural meeting in Phoenix on February 11. The next two meetings were held at ColumbiaGrid's office in Portland on April 10th and July 15, 2008. The fourth meeting was held on September 9th in Salt Lake City and was hosted by TEPPC.

The primary focus of these coordination meetings has been to consider the subregional planning work products of each SPG, discuss potential implications of study scenarios on a neighboring SPG, explore opportunities to adopt comparable reporting formats, maps and planning data and define common power flow base cases needs from WECC. WestConnect offered its coordinated bases cases, WestConnect Guidelines outlining prerequisites for inclusion in our Plan and Planning Report, report formats, project definition forms, website map product and associated database. These products have all been well received and are being adopted and implemented in similar form by other subregional groups.

The purpose of the September 9th STP coordination meeting was expanded to facilitate a teleconference with FERC regarding FERC 890 Attachment K compliance filing requirements. Draft strawman proposals for ColumbiaGrid, Northern Tier Transmission Group, and WestConnect STPs were discussed at length. This also allowed FERC to ask questions and draw comparison among the strawman proposals as they related to the TEPPC protocol.

WECC TRANSMISSION EXPANSION PLANNING POLICY COMMITTEE

The Transmission Expansion Planning Policy Committee ("TEPPC") was formally established as a WECC board committee in April 2006. The committee operates under the TEPPC Charter approved by the Board and its members, representing all categories of stakeholders and with representation from all geographic sub-regions of the Western Interconnection. The Charter notes that WECC has a role in meeting the region's needs for regional economic transmission planning and analyses. It is to accomplish this by providing impartial and reliable data,

public process leadership and analytic tools and services. The charter directs TEPPC to provide these by undertaking three primary functions during the 2007 thru 2008 study timeframe¹⁵:

- *Overseeing Transmission Database Management* – TEPPC is responsible for overseeing the efforts of Technical Advisory Subcommittee (“TAS”) and its work groups to collect, maintain, verify, and disseminate data required to perform useful analyses.
- *Provide Policy and Management of the Planning Process* - TEPPC will address policy issues that arise in the course of designing studies and addressing federal mandates or studies.
- *Guide Analyses and Modeling for Western Interconnection Economic Transmission Expansion Planning* - TEPPC will perform its responsibilities to do analyses that focus on expansion plans with west-wide implications.

The TEPPC Charter states that TEPPC will interface with the WECC membership, state and regional agencies, sub-regional planning groups, consumer groups, and other stakeholders to accomplish the charter functions and responsibilities. The organization chart in **Figure 8** shows the interface between TEPPC and subregional planning groups.

¹⁵ TEPPC Work Plan 2007-2008, available at - <http://www.wecc.biz/modules.php?op=modload&name=Downloads&file=index&req=viewsdownload&sid=172>

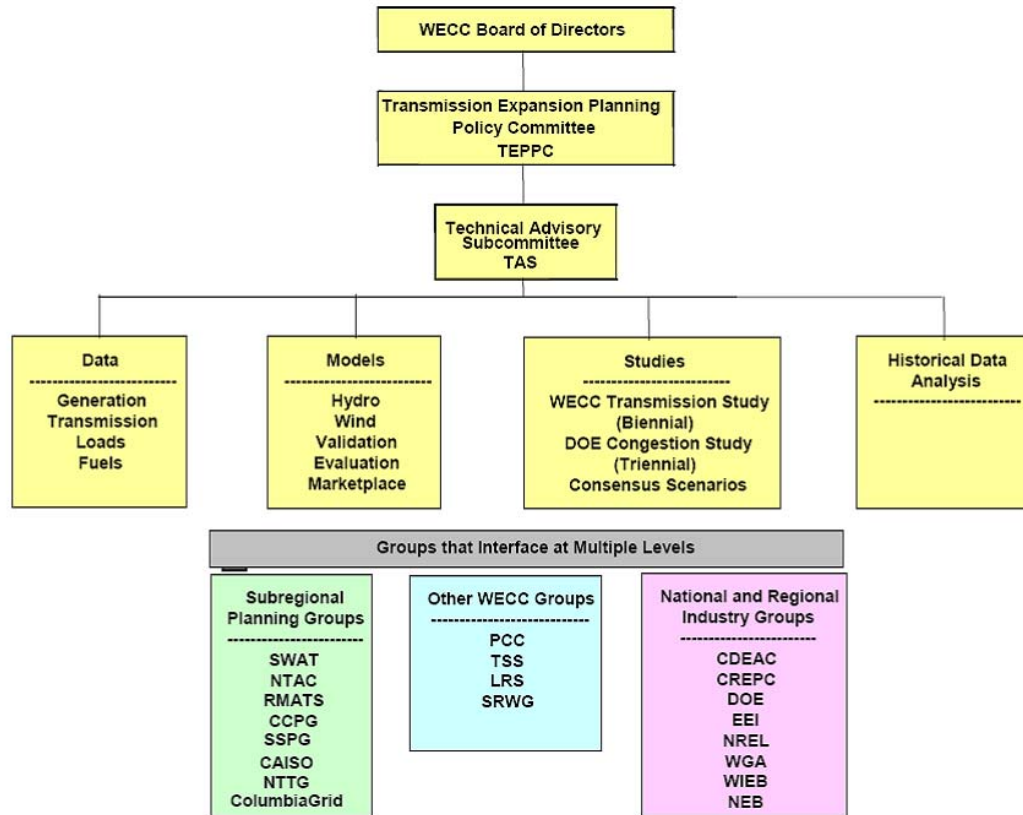


Figure 6 - TEPPC Interface Diagram

WestConnect Participation

WestConnect does not participate as a voting TEPPC member because its subregional planning members already have been established as voting members. Nevertheless, WestConnect is an active participant along with its subregional planning groups at TEPPC and Technical Advisory Subcommittee (TAS) events. We participate in the monthly TEPPC calls for the purpose of reporting the status of subregional planning activities. These calls and the quarterly TEPPC and TAS meetings also focus on the development, coordination, prioritization and reviewing of TEPPC study plan efforts.

The WestConnect annual planning cycle has been designed to synchronize with the TEPPC planning cycle. Both planning forums have a common annual study request window commencing November 1 and concluding January 31 as depicted in **Exhibit 12**. WestConnect requested that TEPPC’s 2008 Study Plan establish the nature and extent of congestion existing or likely to exist in the planning horizon for all DOE NIETC, Congestion Areas of Concern, and Conditional Areas of Congestion within the Western Interconnection.¹⁶ WestConnect’s study request was

¹⁶ <http://www.wecc.biz/documents/library/TEPPC/studies/>

consolidated with other similar requests as portfolio cases 5, 6, 7, and 8 in TEPPC's 2008 Study Plan. These cases have a priority level of 4, 5, 7 and 8. As a result these studies may not be performed in sufficient time to be included in TEPPC's 2008 study plan report in the Spring of 2009. WestConnect will evaluate the outcome of the 2008 TEPPC Study and any study request received during the WestConnect annual study request period as WestConnect considers making a 2009 study request of TEPPC.

WESTCONNECT-WIDE STUDIES

and to assure that the WestConnect Transmission Plan, for the study year, is void of planning criteria violations. These studies are also intended to be long range studies exploring conceptual transmission capability to reliably accommodate diverse resource development scenarios consistent with market conditions studied by the TEPPC study plan.

Annually a WestConnect ten year integrated regional transmission plan is derived from the subregional planning groups' study effort. The WestConnect Transmission Plan coordinates and assembles all ten year transmission plans across WestConnect planning area. The first WestConnect transmission plan and report was published in January of 2008 and is available on the WestConnect website.¹⁷ Beginning in 2008 and 2009 WestConnect commenced performing two types of transmission studies for its members and participating stakeholders. The first study will be an annual adequacy study of the prior year WestConnect transmission Plan. The second study will be a biennial long range study. Both study efforts will yield information of interest to transmission providers and support their study requirements for regulating entities.

WestConnect Adequacy Study

WestConnect annually performs a study to test the adequacy of its most recently published WestConnect Transmission Plan ("Plan") excluding conceptual projects.¹⁸ The adequacy of the Plan is determined by documenting system performance relative to WECC / NERC planning requirements. Traditional N-0, N-1 and N-2 contingency outages are performed for the 5th and 10th year of the current planning period. Any deficiencies in the Plan are noticed to the relevant parties with sufficient lead time for WestConnect subregional transmission planning participants to investigate solutions for incorporation into the subsequent WestConnect Transmission

¹⁷ Final 2007 WestConnect Transmission Plan Report - http://westconnect.com/planning_final_report.php

¹⁸ Conceptual Projects are defined by WestConnect as projects that have not been submitted as part of a regulatory filing, undergone permitting nor have a formal commitment to participate nor construct the project.

Plan. Potential corridor outages involving planned facilities are performed in the 10th year of the current planning period with the intent of ascertaining to what degree of system reliability risk is associated with placing proposed projects in common corridors with other facilities. It is not believed that studying such corridor outages in the 5th year of the study period would offer sufficient lead time to pursue alternates routes. A general study plan of the WestConnect Adequacy Study has been provided as **Exhibit 9** of this report.

In 2008 the first annual WestConnect Adequacy study was performed. The 2013 Adequacy draft results were first discussed via conference call on November 6, 2008. This provided a forum for subregional discussion of the results with the primary intention of validating the final 2013 Adequacy results summary presentation¹⁹, presented to stakeholders at the WestConnect Workshop.

The draft 2008 WestConnect Adequacy report²⁰ containing the 2013 and 2018 results was released for a two week public review and comment period on <date>. The comment and concerns were complied²¹ addressed and integrated into the final 2008 WestConnect Adequacy report²² released on <date>.

The 2013 study work results identified <complete>

The 2018 study work results identified <complete>

The 2009 Westconnect Adequacy study plan is very similar to the 2008 study plan. There is currently a proposal for WestConnect may begin studying N-1-1 outages for the Westconnect planning area; although it may require the compiling and use of an additional seasonal study case. Additionally the supporting structure for the base case and outage list compiling will be re-managed to expedite the creation and coherence of coordination. The coordination will remove the direct interface with utilities during this process and lean more heavily upon the STPGs to provide coordinated base cases and outage lists.

