

**WEST
CONNECT**

Enhancing wholesale
electricity markets
in the southwest

2009

WestConnect

Transmission Planning Report

A Report Detailing the
Subregional Planning Efforts
Within the WestConnect Planning Area
During the 2009-2010 Timeframe

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SALT RIVER PROJECT
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WESTERN AREA POWER ADMINISTRATION - SIERRA NEVADA REGION
WESTERN AREA POWER ADMINISTRATION - ROCKY MOUNTAIN REGION

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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Any recommendations, opinions or findings stated in this report are based on circumstances and facts as they existed at the time the work was performed. Any changes in such circumstances and facts upon which this report is based may adversely affect any recommendations, opinions or findings contained herein. No part of this report may be modified or deleted to change the content or context, without the express written permission of WestConnect and KRSA.

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EXECUTIVE SUMMARY

The purpose of the 2009 WestConnect Planning Report is to provide an overview of the subregional planning efforts that occurred within the WestConnect planning area during 2009. 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.

WestConnect hosted three stakeholder meetings during 2009. The Annual Planning Meeting was on January 4, 2009 at Nevada Power Company headquarters in Las Vegas, Nevada. A Joint CCPG/SSPG/SWAT meeting was held on August 20, 2009 at Tri-State Generation and Transmission Association headquarters in Westminster, Colorado. WestConnect's Annual Planning Workshop was held on November 13, 2009 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 *2009 WestConnect Transmission Plan*. Key findings of this Planning report are outlined below.

1. Stakeholder involvement increased through 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 2009 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.

This report and its companion 2009 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 February 17, 2010 at Nevada Power Company Offices in Las Vegas, Nevada.

Draft do not cite

OVERVIEW

This report documents the WestConnect planning activities that occurred during 2009, results of 2009 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**.

¹ WestConnect Planning - Objectives and Procedures for Regional Planning document is available at - http://westconnect.com/filestorage/WestConnect_ Objectives_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	Sacramento Municipal Utility District
Basin Electric Power Cooperative	Salt River Project
Black Hills Power	Southwest Transmission Cooperative
El Paso Electric	Transmission Agency of Northern California
Imperial Irrigation District	Tri-State Generation and Transmission Association
Nevada Power Co. / Sierra Pacific Resources	Tucson Electric Power Company
Xcel Energy / Public Service Co. of Colorado	Western Area Power Administration
Public Service Co. of New Mexico	

Table 1 – Current WestConnect Planning Management Committee Members³

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. Many of their transmission facilities are jointly owned with other parties. **Figure 1** graphically displays the current WestConnect planning area transmission.

³ *Planning Members that joined during 2009.



Figure 1 – WestConnect Planning Area

HISTORY OF THE WESTCONNECT PLANNING REPORT

The 2009 WestConnect Planning report is the third 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 during 2007 and the second annual report documented the planning efforts during the 2008 planning year. 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 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 compiled and posted for subsequent comment.⁴ 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, 2009 the 2008 WestConnect Planning Report⁵ was unanimously approved by the PMC at the WestConnect Annual Meeting in Las Vegas with the changes reflected within the 2008 WestConnect Planning Errata.⁶

Comment [gtr1]: Add link to 2008 Westconnect Planning Report

2009 REPORT PURPOSE AND FRAMEWORK

The purpose of the 2009 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, 2009 activities and study results, and outlines the proposed 2009 WestConnect transmission activities and study plan. It also documents WestConnect planning efforts to engage with, and respond to, emerging public policy and regulatory requirements. The 2009 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 2009 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 study group must have a study plan approved by the STPG.

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

⁴ Compiled Review and Comment located at -

http://www.westconnect.com/filestorage/Comments_on_the_Draft_WestConnect_Planning_Report.doc

⁵ 2007 WestConnect Planning Report -

http://www.westconnect.com/filestorage/WestConnect_Planning_Report_FINAL.pdf

⁶ 2007 Errata - http://www.westconnect.com/filestorage/2007_Annual_Meeting_Errata_v2.pdf

2009 WestConnect Transmission Plan.⁷ This report and the companion 2009 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, 2009 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 16**. 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.