WestConnect Biennial Long Range Study

WestConnect will biennially perform a technical study to explore conceptual long range transmission needs within the WestConnect planning area. The goal of the study is to develop and refine conceptual long range transmission options within the WestConnect planning area for the 10th year study time period and beyond. This

¹⁹ WestConnect Adequacy Results Presentation, WestConnect Annual Workshop, November 13, 2008 - http://www.westconnect.com/filestorage/WC_2013_Study_v3.ppt

²⁰ <draft Adequacy Report link>

²¹ <review and comment complied link>

²² <final Adequacy Report link>

study will focus solely on the WestConnect planning area's system performance for load forecasts and generation scenarios representative of this study period. Therefore, the study will be limited to power flow studies that investigate the system's performance for single contingency outages.

The scope of the WestConnect long range study will vary over time in order to address contemporary issues facing the industry. The conceptual projects studied in response to those contemporary issues will serve as an incubator for alternative transmission projects that may eventually become sponsored and added to a future WestConnect Transmission Plan. More importantly, the long range study process will broaden and extend the vision of future transmission line corridor needs in the WestConnect planning area. The initial study has a two-fold objective, first to provide traditional transmission reliability oriented studies in response to the TEPPC economic transmission study results, secondly to study WestConnect-wide integration of renewable energy projects. A general study plan of the WestConnect Biennial Long Range Study has been provided as **Exhibit 8** of this report.

The 2008 study activity has revolved primarily around discussion regarding coordination and study approaches. Of specific discussion was the determination of renewable energy zones for study and methodology / study approach for the study activity. Currently, Westconnect proposed a study plan and approach similar to the methodology used by CCPG in their present Long Range study effort.

The first Biennial Long Range study is planned to begin at the completion of the 2009 Adequacy Study as detailed in **Exhibit 16** during the third quarter 2009. The study work for the first Biennial Long Range study will progress thru third and fourth quarters of 2009 with the final report is expected near the fourth quarter of 2010.

NREL Western Wind and Solar Integration Study

The National Renewable Energy Laboratory ("NREL") Western Wind and Solar Integration Study ("WWSIS") was kicked off in a stakeholder meeting at NREL on May 23, 2007 to examine the impact of wind and solar power on utility operations in the WestConnect footprint outside of California (The California Energy Commission recently completed their own renewable integration study). The study will examine how geographical diversity of resources, hydro, forecasting, and balancing area cooperation can help mitigate the impact of the variability and uncertainty of wind and solar power.

The main tasks of the study include utility/wind/solar data collection; preliminary analysis; scenario development; production cost modeling; and reporting. Three historical years will be modeled (2004-6) with varying penetrations of wind and solar and various resource scenarios and to meet multi-state interests in understanding the operating and cost impacts due to the variability and uncertainty of wind and solar power on the grid. The WestConnect Virtual Control Area working group had originally planned a study to investigate cost

benefits from sharing regulation and reserves. It has been decided that this WWSIS could include an investigation of the cost benefits from sharing of regulation and load following, leaving the working group to study reserve sharing. The WWSIS supports the Western Governor's Clean and Diversified Energy Initiative²³ and the President's Advanced Energy Initiative²⁴. This study will include the WestConnect planning area and will also include the WestConnect Virtual Control Area Study. Illustrated in **Exhibit 17** is the WWSIS study footprint.²⁵

The 2008 WWSIS activities primarily focused around the preliminary analysis including extensive statistical analysis for wind and/or solar sites and potential transmission. During a data review session, an abnormality was noticed due to corrupt wind input data. The data and results are being re-run and will be integrated into the current work product. The revised will dataset is available at <http://www.nrel.gov/wind/westernwind/>.

In 2009 the NREL WWSIS plans to complete the various study related tasks as described below:

- GE will begin work on the Mega Projects and Local Priority scenarios in January of 2009. NREL and GE will further refine the other two scenarios and will bring those to a meeting of the Technical Review Committee for review.
- NREL and GE will also consider whether to adjust the carbon price assumption of \$5/ton.
- GE will also consider whether the assumed capacity value of \$100/kW is reducing the potential impact of geographic diversity of potential wind projects.
- NREL solar staff will work on finding sub-hourly solar data, particularly for PV.²⁶

A stakeholder meeting to present the preliminary results is currently scheduled for the second quarter of 2009. The study effort is projected for completion in third quarter of 2009 WWSIS. Updates and appropriate support information will be posted on the WestConnect website.

WESTCONNECT SUBREGIONAL PLANNING

Subregional transmission planning looks at multiple transmission systems with multiple transmission owners and stakeholders. Each of the subsequent sections summarize and highlight the key 2008 STPG planning activities,

²³ Western Governor's Clean and Diversified Energy Initiative requires 30 giga-watts ("GW") of clean energy by 2015

²⁴ President's Advanced Energy Initiative²⁴ which allows for wind to supply up to 20% of US electricity consumption

²⁵ NREL Western Wind and Solar Integration Study SWAT Meeting Oct 30-Nov 1, 2007

²⁶ Summary of NREL August 2008 Stakeholder Update -

http://westconnect.com/filestorage/Summary_of_Aug08_stakeholder%20mtg.pdf

status and specific proposed 2009 study plans which examine the system as a greater whole than utility specific study work. This annual WestConnect planning report documents subregional study results and incorporates a proposed study plan for the next study cycle.

Subregional planning studies will focus of specific issues and concerns raised within each respective STPG or planning subcommittee in 2008. WestConnect and its associated STPGs derive study plans from four sources:

- stakeholder requests,
- active STPG study proposals,
- reliability studies needed to support TEPPC, and
- WestConnect Planning Management Committee study proposals.

Study requests and study plan development commences with the WestConnect Planning Workshop and concludes with the Annual Planning Meeting (November – January). The subregional studies will be performed by the respective STPGs. These studies will establish the need for the ten year transmission plans that will be submitted for the 2008 WestConnect Transmission Plan. These studies will also consider national, regional and state public policy issues and regulatory requirements. Therefore these study forums will serve as the fundamental stakeholder opportunity for participation in WestConnect’s subregional planning processes. The study results and study reports that emerge from these efforts will shape the contents of the next annual WestConnect Planning Report.

COLORADO COORDINATED PLANNING GROUP (CCPG)

CCPG is comprised of transmission regulators/governmental entities, transmission users, transmission owners, transmission operators and environmental entities. The goal of CCPG is to promote subregional planning in the Rocky Mountain Region including reliability assessments and developing joint business opportunities thru coordinated planning under the single-system planning methodology. The CCPG footprint incorporates all of Colorado and portions of Wyoming and Kansas. A more detailed description of CCPG is available in **Exhibit 10** and planning area is illustrated in **Figure 2**. CCPG holds three open meetings a year and is actively involved in WestConnect transmission planning events. CCPG meeting notices, notes, presentations and reports are posted on the WestConnect website.²⁷

During 2008, CCPG remained actively involved the transmission planning process holding subregional transmission planning meetings and attending WestConnect transmission planning events as well as provides

²⁷ CCPG website on WestConnect - http://westconnect.com/planning_ccpg.php

presentations and updates. CCPG provided updates on the following activities during the 2008; the Long Range Planning, NERC Compliance study work, Senate Bill 100 Planning, Sub-subregional Studies, WECC Data Coordination, Regional Project Participation and the initial drafting of a CCPG Charter.

CCPG actively coordinated and participated in the following activities during 2008 as described below:

- *Sub-subregional Study Work* – CCPG continues to support study work for projects and areas within the CCPG planning area.
- *WECC Data Coordination* – CCPG is the WECC area coordinator responsible for ensuring accurate modeling of loads and resources for the planning area in WECC base cases.
- *Regional Project Participation* – CCPG remains active in regional project development and study work including TransWest Express, High Plains Express and other regional projects.
- *CCPG Charter Drafting* – CCPG, working with SWAT, drafted early forms of a Charter describing roles and responsibilities of CCPG as a STPG.

CCPG does not directly perform any of the studies within the CCPG planning area, they study work is performed by a study group or entity assigned to the task under CCPG’s direction and oversight. CCPG provides the opportunity to provide updates and feedback thru participation at the CCPG meetings. The 2009 study plan for the CCPG therefore is the aggregate of the study groups’ activities and any additional tasks performed best at the CCPG level. The 2009 CCPG study plan will include finalizing the CCPG STPG Charter and continuing area coordination duties and subregional transmission studies.

Details for the Long Range Planning Study, NERC Compliance study work and Senate Bill 100 are discussed in detail in the following sections.

Colorado Long Range Transmission Planning Study

CCPG Long Range Transmission Planning is a study led by Tri-State Generation and Transmission (“TSG&T”) with the purpose of developing ten-year transmission plans, considering renewable portfolio standards (“RPS”) and renewable penetration of up to thirty percent and re-evaluating the Eastern Plains Transmission Project. The most recent prior to 2008 was the CCPG Long Range Transmission Planning Effort that occurred in 2005.²⁸

²⁸ The Final 2005 CCPG Long Range Transmission Planning Report is available thru the Tri-State Generation and Transmission OASIS website at <http://www.oatioasis.com/tsgt/index.html> or directly thru http://www.oatioasis.com/TSGT/TSGTdocs/CLRTP_FINAL_REPORT_42704.pdf

During 2008, the Long Range Transmission Planning study held weekly meetings, including multiple open and transparent stakeholder meetings to discuss and agree upon loads and resources, resource plans and renewable portfolio standards, generation types and mixes and injection location scenarios. Stakeholder involvement at these meetings have included investor owned Utilities, Federal Power, Municipals, Cooperatives, Colorado Governor Energy Office, CPUC, Wind, Solar, and Environmental Industry Members and Advocacy Groups, and individual interested participants. The study results were presented to stakeholders on June 10, 2008.²⁹

The CCPG Long Range Transmission Planning analyzed the 2018 transmission system model to develop four assessments of specific study scenarios. The assessments included load flow, transient stability and voltage stability analyses. The results of these analyses were used to develop conceptual transmission plans required to accommodate the study scenario. The CCPG Long Range Transmission Planning study along with the preliminary transmission plans will be completed in the fourth quarter of 2008.

Assuming the CCPG Long Range Transmission Planning study work and report are completed prior to the end of 2008 this study group will not have any activity again until 2010-2011 timeframe.

NERC Compliance Study

The purpose of this study was to help CCPG participants meet selected WECC/NERC compliance standards via the coordinated planning process study, study the near term (five year timeframe) and far term (ten term timeframe) transmission systems and study renewable integration to meet the Renewable Portfolio Standards ("RPS") including up to 30% renewable resource penetration. Included in this report are the transmission system performance assessment studies for standards TPL-001, TPL-002, TPL-003, and TPL-004. Additionally, this study group performs the Reactive Margin analysis required to meet WECC requirements.

During the 2008 study year, the CCPG planning group with Basin Electric Power Company as the project lead conducted a study entitled: *Colorado Coordinated Planning Group (CCPG) NERC/WECC Compliance Report and Reactive Margin Analysis*. A copy of the final report is posted on the WestConnect website and listed among this report's references documented in **Exhibit 7**. <<need to post report after cleared>>

The CCPG NERC Compliance study is an on-going yearly study of the CCPG planning area transmission system. In 2009, a similar reporting effort will occur for the corresponding near term (five year timeframe) and far term (ten term timeframe) transmission systems.

²⁹ Colorado Long Range Transmission Planning Group 2008 Study Progress Presentation, June 10, 2008 located at http://www.oatiosis.com/TSGT/TSGTdocs/CLRTPG_6-10-08a.pdf

Senate Bill 100

The Colorado Public Utilities Commission (“CPUC”) hosted an informational meeting on July 24, 2007, to explore the connection between transmission development and implementation of state energy policies being developed by the state of Colorado. Senate Bill 100 was among the new legislation considered.³⁰ Colorado Senate Bill 100³¹ requires rate regulated electric utilities to do the following on or before October 31 of each odd number year:

- Designate “Energy Resource Zones,”
- Develop plans for transmission necessary to deliver the electric power consistent with the timing of development of energy resources in or near each zone,
- Consider how transmission can be provided to encourage local ownership of renewable energy facilities, and
- Submit proposed plans, designations, and applications for certificates of public convenience and necessity to the CPUC for simultaneous review.

The Clean Energy Development Authority³² (“CEDA”) was charged to develop a three year plan to accomplish the mandates of Colorado Senate Bill 100, and to work with the Colorado Public Utilities Commission and CCPG.

During 2008 open meeting were held approximately every two weeks and noticed thru Xcel Energy Senate Bill 100 website.³³ The Senate Bill 100 Meetings were open to stakeholder participation and involvement.³⁴ The 2008 Senate Bill Activities have included participating in transmission planning groups, issuing study plans based upon results and preparing Certificate of Public Convenience and Necessity (“CPCN”) studies.

The Senate Bill 100 study plan for 2009 will include completion of the Senate Bill 100 mandates. These activities will include preparing and finalizing any Certificate of Public Convenience and Necessity (“CPCN”) studies not completed in 2008 by January 2009, filing the CPCN applications in first quarter of 2009, and filing the

³⁰ Colorado Senate Bill SB 07-100, codified at C.R.S. § 40-2-126.

³¹ WestConnect Planning Report page 36

³² Clean Energy Development Authority - <http://www.colorado.gov/energy/utilities/clean-energy-development-authority.asp>

³³ Xcel Energy Senate Bill 100 webpage - http://www.rmao.com/wtpp/SB100_2009.html

³⁴ A full listing of the Senate Bill 100 participation at <http://www.rmao.com/wtpp/Sb100/Stakeholders%20E-Mail%20List%20Revised%204-08-2008.pdf>

transmission system plans at the beginning of the fourth quarter of 2009. The final information report³⁵ was posted on the Senate Bill 100 website on November 28, 2008 and includes the designation of five renewable energy zones and the transmission plans to deliver the resources to load pockets. These transmission plans are documented the companion *2008 WestConnect Transmission Plan Appendix* for the Public Service Company of Colorado.

SIERRA SUBREGIONAL PLANNING GROUP (SSPG)

SSPGPG is a newly formed subregional planning group comprised of transmission users, owners and operators incorporating a large portion of Nevada and Northern California. A more detailed description of SSPG is available in **Exhibit 10**. The SSPG planning area is illustrated in **Figure 2**. SSPG has not yet established a yearly meeting schedule, but is actively involved in WestConnect events. SSPG meeting notices, notes, presentations and reports are posted on the WestConnect website.³⁶

On September 4, 2008 at Sacramento Municipal Utility District (“SMUD”) facility, SSPG held the inaugural stakeholder meeting, officially creating the third STPG within the WestConnect planning area. During 2008, SSPG held two open stakeholder meetings during 2008 a good stakeholder involvement and offered a number of informative transmission planning related presentations. During 2009 SSPG will work with stakeholders to define study needs and establish working group to accomplish the defined study needs within the planning area.

SOUTHWESTERN AREA TRANSMISSION (SWAT)

SWAT is comprised of transmission regulators/governmental entities, transmission users, transmission owners, transmission operators and environmental entities. The goal of SWAT is to promote subregional planning in the Desert Southwest. A more detailed description of SWAT is available in **Exhibit 10**. The SWAT regional planning group includes seven main subcommittees which are overseen by the SWAT Oversight Committee. The subcommittees are illustrated in the figure below. Separate web pages are provided for each of this subcommittees and the SWAT Oversight Committee on the WestConnect website. SWAT holds quarterly open meetings and is actively involved in WestConnect events. SWAT subcommittees’ meeting notices, notes,

³⁵ *Senate Bill 100 Designation of Energy Resource Zones and Transmission Planning Informational Report*, November 28, 2008 located at <http://www.rmao.com/wtpp/Sb100/SB-100%20Informational%20Report%20Final.pdf>

³⁶ SWAT website on WestConnect - http://westconnect.com/planning_sierra.php

presentations and reports are posted on their respective web pages. The SWAT planning area is illustrated in **Figure 2.**

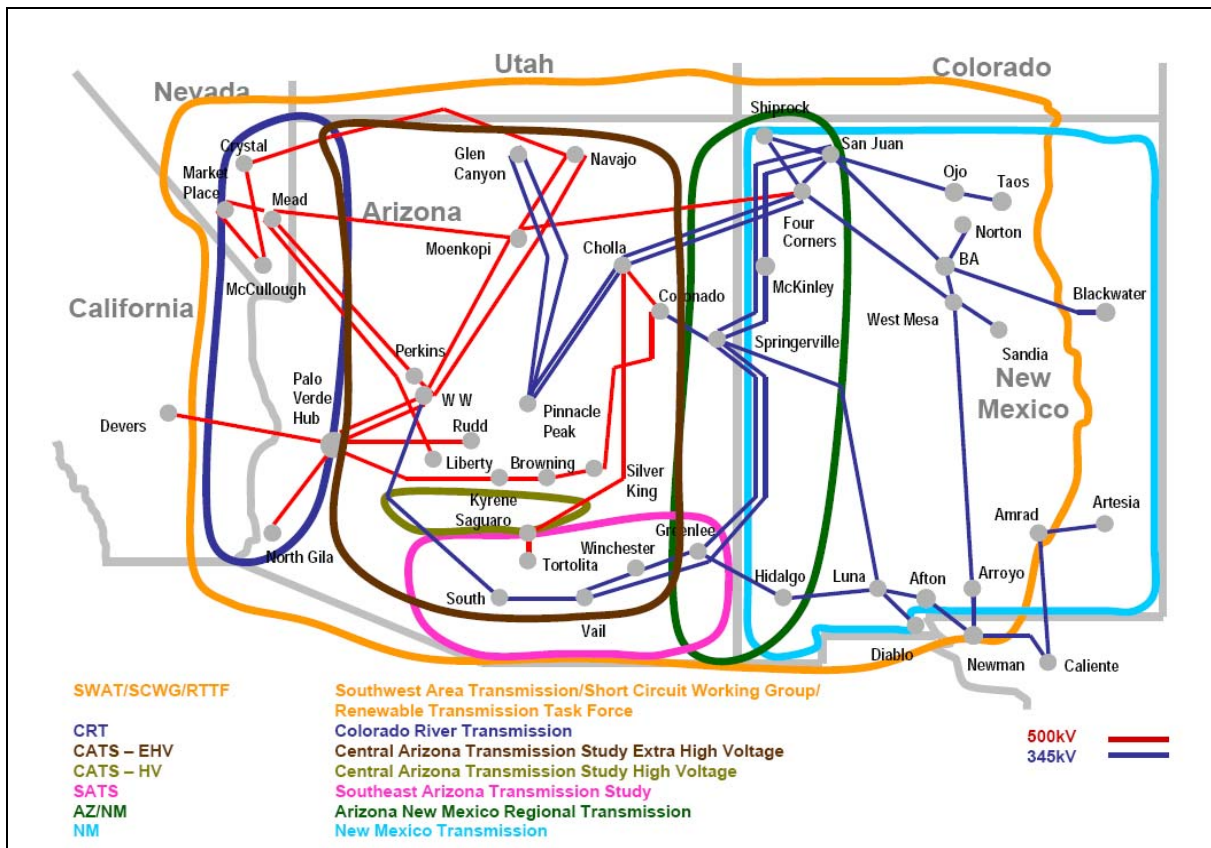


Figure 7 – SWAT Subcommittee Study Areas

During 2008 SWAT remained actively involved the transmission planning process. SWAT activities during the 2008 year included monitoring of the subcommittee study efforts, creation and monitoring of the Common Corridor Structure Separation Task Force, review and comment on the drafting Arizona Biennial Transmission Assessment and the initial drafting of the SWAT Charter.

SWAT does not directly perform any of the studies within the SWAT planning area, they study work is performed by a study group or entity assigned to the task under SWAT’s direction and oversight. SWAT provides the opportunity to provide updates and feedback thru participation in the SWAT meetings. The 2009 study plan for the SWAT therefore is the aggregate of the study groups’ activities, tasks forces and specific tasks best performed at the SWAT level. The 2009 SWAT study plan will include finalizing the SWAT STPG Charter, continuing subcommittee coordination duties and providing comment on issues affecting the SWAT planning area.