2009 REPORT DEVELOPMENT PROCESS

A three-stage approach was used to prepare the 2009 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 of a 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 4th, 2009 at the Salt River Project's PERA Club in Tempe, Arizona. Transmission Providers and STPGs presented information regarding their respective

⁷ 2009 WestConnect Transmission Plan Report available at - http://www.westconnect.com/planning_reports.php

transmission expansion plans and related planning activities. Merchant transmission and generation developers also reported on their respective development plans.

The Workshop provided an informal setting to promote effective discussion of each presentation.⁸ 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 2008 WestConnect Plan;
 - Highlight changes in your 2009 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 2009 to support your transmission plan?
 - What reports exist for the studies performed in 2009?

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 2009 Planning report for industry review and comment beginning on January 19th, 2010. The first draft report was based on ten year plans entered in the Transmission Plan Management system ("TPM")⁹ and information gathered at the WestConnect Workshop.¹⁰ The first draft 2009 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.¹¹ Industry comments were collected, compiled and posted on the WestConnect website for other parties review, comment and response during the two

⁸ The WestConnect Workshop agenda and presentation materials are located at <http://westconnect.com/planning.php>

⁹ Transmission Plan Management System ("TPM") located at www.westconnectplan.com

¹⁰ WestConnect Planning Workshop Presentation from November 13, 2009 are located at - http://www.westconnect.com/documents_results.php?categoryid=17

¹¹ The Notice of posting, Comments and Response documentation and the Draft 2009 WestConnect Report available at - http://westconnect.com/planning_reports.php

week review timeframe. A final draft of the report was then prepared by WestConnect Planning in response to received comments.¹² The final draft of the report was the primary subject of the WestConnect Annual Meeting.

WESTCONNECT ANNUAL MEETING: PRESENTATION OF FINAL REPORT

The WestConnect Annual Meeting was held in Las Vegas at Nevada Power Company's facilities on February 17th, 2010. The primary purpose of this meeting was to present the final draft of the 2009 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 seven entities. The parties commenting on the draft WestConnect Reports are listed in **Table 2**. A majority of the comments concerned clarification and additions in the subregional planning group's study plans in the Planning Report and entity planned project reporting in the Plan Report. The comments and concerns from the draft report provided valuable feedback and resulted in refinements in the final *2009 WestConnect Planning Report*.

Comment [gtr2]: This Section will be Revised after Comment Period

Arizona Public Service
Public Service Company of Colorado/Xcel Energy
Public Service Company of New Mexico
Salt River Project
Southwest Transmission Cooperative
Tri-State Generation and Transmission Association
Western Area Power Administration

Table 2 – Draft 2009 Planning Report Commenting Parties

¹² Ibid

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 SPG that forms within the WestConnect planning area. The planning areas for each of the current SPGs are defined in the **Figure 2** below.