Arizona/New Mexico Subcommittee (AZ/NM)

The Arizona/ New Mexico (“AZ/NM”) subcommittee is a SWAT study group responsible for transmission planning that pass through or the near the Arizona-New Mexico border as displayed graphically in dark green on **Figure 6**. This subcommittee is study area includes the Four Corners area and Springerville generation and transmission. A more detailed description of the AZ/NM subcommittee is available in **Exhibit 11**.

During 2008, AZ/NM held multiple open stakeholder meetings that were noticed via email and the WestConnect website. Additionally, the materials for these meeting were posted for review following the meetings, also on the WestConnect website. The Arizona/New Mexico Subcommittee has been involved with primarily with monitoring and reviewing the development of various projects within its study area during 2008. Listed in the table below are the generation and transmission projects that the AZ/NM subcommittee has provided peer review and comment on:

Desert Rock Generation	Springerville #4 Generation
Navajo Transmission Project	SunZia Southwest Transmission
Navajo South Transmission	High Plains Express

Table 3 –AZ/NM Subcommittee Peer Review Projects

During 2009, the AZ/NM subcommittee will continue to provide peer review and comment on the projects listed on table 5 above and coordinate and participate in stakeholder meetings.

Central Arizona EHV Subcommittee (CATS-EHV)

The Central Arizona Transmission Study –High Voltage (“CATS-EHV”) subcommittee is a SWAT study group responsible for 345kV -500 kV transmission planning for a majority of central Arizona, with the exception of the Palo Verde hub as displayed graphically in brown on **Figure 6**. A more detailed description of the CATS-EHV subcommittee is available in **Exhibit 11**.

During 2008, CATS-EHV held open stakeholder meetings that were noticed via email and the WestConnect website. Additionally, the materials for these meeting were posted for review following the meetings, also on the WestConnect website.

A new CATS-EHV subcommittee chairman was elected during the subcommittee meeting on April 22, 2008. The new chairman focused the CATS-EHV subregional planning group concentrated its efforts on coordinating with WestConnect in the base case building process of the 2013 and 2018 coordinated study cases. The combination of these activities resulted in CATS-EHV delaying the 2008 study work, including a majority of injection study work,

until the fourth quarter of 2008 or potentially 2009. CATS-EHV will work diligently to complete phase I and II of the injection study work scheduled for earlier in 2008.³⁷

CATS-EHV during the 2009 will work to complete the following two objectives; pick up where the 2008 CATS-EHV study work to determine the maximum injection levels at defined injection points left off and fulfillment of the 2010 Arizona Corporation Commission (“ACC”) Biennial Transmission Assessment (“BTA”) requirements. The ACC BTA requirements include a tenth year snapshot study, reliability must run study work (“RMR”) and common corridor extreme contingency studies.

The CATS EHV injection study for the 2008 study year will investigate the ability of the 2018 planned Arizona transmission system to accommodate the proposed individual and aggregate injections of the three Mega Projects. The Study will be conducted in four phases. Phase I will benchmark the 2018 planned transmission system by determining the maximum injections levels at the injection points identified by the Mega Projects. Phase II will determine the transmission requirements to accommodate the injection levels identified by Mega Projects to local Arizona Markets. Phase III will determine the transmission requirements to accommodate the injection levels of the Mega Projects to Markets outside of Arizona. Phase IV will compare the transmission requirements identified in Phase II, for all injection points and the transmission requirements in Phase III, for all injections points and study various commonalities and symmetries for overall performance in achieving multiple injection and delivery requirements.

The BTA required study work enables the Commission to conduct an adequacy analysis of the state’s existing and Ten Year planned transmission system. These studies are a collaborative and joint effort to consider the utilities’ ten year plans in a regional environment. Three joint power flow cases, representing operational year and the tenth year of the Ten Year Plans will be developed and coordinated through the CATS-EHV study group and used to establish the adequacy of the Ten Year plans.

Central Arizona HV Subcommittee (CATS-HV)

The Central Arizona Transmission Study –High Voltage (CATS-HV) subcommittee is SWAT study group responsible for the 115 kV - 230 kV transmission systems in central Arizona, specifically Pinal County, as displayed

³⁷ Phase I will benchmark the 2018 planned transmission system by determining the maximum injections levels at the injection points identified by the Mega Projects. Phase II will determine the transmission requirements to accommodate the injection levels identified by Mega Projects to local Arizona Markets.

graphically in light green on **Figure 6**. A more detailed description of the CATS-HV subcommittee is available in **Exhibit 15**.

During 2008, CATS-HV held open stakeholder meetings that were noticed via email and the WestConnect website. Additionally, the materials for these meeting were posted for review following the meetings, also on the WestConnect website. The CATS-HV study plan for 2008 called for a internal generation scenario tenth year analysis of the CATS-HV planning area. The 2008 CATS-HV Study Plan consisted of the following three tasks:

- Conduct an assessment of the 2018 transmission plans for the CATS-HV detailed system model of the planning area using a WestConnect coordinated base case, as the starting point;
- Study resource scenarios based on the probable energy zones, in 500 mega-watt (“MW”) increments;
- Document all finding and conclusions in the WestConnect Annual Report.

The delays in the Western Electric Coordinating Council (“WECC”) 2018 heavy summer (“HS”) base case cascaded delays with the WestConnect 2018 base cases and have resulted in CATS-HV being behind schedule. Despite the delay, CATS-HV will finalize the 2008 CATS-HV Study Report concurrent with the WestConnect Annual Plan in first quarter 2009.

During 2009, the study activities for CATS-HV will include: <<waiting for response from Joe H>>

Colorado River Transmission Subcommittee (CRT)

The Colorado River Transmission subcommittee (“CRT”) is SWAT study group responsible for the transmission systems along the Colorado River including the transmission between Arizona and California as displayed graphically in dark blue on **Figure 6**. This planning area was defined a Department of Energy National Interest Electric Transmission Corridor (“DOE NIETC”) in 2007. A more detailed description of the CRT subcommittee is available in **Exhibit 11**.

During 2008, CRT held multiple open stakeholder meetings that were noticed via email and the WestConnect website. Additionally, the materials for these meeting were posted for review following the meetings, also on the WestConnect website.

The Colorado River Transmission Subcommittee for the 2008 Study year has been involved with monitoring a variety of projects within the study area. Listed below are projects CRT was monitoring or actively involved with monitoring during 2008:

- Path 49 upgrades
- EOR 9300

- Devers/Palo Verde No. 2
- Palo Verde Hub/North Gila No. 2
- Topock/Mead Upgrades
- IID Internal Upgrades
- Unisource - Mohave County Upgrades

During 2008 the CRT remained actively involved in the Palo Verde to Devers 2 transmission project. The CRT subcommittee developed a study plan and group to explore new Arizona interconnections with the proposed PV-D2 project, called the Harcuvar Transmission Project (“HTP”)³⁸. The CRT developed a number of potential interconnection options, including transmission access for renewable generation projects to the California market.

The study activity for CRT during the 2009 year will focus primarily on three items: monitoring short term Path 49 upgrades / East of River (EOR”) 9300 project, PV-D2 with HTP Option and the Arizona BTA requirements upon CRT which expected to be Ordered as a result of the conclusions and recommendation.³⁹

New Mexico Study Group

The New Mexico subcommittee is SWAT study group responsible for the transmission systems for all of New Mexico as displayed graphically in light blue on **Figure 6**. The New Mexico and AZ/NM subcommittees planning areas overlap and work in a coordination fashion. A more detailed description of the NM subcommittee is available in **Exhibit 11**.

During 2008, the New Mexico subcommittee held multiple open stakeholder meetings that were noticed via email and the WestConnect website. Additionally, the materials for these meeting were posted for review following the meetings, also on the WestConnect website. During the 2008 study year, the New Mexico subregional planning group conducted a study titled *High Plans Express Transmission Project Integration with New Mexico Wind Collector System Concepts* for which a draft report was released for stakeholder review and comment in October 2008 to the WestConnect website.⁴⁰ In this report, the New Mexico subgroup studied the potential expansion of the transmission system to accommodate the numerous wind interconnection requests in central and east central New Mexico. The Study Group developed and studied the Conceptual Wind Collector System

³⁸ The Harcuvar Transmission Project (“HTP”) is discussed in detail in *Interstate, Market and Merchant Transmission and Generation* Section of the 2008 WestConnect Plan Report

³⁹ The 2008 Arizona BTA is available at <http://www.cc.state.az.us/divisions/utilities/electric/biennial.asp>

⁴⁰ The current revision of the draft report is located at http://www.westconnect.com/filestorage/HPX_NMCOLLECTOR_INTGRN_V1.pdf

using a multiple staging approach as well as the proposed High-Plains Express Project (“HPX”).⁴¹ Presentations of the staging options and the draft report have been presented and reviewed by stakeholders at several open SWAT and New Mexico subcommittee meetings.

The New Mexico subcommittee believes the remaining analysis of renewable transmission and integration will be performed by the SWAT Renewable Transmission Task Force in 2009. The New Mexico subcommittee is therefore accepting submissions, suggestions and requests for 2009 study work.

Southeastern Arizona Transmission Study (SATS) Group

The Southeastern Arizona Transmission Study (“SATS”) is SWAT study group responsible for the transmission systems in southeastern Arizona, specifically the counties of Pima, Santa Cruz, Graham and Cochise, as displayed graphically in pink on **Figure 6**. A more detailed description of the SATS subcommittee is available in **Exhibit 11**.

During 2008, SATS held multiple open stakeholder meetings that were noticed via email and the WestConnect website. Additionally, the materials for these meeting were posted for review following the meetings, also on the WestConnect website. The primary objective of SATS during 2008 was development of a 20 year transmission plan covering the SATS study area; including a final report outlining the planned transmission system. An agreement to conduct the study as a “single system” is a key principle for the study. A work plan to achieve this objective was jointly developed by the entire group of participants. The work plan includes the study scope and schedule, plus guidance on the study process, methodology, planning assumptions and criteria.

The first draft SATS was released to WestConnect for review and comment on December 12, 2007. During 2008, the draft report has undergone significant review, comment and revision. The final SATS report, released on December 5, 2008 is publicly available.⁴²

The SATS study group is expected to remain extremely active during 2009. The SATS subcommittee proposes to study, during 2009, the following generalized topics⁴³: continue to participate in stakeholder meetings at SWAT

⁴¹ The High-Plains Express Project (“HPX”) is discussed in detail in the *Interstate, Market and Merchant Transmission and Generation* Section of the 2008 WestConnect Plan Report

⁴² SATS Final Report is available at

http://www.westconnect.com/filestorage/SATS%20ReportFinal%20Report_120508.pdf

⁴³ A full listing of the proposed Study Plan activities can be found on slides 26-27 of the presentation given at the WestConnect Planning Workshop on November 13, 2008 -

http://www.westconnect.com/filestorage/SATS%20SWAT%20Update_111208.ppt

and WestConnect, investigate alternative to proposed projects, comply with AZ BTA recommendations and required study work, conduct scenario sensitivities and economic analyzes and to finalize cost estimates.

Additionally in 2009 SATS plans to study considering the impact of large generation “flow through” on the SATS planning area transmission. This study is especially important since a number of large transmission and generation projects are proposed that will affect this area. The figure below illustrates the concept for the proposed “flow through” study work.

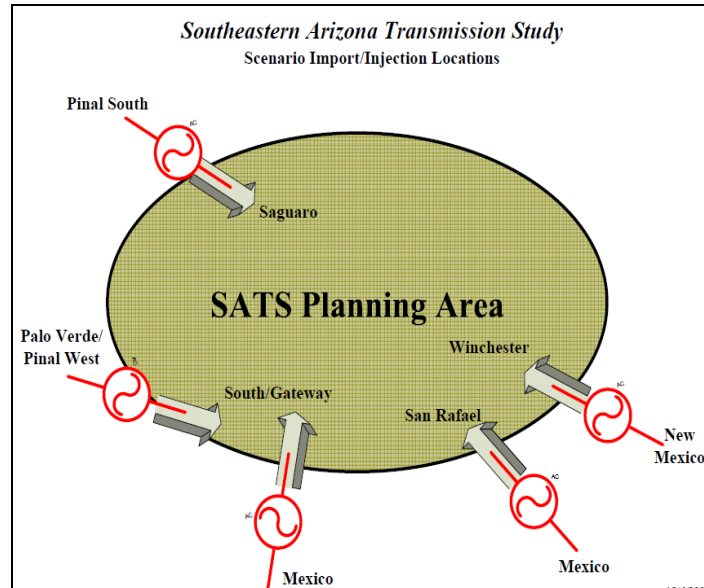


Figure 8 – SATS Subcommittee “Flow Through” Study

Short-Circuit Working Group (SCWG)

The Short Circuit Working Group (“SCWG”) is SWAT study group responsible for the developing and maintaining the short circuit representation of the transmission system in SWAT planning area, as displayed graphically in orange on **Figure 6**. A more detailed description of the SCWG subcommittee is available in **Exhibit 11**.

During 2008, SCWG implemented a new website on WestConnect⁴⁴ for meeting notices and material to be publicly posted. Additionally, SATS held multiple open stakeholder meetings that were noticed via email and the website. The primary SCWG’s goal for the 2008 study year was to work toward developing a common database to

⁴⁴ Short Circuit Working Group (“SCWG”) website - http://www.westconnect.com/planning_swat_scwg.php

promote regional short circuit studies within the SWAT planning area. Specifically the SCWG intended to complete the final case by the end of 2008. During 2008, SCWG worked diligently to produce the final case including a multi-day workshop in June sponsored by WestConnect. The result of the June workshop was a draft, short circuit case that was deemed incomplete pending the addition of California utilities information to improve the results.⁴⁵ The SCWG determined annual updates to relevant seams buses through equivalence would be adequate to address the concerns regarding the case as well as expanding the SCWG modeling area to include Southern California.

The 2009 study plan for the SCWG will continue to focus on development, improvement and maintenance of the master SCWG model case. Specifically during 2009 the SCWG will perform the following:

- 1st Quarter of 2009: Identify buses that will represent seam with California and request equivalent representation for these buses, complete with transfer impedances.
- 2nd Quarter of 2009: Continue update process and begin error checking for end of the year submission. Incorporate California equivalent information into Master case
- 3rd Quarter of 2009: Error-checking of Master case for SWAT submission
- 4th Quarter of 2009: Make any final adjustments to the Master Case; Prepare year-end summary for SWAT final meeting; Transition Chairman position to IID
- Throughout the year, we must continue to develop easy-to-use procedures for all current and future participants of the SWAT SCWG

SWAT Renewable Transmission Task Force (“RTTF”)

The Renewable Transmission Task Force (“RTTF”) is a SWAT task force formed during the 2007 study year, under the Arizona/New Mexico subcommittee to address a renewable energy order which resulted from the Arizona Corporation Commission’s (“ACC”) 2006 BTA. The order states that for the next BTA, Commission regulated electric utilities, in consultation with the stakeholders, should prepare an assessment of the Available Transmission Capacity (ATC) for renewable energy and prepare a plan, including a description of the locations, amount and transmission needs of renewable resources in Arizona, to bring available renewable resources to load. Since the initial investigation the task force planning area has increased to include the entire SWAT planning area

⁴⁵ The case was released on August 13, 2008 to the SCWG website but is not publicly available information.

as displayed graphically in orange on **Figure 6**. A more detailed description of the RTTF subcommittee is available in **Exhibit 11**.

During 2008, the RRTF subcommittee held multiple open stakeholder meetings that were noticed via email and the WestConnect website. Additionally, the materials for these meeting were posted for review following the meetings, also on the WestConnect website.⁴⁶

For the 2008 study year the Renewable Task Force has developed or completed the following tasks:

- Completed workshop on energy zones and conceptual transmission
- Identified renewable energy zones across entire footprint⁴⁷
- Identified preliminary conceptual transmission options⁴⁸
- Performing reliability analysis of conceptual transmission

The RRTF will continue to hold open stakeholder meeting and provide updates to SWAT and WestConnect during open forums. Additionally, in 2009 the RTTF will continue to perform reliability studies to determine the feasibility of the conceptual transmission plans established in 2008, working with stakeholders during relevant review and comment periods.

⁴⁶ Materials for the Renewable Transmission Task Force (“RTTF”) are posted under the Arizona/New Mexico portion of the WestConnect website at http://westconnect.com/planning_swat_anm.php

⁴⁷ The RTTF conceptual map is available at http://www.westconnect.com/filestorage/SWAT_RTTF_draft_08-19-08.pdf and as **Exhibit 19** of this report

⁴⁸ Ibid

PUBLIC POLICY AND REGULATORY CONSIDERATIONS

In 2008 WestConnect and its Subregional Planning Groups were responsive to a variety of public policy and regulatory matters related to transmission planning. Those public policy and regulatory matters are discussed in this report under three headings: 1) national considerations; 2) regional considerations; and 3) state considerations. The WestConnect planning participants' responses are summarized in each of the respective sections. The WestConnect transmission planning participants responded to these matters utilizing established stakeholder processes described in this report. Future planning efforts will be shaped by these public policy and regulatory requirements as well as those still emerging. Therefore it is imperative that WestConnect's subregional planning process continue to engage with those developing public policy and regulatory requirements as well as with its other stakeholders.

NATIONAL CONSIDERATIONS

The US Congress adoption of the Energy Policy Act in 2005 ("EPAct 2005") resulted in several policy and regulatory changes at the national level that effects transmission planning. In 2007, the US Department of Energy ("DOE") and the Federal Energy Regulatory Commission ("FERC") adopted policies and approved regulations that:

- Implemented mandatory national reliability standards,
- Established nine planning principles for transmission providers,
- Designated a National Interest Electric Transmission Corridor ("NIETC") for Southern California and Arizona, and
- Yielded a draft Problematic Environmental Impact Study ("PEIS") for Federal Energy Corridors in eleven Western States.

Planning of electric transmission systems serves as a nexus for these four national efforts. WestConnect and its subregional planning groups have responded to these mandates in 2008 in variety of ways. The remainder of this section of the report highlights and documents WestConnect's planning response to these national policy and regulation requirements. **Exhibit 13** displays the DOE designated NIETC for affecting the southwestern United States.

FERC MANDATORY RELIABILITY STANDARDS

In response to EPACT 2005, FERC approved the North American Electric Reliability Corporation ("NERC") as the nation's electric reliability organization (ERO) for the purpose of establishing and overseeing a system of

mandatory and enforceable electric system reliability standards. FERC also approved mandatory reliability standards that apply to users, owners and operators of the bulk power system designated by NERC through its compliance registry procedures. Both monetary and non-monetary penalties may be imposed for violations of the standards. In April 2007 FERC approved NERC's *pro forma* Delegation Agreement – the blueprint for the contractual relationship between NERC and eight regional reliability entities (“RE”). The Western Electricity Coordinating Council (“WECC”) has been authorized as one of the eight regional RE’s. The delegation agreement includes a Compliance Monitoring and Enforcement Program to be used by NERC and regional entities to monitor, assess and enforce compliance with FERC approved mandatory reliability standards.

Among the elements included in the compliance program are procedures for audits and investigation, mitigation plans and remedial actions, procedures to address settlements, complaint procedures, confidentiality requirements, penalties, and hearing and review procedures. Some transmission providers within the WestConnect planning area experienced compliance audits in 2008. Compliance with the NERC and WECC mandatory planning standards approved by FERC has been among the items audited.

WestConnect Response

NERC has four applicable transmission planning standards (TPL-1 through TPL-4).⁴⁹ Each individual transmission provider has an obligation to comply annually with TPL-1 through TPL-4. SMUD submitted a report to WestConnect in support of its ten year transmission plan that serves as an exemplary response to that requirement.⁵⁰ The WestConnect subregional planning process has also been responsive in 2008. The WestConnect 2008 Study Plan included three study efforts described below that relate to TPL-1 through TPL-4. A summary of the findings of each study are reported elsewhere in this report.