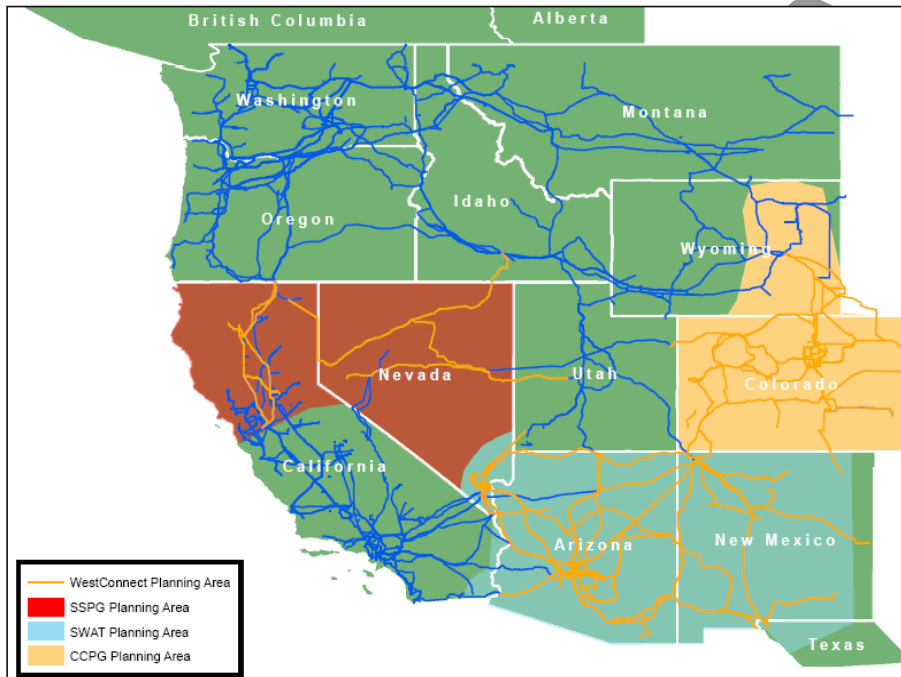


Figure 2 – Coordinated Western Interconnection Planning Processes

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. 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 **Figure 3**. The WestConnect subregional planning process consists of activities represented by each of the single STPG circles.

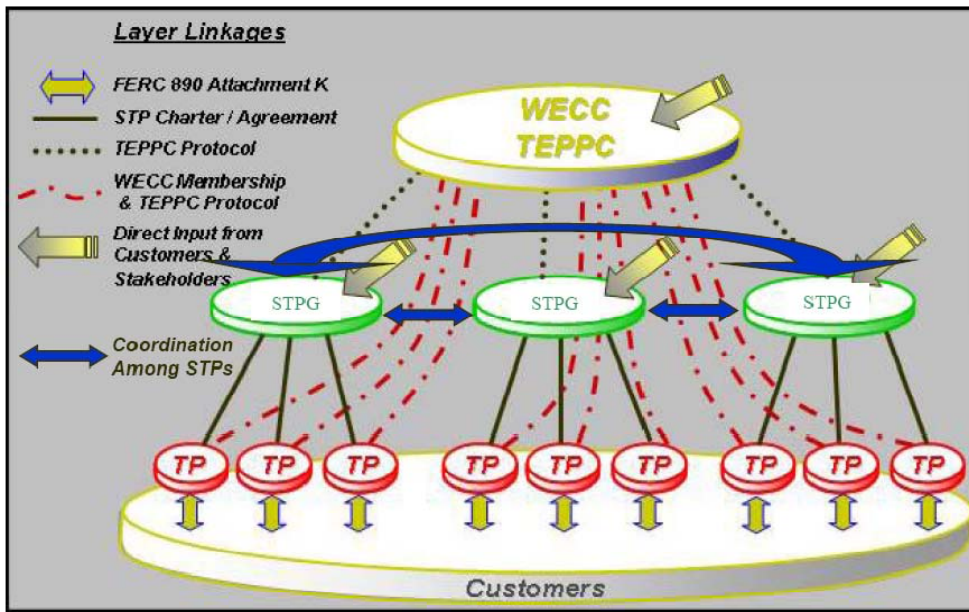


Figure 3 – Coordinated Western Interconnection Planning Processes

The WestConnect planning process utilizes a planning cycle concept depicted in **Figure 4**. 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 4th, 2009. The annual planning meeting is scheduled for February 17th, 2010.

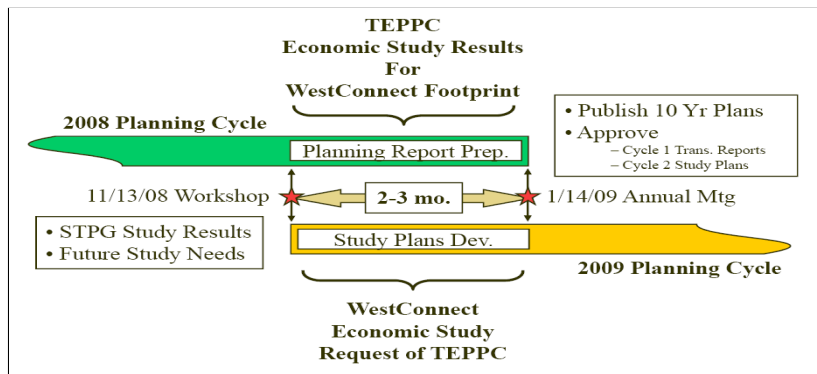


Figure 4 – 2009 WestConnect Planning Cycle

Comment [gtr3]: Revise with 2010 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 annual workshop and annual meeting was spent preparing, reviewing and commenting on the draft WestConnect planning report of the precedent planning cycle and the draft of the annual WestConnect Transmission Plan. Additionally, 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 2009 in support of the WestConnect planning process:

- *Development of the Transmission Plan Management system*¹³ – The TPM is an online database that allows utility to update their ten year plans throughout the year. Stakeholders can request this data as required, providing the most up-to date information possible.