A WestConnect-wide adequacy study of the 2007 WestConnect Transmission Plan was completed in 2008. Preliminary study results were presented at the WestConnect Planning Workshop on November 13, 2008. Following a period of stakeholder comment and review, this report will be presented for approval at WestConnect’s Annual Planning meeting in January 2009.⁵¹ The CCPG subregional planning group also performed a NERC compliance study in 2008 for transmission providers doing business in the state of Colorado.⁵² CCPG’s report was presented for public release approval at its December 16th, 2008 meeting. Arizona transmission providers have utilized SWAT subregional planning subcommittees and study groups to perform studies in support

⁴⁹ NERC Reliability Standards are located at - <http://www.nerc.com/page.php?cid=2|20>

⁵⁰ Sacramento Municipal Utility District (SMUD) 2008 Ten Year Plan Report available at - http://www.westconnect.com/filestorage/2008_SMUD_10-Yr_FINAL111808.pdf

⁵¹ <<WestConnect Adequacy Report link>>

⁵² CCPG 2008 NERC Compliance Report - <<Link to come after approval>>

of the State of Arizona's statutory requirement for a Biennial Transmission Assessment (BTA). The Arizona Corporation Commission approved its *Fifth Biennial Transmission Assessment 2008-2017* on December 3, 2008⁵³. That report is founded upon extensive SWAT study efforts in 2007 and 2008. The SWAT studies performed and referenced by the BTA are of a nature that they partially fulfill the NERC TPL-1 through TPL-4 requirements. .

FERC 890 PLANNING PRINCIPLES

In February 2007 FERC amended its regulations and the *pro forma* open access transmission tariff (*pro forma* OATT)⁵⁴, adopted in Order Nos. 888 and 889. This action was taken to remedy opportunities for undue discrimination and address deficiencies in the *pro forma* OATT. Increasing the transparency in the rules applicable to planning and use of the transmission system was a key purpose of the rule. Therefore the Final Rule requires that:

- Transmission providers participate in a coordinated, open and transparent planning process on both a local and regional level,
- Each transmission provider's planning process meet the Commission's nine planning principles, which are coordination, openness, transparency, information exchange, comparability, dispute resolution, regional coordination, economic planning studies, and cost allocation,
- Each transmission provider must describe its planning process in its tariff,
- FERC allow regional differences in planning processes.

WestConnect Response

The 2007 WestConnect Planning Report⁵⁵ documents steps taken by WestConnect transmission providers in 2007 to develop and exchange proposed Attachment K documents in response to the above requirements. The WestConnect website⁵⁶ also outlines transmission providers' efforts throughout the entire posting and review period leading up to FERC's December 7, 2007 filing/posting date. In July of 2008, FERC issued orders regarding the 2007 Attachment K filings of WestConnect transmission providers. FERC found the WestConnect transmission providers' proposed Attachment K filings:

⁵³ Arizona *Fifth Biennial Transmission Assessment 2008-2017* located at - http://www.cc.state.az.us/Divisions/Utilities/Electric/Biennial/2008%20BTA/BTA%20Report%202008%2010_14_08.pdf

⁵⁴ *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, 72 FR 12266 (March 15, 2007), FERC Stats. & Regs. ¶ 31,241 (2007), *reh'g pending* (Order No. 890).

⁵⁵ *2007 Final WestConnect Planning Report* located at - http://www.westconnect.com/filestorage/WestConnect_Planning_Report_FINAL.pdf

⁵⁶ FERC 890 Attachment K found at http://westconnect.com/init_schedule_k.php

- Meet the nine planning principals of Order 890 ***with certain modifications on regional participation, economic planning studies, and cost allocation.***
- Comply with the Order 890 coordination, transparency, information exchange and dispute resolution principles.
- Require compliance filings that were due by 10/15/08.

The above FERC findings were reported at WestConnect’s August 20, 2008 Joint CCPG/SSPG/SWAT meeting. It was determined that procedures addressing the management of economic planning study requests and for clustering economic planning studies would be needed for transmission providers’ compliance filings. Similarly, there was a need to consider the role that WestConnect and its subregional planning groups might take regarding economic study requests of TEPPC and their respective study priorities. WestConnect and its subregional planning groups participated in a TEPPC and Subregional Planning Group coordination meeting WebEx conference with FERC on September 9th 2008. A SRP “strawman” Attachment K compliance document was used at that meeting to address FERC’s concerns. The same document was used at a September 24, 2008 WestConnect stakeholder meeting in Las Vegas to take comments as WestConnect transmission providers finalized their compliance response for FERC.

WestConnect has also posted transmission providers’ FERC 890 Attachment K local stakeholder planning meeting notices on the WestConnect website.⁵⁷ Seven WestConnect transmission providers have taken advantage of this WestConnect service. APS, PNM, PSCO, SRP, SWTC, TEP and WAPA have each posted notices for their Attachment K required second and fourth quarter local stakeholder planning meetings. They also posted meeting materials, including presentation and meeting notes following the meeting.⁵⁸ During 2008, WestConnect noticed nine FERC 890 stakeholder meetings, four of which were stakeholder meetings involving two utilities. The table below summarizes the local stakeholder meetings noticed on the WestConnect website:

Utility/Utilities	Meeting Date	Meeting Location	Meeting Date	Meeting Location
<i>Arizona Public Service/Salt River Power</i>	May 21, 2008	Phoenix, Arizona	December 10 ,2008	Tempe, Arizona
<i>Southwest Transmission Cooperative/Tucson Electric Power</i>	June 5, 2008	Tucson, Arizona	December 9, 2008	Tucson, Arizona
<i>Public Service of Colorado</i>	March 11, 2008	Denver, Colorado	December 2, 2008	Denver, Colorado
<i>Public Service of New Mexico</i>	March 6, 2008	Albuquerque, New Mexico	November 6, 2008	Albuquerque, New Mexico

⁵⁷ Regulatory and Governmental Planning Matters found at <http://westconnect.com/planning.php>

⁵⁸ FERC Order 890 Stakeholder notices, agenda and materials are posted on WestConnect’s website at http://www.westconnect.com/documents_results.php?categoryid=85

Table 4 –FERC 890 Local Stakeholder Meetings Noticed On WestConnect Website

The following Westconnect Planning Member FERC 890 local stakeholder meetings occurred during 2008 without notices or materials being posted on the WestConnect website:

Utility/Utilities	Meeting Date	Meeting Location	Meeting Date	Meeting Location
<i>El Paso Electric</i>	January 22, 2008	El Paso, Texas	August 25, 2008	<unknown>
<i>Imperial Irrigation District</i>	<unknown>	<unknown>	<unknown>	<unknown>
<i>Sierra Pacific Resources/Nevada Power</i>	May 6, 1008	Reno, Nevada	<unknown>	<unknown>
<i>Transmission Agency of Northern California</i>	<unknown>	<unknown>	<unknown>	<unknown>
<i>Tri-State Generation and Transmission</i>	<unknown>	<unknown>	<unknown>	<unknown>
<i>Western Area Power Administration-SNR</i>	January 18, 2008	<unknown>	October 23, 2008	<unknown>
<i>Western Area Power Administration-DSW</i>	<unknown>	<unknown>	<unknown>	<unknown>
<i>Western Area Power Administration-RMR</i>	<unknown>	<unknown>	<unknown>	<unknown>
<i>Sacramento Municipal Utility District</i>	<unknown>	<unknown>	<unknown>	<unknown>
<i>Black Hills Power</i>	<unknown>	<unknown>	<unknown>	<unknown>
<i>Basin Electric Power Cooperative</i>	<unknown>	<unknown>	<unknown>	<unknown>

Table 5 –Additional WestConnect Planning Member’s FERC 890 Local Stakeholder Meetings

DOE NIETC DESIGNATION

Section 1221 of EAct 2005 requires that DOE issue a national transmission congestion study for comment by August 2006 and every three years thereafter. The DOE is to recommend and the Secretary of Energy is to designate selected geographic areas as National Interest Electric Transmission Corridors (NIETC) based upon the congestion studies and public comment. On October 2, 2007 DOE issued its National Electric Transmission Congestion Report and order formally designating the Mid-Atlantic and Southwest National Corridors.⁵⁹ The NIETC designations were effective October 5, 2007 and will remain in effect until 2019 unless DOE rescinds, renews, or extends the designation after notice and opportunity for comment. The Southwest NIETC is depicted in **Exhibit 17**. The DOE also identified Phoenix and Tucson as two of four “Congestion Areas of Concern” where a large-scale

⁵⁹ **Federal Register** / Vol. 72, No. 193 / Friday, October 5, 2007 / Notices

congestion problem exists or may be emerging but more information and analysis appear to be needed to determine the magnitude of the problem.

Section 1221 of EAct 2005 has a far reaching and continued impact on future transmission planning needs for the West. There will be Western Interconnection planning activities required to support the congestion study required of DOE every three years. It is anticipated that this will largely be addressed by the congestion analysis performed by TEPPC. However, it is also obvious that the implications of the Southwest NIETC designation elevates the importance of planning and siting electric infrastructure located within or that traverses the Southwest NIETC. A demonstration that “critical congestion” does not exist over the Southwest NIETC or that planned electric facilities effectively mitigate the DOE finding of “critical congestion” will likely be required for DOE to consider rescinding the Southwest NIETC before 2019.

WestConnect Response

WestConnect relies on TEPPC to perform congestion studies and economic expansion planning studies for the Western Interconnection. WestConnect concluded its 2007 planning cycle with a transmission economic expansion study request of TEPPC. WestConnect requested that TEPPC’s 2008 Study Plan establish the nature and extent of congestion existing or likely to exist in the planning horizon for all DOE NIETC, Congestion Areas of Concern, and Conditional Areas of Congestion within the Western Interconnection.⁶⁰ WestConnect’s study request was consolidated with other similar requests as portfolio cases 5, 6, 7, and 8 in TEPPC’s 2008 Study Plan. These cases have a priority level of 4, 5, 7 and 8. As a result these studies may not be performed in sufficient time to be included in TEPPC’s 2008 study plan report in the Spring of 2009. However, DOE has elected to focus its 2009 congestion assessment solely on existing and historical congestion. Therefore, the historical congestion investigation by TEPPC’s Historical Analysis Work Group **will likely be the only** 2008 TEPPC results available in response to WestConnect’s request.

The 2008 WestConnect Transmission Plan includes projects that will increase the WECC Path 49 rating. This path is also known as the East of River (“EOR”) path and presently consists of six transmission lines interconnecting Arizona to Nevada and Southern California. The EOR path is the Arizona supply-end of the transmission system that traverses DOE’s designated Southwest NIETC. This path has the largest single path rating in the Western Interconnection. The EOR transmission improvements contained in the 2008 WestConnect Plan and associated path rating increases are depicted in **Table 6**. The future EOR path rating with planned improvements and new lines were presented and documented at the May 21, 2008 WestConnect TTC/ATC Stakeholder meeting.⁶¹ The

⁶⁰ <http://www.wecc.biz/documents/library/TEPPC/studies/>

⁶¹ 2008 TTC/ATC document can be found by searching for “TTC/ATC” at - <http://www.westconnect.com/documents.php>

path rating increases are based upon technical studies performed in conformance with the WECC Regional Planning path rating process using the Western Arizona Transmission Study (WATS) forum for peer review. The effectiveness of these EOR Path upgrades and rating increases in mitigating the NIETC presumed congestion is yet to be determined by WestConnect’s 2008 study request of TEPPC.

Path Element	Path Rating (MW)	Change (MW)	Date of Change	Improvement
Navajo – Crystal 500 kV Perkins –Mead 500 kV Moenkopi – Eldorado 500 kV Liberty – Peacock –Mead 345 kV Hassayampa – North Gila 500 kV Palo Verde – Devers 500 kV	7,550		2009 2009 2006 2006	Upgrade series capacitors - - - Upgrade series capacitors Upgrade series capacitors
Existing EOR Path Rating	8,055	505	2006	
	9,300	1245	2009	
Palo Verde – Verde No.2 500 kV	10,500	1200	2011	New Line – CEC denied by ACC. Re-filing with Harquvar Transmission Project 500 kV interconnection pending
Palo Verde – North Gila No. 2 500 kV	11,700	1200	2014	New Line – CEC approved by ACC.

Table 6 - Path Rating History for WECC Path 49 (EOR)

The transmission import capability of the Phoenix and Tucson areas were studied by SWAT subcommittees in 2007 and 2008. These two local areas were previously designated as DOE “Congestion Areas of Concern.” The SWAT study results are evaluated by the Arizona Corporation Commission’ in its latest Biennial Transmission Assessment report.⁶² The ACC has adopted the use of two terms as indicators of the load serving capability of local load pockets: Simultaneous Import Limit (SIL) and Maximum Load Serving Capability (MLSC). The SIL defines the amount of local load that can be served without local generation and still meet NERC reliability requirements for a single contingency outage. The MLSC defines the maximum load that can be served locally with all local generation at maximum capacity with associated local operating reserves maintained. When local peak load exceeds the SIL then the ACC requires that Reliability Must Run (RMR) cost production studies be performed to ascertain the annual hours that local load exceeds the SIL and the out-of-merit-order cost for local RMR generation energy production. The ACC’s Fifth Biennial Transmission Assessment concluded that the SIL and MLSC for both the Phoenix and Tucson areas increased over the ten year period studied. The MLSC remains greater than the forecast local peak load and the hours. Phoenix area RMR generation is not expected to be dispatched out-of-

⁶² Arizona Fifth Biennial Transmission Assessment 2008-2017 located at - http://www.cc.state.az.us/Divisions/Utilities/Electric/Biennial/2008%20BTA/BTA%20Report%202008%2010_14_08.pdf

merit-order and cost of Tucson area RMR generation is not sufficient to warrant additional transmission improvements. These Arizona Corporate Commission BTA findings seem to dispel the merits of the DOE's designation of these two local areas as "Congestion Areas of Concern."

DOE PEIS FOR FEDERAL ENERGY CORRIDORS IN WESTERN STATES

Section 368 of EAct 2005 addresses energy right of way corridors on federal lands. It requires the Departments of Commerce, Defense, Energy and Interior to consult with each other and within 2 years:

- Designate, under their respective authorities, corridors for energy facilities on Federal land in eleven contiguous Western States;
- Perform any environmental reviews that may be required to complete the designation of such corridors; and
- Incorporate the designated corridors into the relevant agency land use and resource management plans or equivalent plans.

The DOE published its Final West-wide Energy Corridor Programmatic Environmental Impact Statement (PEIS) in the *Federal Register* on November 28, 2008.⁶³ It evaluates potential impacts associated with the proposed action to designate 6000 miles of new and locally approved energy corridors on federal land in Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming as displayed on **Exhibit 14**. Following completion of a 60 day consistency reviews by the governors of the states affected by the proposed land use plan amendments, any approval of the selected land use plan amendments will be documented in the Records of Decision (ROD). The Final PEIS, maps of the proposed energy corridors and other support documents can be found on the West-wide Energy Corridor PEIS website.⁶⁴

WesConnect Response

The agencies issuing the Final PEIS would amend their respective land use plans by designating a series of energy corridors effective upon signing of the ROD. The energy corridors ultimately adopted on federal lands by this process may have significant impact on the siting of future planned electric infrastructure. The federal energy corridors ultimately adopted may not be well aligned with the long term transmission needs that are just beginning to emerge from long range transmission studies in the West.

⁶³ **Federal Register** / Vol. 73, No. 230 / Friday, November 28, 2008 / Notices

⁶⁴ <http://www.corridoreis.anl.gov/index.cfm>

As a result SWAT has taken the initiative to begin exploring new emerging electric transmission corridor needs with federal land manager agencies. Comments submitted by SWAT or its participating transmission providers on behalf of SWAT during the PEIS process and letters to respective federal land managers are posted on the WestConnect website⁶⁵ SWAT is in the process of forming a new subcommittee to begin more direct planning contact with federal land agencies now that a ROD is eminent.

K.R. Saline and Associates has also been participating in the WGA WREZ land and environment subcommittee on behalf of WestConnect. This effort is geared to portraying permitting and siting challenges for renewable energy zones and associated conceptual transmission requirements. Reference to the DOE PEIS serves as a guide for such policy explorations.

REGIONAL CONSIDERATIONS

The electrical system is a highly complex system that requires broader planning that must take into account regional considerations to determine the best possible solution weighing multiple factors and options. The following sections describe the climate of the most notable regional policy driven considerations affecting transmission planning in the Western United States.

WESTERN GOVERNORS' ASSOCIATION WREZ STUDY

The Western Governors' Association and U.S. Department of Energy launched the Western Renewable Energy Zones ("WREZ") Project on May 28, 2008.⁶⁶ The WREZ project goals include providing reliable information for use by decision-makers that supports the cost-effective and environmentally sensitive development of renewable energy in specified zones, and providing conceptual transmission plans for delivering that energy to load centers within the Western Interconnection.

The WGA WREZ study activity during 2008 included activity from the three work groups established for the study work. During 2008 the Zone Identification Technical Analysis ("ZITA") Work Group established zone criteria for including identification of the resource criteria for initial study areas using NREL Base Resource maps and other resource information, identified candidate study areas and made progress in identifying and proposing renewable energy zones. During 2008, the Environment and Lands Work Group ("E&L") prepared a draft spreadsheet

⁶⁵ Regulatory and Governmental Matters, Correspondence, found at <http://westconnect.com/planning.php>

⁶⁶ Briefing materials at: <http://www.westgov.org/wga/initiatives/wrez/briefing5-28.htm>

identifying avoidance area and sensitive lands. These identified areas were incorporated into the draft maps prepared by Black & Veatch and NREL for the initial proposed Renewable Energy Zones. The E&L group also worked to develop a data request form to request information from state agencies and stakeholders regarding areas of environmental concern. The E&L group also worked on a set of criteria to categorize proposed renewable energy zones. The Generation and Transmission Modeling Work Group, during 2008, began working on the WREZ Modeling tool and conceptual transmission plans within the study area.⁶⁷

In the first quarter of 2009, the WGA WREZ study plan include gaining approval of the proposed renewable energy zones and approval of the preliminary “exclusion” areas, submit study request to WECC/TEPPC on required electric transmission to transmit the generation to load from the WREZ and complete the WREZ model, including model usage training. During the second quarter of 2009 the WGA WREZ study plans include refine “exclusion” and “sensitive” area designations based on Wildlife Corridor Study results, the adopt the final renewable energy zones and submit the Phase 1 report to Western Governors.

STATE CONSIDERATIONS

All of the individual states within the WestConnect planning area have developed approaches to encourage the study and development of renewable resources and the transmission system required to transport the generation to the load centers. The following sections provide an overview of the approaches each state has implemented.

ARIZONA CORPORATION COMMISSION RENEWABLE ENERGY REQUIREMENTS

The ACC took action on its fourth Biennial Transmission Assessment (“BTA”) in March 2007.⁶⁸ In addition to the normal findings and conclusions the ACC Decision required that Commission regulated electric utilities, in consultation with the stakeholders, prepare an assessment of Available Transmission Capacity for renewable energy and prepare a plan to bring available renewable resources to load in the next BTA. The plan was to include a description of the location, amount, and transmission needs of renewable resources in Arizona. The ACC believes that inclusion of this information in the next BTA would advance the goals of the Commission’s Renewable

⁶⁷ WGA WREZ Presentation, WestConnect Planning Workshop, November 13, 2008 located at <http://www.westconnect.com/filestorage/LewWestConnect11-08.pdf>

⁶⁸ ACC Decision No. 69389

Energy Standard rules, the Western Governors Association’s Clean and Diversified Energy Advisory Committee (“CEDEAC”) report and FERC Order 890. The 2008 SWAT Renewable Task Force efforts are directed at this ACC BTA requirement. The 2008 SWAT Renewable Task Force efforts are the evolution of requirement to meet a subregional desire to proactively plan for renewable integration and the required transmission.

In 2008 the RTTF filed in the ACC docket the final report. The ACC’s Staff reviewed and commented on the filing in the Fifth BTA. The final *Fifth Biennial Transmission Assessment* found that,

“The Task Force Report was filed for this BTA in compliance with the fourth BTA Order. (Decision No.69389) A supplement to the original report was filed on August 6, 2008, in response to the BTA Workshop I request. The report, supplement, and the associated BTA Workshop I presentation document the stakeholder process that the Task Force utilized to assemble an industry perspective regarding the renewable energy development potential in Arizona. The industry’s response comports with the Commission’s Order in the Fourth BTA.”⁶⁹

The Commission further Ordered that the (as related to the SWAT Renewable Transmission Task Force),

“IT IS FURTHER ORDERED that Commission-regulated electric utilities shall, by April 30, 2009, conduct a joint workshop or series of planning meetings to develop ways in which new transmission projects can be identified, approved for construction, and financed in a manner that will support the growth of renewables in Arizona.