¹³ WestConnect Transmission Plan Management system (“TPM”) website is located at www.westconnectplan.com

- *WestConnect Newsletter*¹⁴ – An automated email newsletter was developed and implemented during the summer of 2009, to enhance 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 STPG activities and concerns.
- *WestConnect Website*¹⁵ *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 2009. Similar transition of the CCPG website material is in progress to assure a single location for access to subregional planning materials.
- *WestConnect Google® Mapping Product*¹⁶ – 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, on behalf of WestConnect, has attended and taken notes for each of the STPG 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 2009 Annual TTC/ATC Meeting. WestConnect Planning is expected to provide this service in forthcoming years.

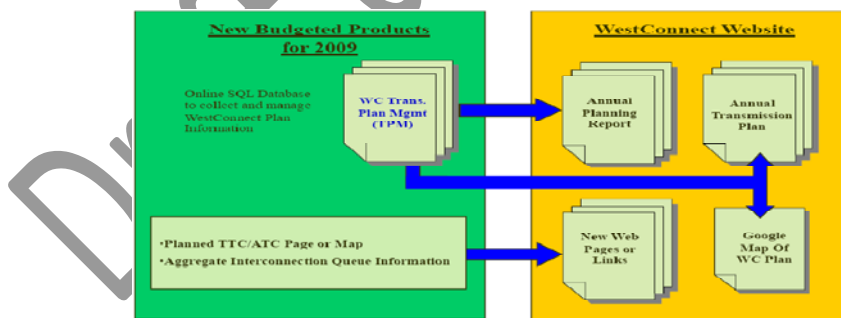


Figure 5 – Coordinated Western Interconnection Planning Processes

¹⁴ The WestConnect newsletter sign up is located at <http://www.westconnect.com/newsletsub.php>

¹⁵ The WestConnect website is <http://www.westconnect.com>

¹⁶ WestConnect Google® Mapping product is available online at - http://westconnect.com/planningmap_sm.php

The 2009 WestConnect planning process will result in the four primary planning products; this 2009 *WestConnect Planning Report*, the 2009 *WestConnect Transmission Plan Report*, an Interactive Map of WestConnect Plan and the TPM. **Figure 5** graphically displays the core planning product interaction.

Draft do not cite

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.

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 2010 synchronized study plan is clearly laid out in **Exhibit 14**.

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 2009 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 during 2009 is provided as **Exhibit 2**. **Exhibit 3** lists by entity, the participation at the WestConnect meetings during 2009. **Exhibit 4** lists by entity, the participation at the CCPG meetings during 2009. **Exhibit 5** lists by entity, the participation at the SSPG meetings during 2009. **Exhibit 6** lists by entity, the participation at the SWAT meetings during 2009.

Stakeholder participation, including study requests, is greatly encouraged. **Exhibit 10** 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 2009 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, 2009. 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 2008 WestConnect Reports. Stakeholders did participate in this meeting.
- *WestConnect Planning Webinar with FERC* – This meeting was held as a Webinar/Conference Call on January 28, 2009. The main topic for the meeting was to present a 2008 WestConnect Planning Overview and the 2008 Planning Activity to FERC.
- *WestConnect Total Transfer Capacity/Available Transfer Capacity Meeting* – This meeting was held in Westminster, Colorado at Tri-States Office’s facility on August 20, 2009 as part of the WestConnect Joint Meeting. The meeting was noticed 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, 2009. The meeting was noticed 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 4, 2009. The meeting was noticed via email distribution lists and posted on the WestConnect website. The main topic for this meeting was the presentation of WestConnect Planning member’s ten year plans, merchant transmission projects and STPG planning activities for 2009 and 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 developers, as this meeting is primarily focused on transmission capacity from market to market. A grouped break out of the meeting participation is shown in **Exhibit 2 and Exhibit 3**.