IT IS FURTHER ORDERED that the Commission-regulated electric utilities shall take the results of the Arizona Renewable Transmission Task Force and the SWAT Renewable Transmission Task Force Plans developed for the Fifth Biennial Transmission Assessment and identify the top three potential renewable transmission projects in their respective service territories.

IT IS FURTHER ORDERED that each Commission-regulated utility, either alone or in cooperation with other interested utilities, shall develop plans to identify future renewable transmission projects and develop plans and propose finding mechanisms to construct the top three renewable transmission projects. These plans and mechanisms shall be filed with the Commission no later than October 31, 2009 and shall be discussed in the Sixth Biennial Transmission Assessment.”⁷⁰

CALIFORNIA RENEWABLE ENERGY TRANSMISSION INITIATIVE

The Renewable Energy Transmission Initiative (“RETI”)⁷¹ is a statewide initiative to help identify the transmission projects needed to accommodate renewable energy goals, support future energy policy, and facilitate transmission corridor designation and transmission and generation siting and permitting. RETI is an open and transparent collaborative process in which all interested parties are encouraged to participate. RETI will

⁶⁹ ACC Docket No. E-00000D-07-0376, Recommended Opinion and Order,

<http://images.edocket.azcc.gov/docketpdf/0000090050.pdf>

⁷⁰ ACC Docket No. E-00000D-07-0376, Amendment 1, <http://images.edocket.azcc.gov/docketpdf/0000091395.pdf>

⁷¹ <http://www.energy.ca.gov/reti/index.html>

assess all competitive renewable energy zones in California and possibly also in neighboring states that can provide significant electricity to California consumers by the year 2020. RETI also will issue a report to identify those zones that can be developed in the most cost effective and environmentally benign manner and will prepare detailed transmission plans for those zones identified for development.⁷² The final report for Phase 1A was submitted on May 16, 2008.⁷³

COLORADO ENERGY POLICY

The Colorado Public Utilities Commission (“CPUC”) hosted an informational meeting on July 24, 2007 to explore the connection between transmission development and implementation of state energy policies being developed by the state of Colorado. WestConnect and SWAT accepted the CPUC’s invitation to participate as panelists at the informational meeting. Senate Bill 100 was among the new legislation considered.⁷⁴ Colorado Senate Bill 100 requires rate regulated electric utilities to do the following on or before October 31 of each odd number year:

- Designate “Energy Resource Zones,”
- Develop plans for transmission necessary to deliver the electric power consistent with the timing of development of energy resources in or near each zone,
- Consider how transmission can be provided to encourage local ownership of renewable energy facilities, and
- Submit proposed plans, designations, and applications for certificates of public convenience and necessity to the CPUC for simultaneous review.

A number of CCPG participants have been involved in the various open stakeholder meetings and transmission planning meetings addressing the above requirements.⁷⁵ On November 24, 2008 Public Service Company of Colorado published an informational report in response to the SB 100 requirements.⁷⁶ The report identifies five energy resource zones as depicted on **Exhibit 15**. In addition, the report describes the development of transmission plans that could support the five resource zones. Those Senate Bill 100 related transmission plans are reflected in the companion 2008 WestConnect Transmission Plan document.

⁷² <http://www.energy.ca.gov/reti/index.html>

⁷³ <http://www.energy.ca.gov/2008publications/RETI-1000-2008-002/RETI-1000-2008-002-F.PDF>

⁷⁴ Colorado Senate Bill, SB 07-100, codified at C.R.S. § 40-2-126.

⁷⁵ Dates and details from the meetings available at - <http://www.rmao.com/wtpp/SB100.html>

⁷⁶ Senate Bill 07-100 Designation of Energy resource Zones and Transmission Planning Report, November 28, 2008. <http://www.rmao.com/wtpp/Sb100/SB-100%20Informational%20Report%20Final.pdf>

NEVADA

Renewable Energy Transmission Access Advisory Committee (“RETAAC”) was created by Executive Order⁷⁷ of the Governor of Nevada. RETAAC was created because Nevada is a net importer of energy. The purpose of RETAAC⁷⁸ is to:

- Identify and rank commercially developable locations for renewable energy
- Assess existing and planned transmission access to these resources
- Make recommendations for additional transmission

RETAAC established a phased work plan. The Phase 1 Report identified: Renewable Energy Zones (“REZ”), the transmission required for access to grid, and recommended transmission lines. Future phases will include more detailed environmental review.⁷⁹

NEW MEXICO RENEWABLE ENERGY TRANSMISSION AUTHORITY

In March 2007 the New Mexico legislature created a Renewable Energy Transmission Authority (“RETA”). The purpose of RETA is to develop a renewable energy generation and export industry, increase in state electric system infrastructure reliability, and proactively pursue statewide electric transmission capital improvement planning and implementation. RETA is intended to orchestrate multi-state utility negotiations to facilitate the development of NM transmission infrastructure for renewable energy development and export,⁸⁰ and will focus on electric infrastructure planning financing and development.⁸¹ RETA will rely on revenue from the projects it initiates, not the state’s faith and credit or General Fund.

To be eligible for RETA funding, at least 30% of a transmission project’s energy must be renewable derived electricity. RETA has already engaged as a participant in the SWAT subregional transmission process. RETA has also been active in the SWAT New Mexico Study Group wind collector system study.

⁷⁷ http://gov.state.nv.us/EO/2008/EO-2008-06-12_RETAACII.pdf

⁷⁸ Nevada RETAAC: <http://gov.state.nv.us/Energy/FinalReport.htm>

⁷⁹ <http://gov.state.nv.us/Energy/FinalReport/RETAAC%20Phase%20I%20Report.pdf>

⁸⁰ 2007 WestConnect Planning Report, page 36

⁸¹ New Mexico Renewable Energy Transmission Authority: <http://www.nmreta.org/>

WYOMING INFRASTRUCTURE AUTHORITY

The Wyoming Infrastructure Authority (WIA) was created in June, 2004 by the Wyoming state legislature. It is tasked with diversifying and growing the state's economy through the development of electric transmission infrastructure. The WIA is responsible for planning, financing, building, maintaining and operating interstate electric transmission and related facilities. In 2006, the Wyoming legislature expanded the WIA's role to become directly involved in financing and promoting advanced coal technologies related to electric generation. Specific tools and responsibilities of the WIA include the following:

- Issuing revenue bonds to finance new transmission lines and advanced coal plants;
- Extending up to \$1 billion in bond financing for projects owned by private parties;
- Entering into partnerships with public or private entities to build and upgrade transmission lines and develop advanced coal plants;
- Owning and operating transmission lines in instances where private investment is not offered;
- Investigating, planning, prioritizing, and establishing corridors for electric transmission; and,
- Establishing and charging fees and rates for use of its facilities.

The WIA is involved with the Wyoming to Colorado Intertie transmission project that traverses the WestConnect planning area. Reports for this project are available via the WIA website.⁸²

⁸² <http://www.wyia.org/home.htm>

CONCLUSIONS

The WestConnect planning area encompasses seven states, three subregional planning areas and fifteen Planning Member transmission owners. The 2008 WestConnect Planning report has provided an overview of the planning process, 2008 planning efforts, 2009 planned activities and public policy shaping these activities. The following conclusions provide an aggregate summary of the WestConnect planning area activities for 2008 and provide a high level overview of where WestConnect planning considers developing toward in the future.

2008 SUMMARY

2008 marked the second annual WestConnect Planning Report. Transmission planning within the WestConnect planning area continued to grow and improve during 2008. The following summary highlights the planning effort and key results during 2008:

7. Two utilities joined the WestConnect Planning membership; Basin Electric Power Cooperative and Black Hills Power.
8. A new subregional planning group was formed within the WestConnect planning area in Nevada and Northern California – Sierra Subregional Planning Group (“SSPG”).
9. Stakeholder involvement increased thru improved noticing mechanisms, public policy toward open meetings, FERC 890 requirements, renewable generation developer process interest and focus on “single system” planning methodology.
10. WestConnect’s transmission planning focus remains on reliability system performance with a specific attention being paid to stakeholder input, renewable integration and regional benefits.
11. Based upon the 2008 WestConnect Adequacy Study results for 2013 and 2018 the WestConnect planning processes appear to be yielding a sufficiently robust WestConnect Transmission Plan with a high degree of compliance with NERC TPL standards. .
12. Renewable Integration study work is continuing on multiple overlapping levels including NREL WWSIS, WGA WREZ, Colorado SB 100 and SWAT Renewable Transmission Task Force.
13. Subregional Planning Groups within WestConnect planning area are developing Charters to provide the framework for future planning activities.
14. WestConnect continued to monitor the regional and public policy issues affecting WestConnect.

RECOMMENDATIONS FOR IMPROVEMENTS

WestConnect is constantly working to improve its planning process and function. WestConnect is encouraged to consider the following goals during the up-coming planning cycle:

1. Continue working to improve stakeholder involvement through improved relationships with additional stakeholder groups and coordinating activities. Continue to improve notification of up-coming meeting thru early and consist noticing. Improve stakeholder involvement through budgeting of web-based conferencing at select meetings.
2. Strive to achieve the highest possible level of task completion on track. The high level of dependence among study groups requires improved timeline management for base case coordination and planning data.
3. Work to keep transmission plan information on WestConnect's Transmission Planning Management system up to date to allow highly accurate study work utilizing current information.
4. Continue to provide valuable updates on projects' status and future activities.
5. Consider developing an on-line WestConnect-wide aggregation of interconnection queue information supplied and continued to be managed by each utility's OASIS site.
6. Work to develop processes for identifying potential seams reliability criteria violations in cooperation with neighboring subregional planning areas in future Westconnect Adequacy study work
7. Provide specific recommendation for improvement on document management within the WestConnect website.
8. Work to provide a single TTC/ATC table or map open to stakeholder examination on the website.
9. Work to create a single database of existing transmission facilities for all WestConnect entities.