WESTCONNECT AND REGIONAL PLANNING

Regional planning is important in determining large area coordination planning obstacles and limitations that may not present themselves during more limited transmission system studies. Some example of potential regional planning issues would be seams transmission issues and interstate transmission projects that traverse multiple STPGs.

COORDINATION WITH NEIGHBORING SUBREGIONAL PLANNING GROUPS

Coordination with neighboring SPGs 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, case scheduling and consistency with work products are some of the items addressed through coordination with neighboring subregional planning groups.

WestConnect has participated in the Subregional Planning Coordination Group (SCG) which is a planning group within Western Electricity Coordinating Council (WECC). The purpose of the Subregional Planning Coordination Group (SCG) is to develop an interconnection-wide 10-year transmission plan. The plan will integrate the plans of the individual Subregional Planning Group (SPGs) and may account for information from other transmission planning entities. The SCG will perform their work consistent with the planning principles as adopted by the individual SPGs and Transmission Expansion Planning and Policy Committee (TEPPC) in their respective charters. The SCG meets at a minimum of four times per year. The planning areas for each of the current SPGs within the SCG planning group and their relationship to WestConnect are shown in **Figure 5** below.



Figure 6 WECC Subregional Planning Groups

WECC TRANSMISSION EXPANSION PLANNING POLICY COMMITTEE

TEPPC was formally established as a WECC board committee in April of 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. TEPPC 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 needs by undertaking three primary functions during the 2007 through 2009 study timeframe¹⁷:

- *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 6** shows the interface between TEPPC and subregional planning groups.

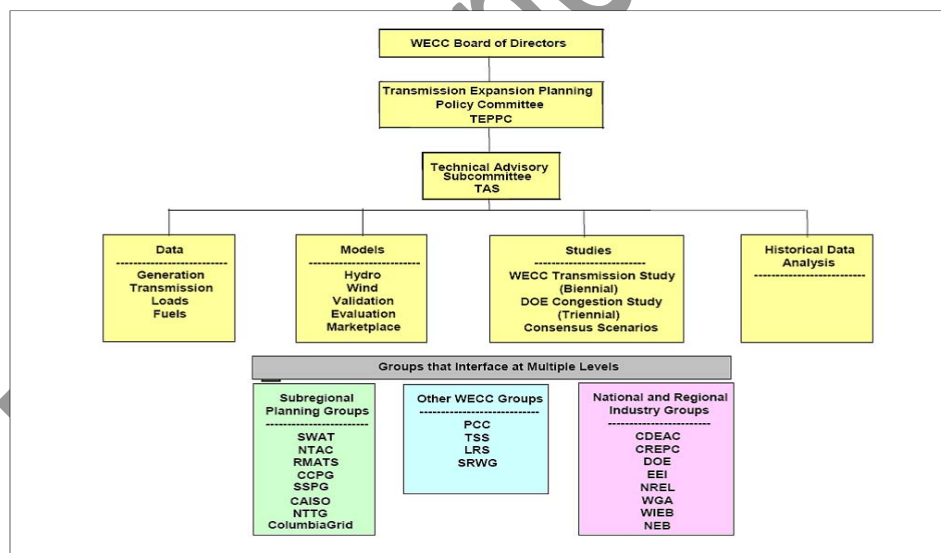


Figure 7 - TEPPC Interface Diagram

¹⁷ TEPPC Work Plan 2007-2009, available at - <http://www.wecc.biz/modules.php?op=modload&name=Downloads&file=index&req=viewsdownload&sid=172>

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 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 yearly on November 1 and concluding January 31 as depicted in **Exhibit 10**. WestConnect requested that TEPPC's 2009 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.¹⁸ WestConnect's study request was consolidated with other similar requests as portfolio cases 5, 6, 7, and 8 in TEPPC's 2009 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 2009 study plan report, expected in the spring of 2009. WestConnect will evaluate the outcome of the 2009 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

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 from the WestConnect planning area. The first and second WestConnect Transmission Plan and report were published in January of 2008, 2009 and the third will be available February 2010 on the WestConnect website.¹⁹

Comment [g4]: Insert hyperlink when available.

¹⁸ <http://www.wecc.biz/documents/library/TEPPC/studies/>

¹⁹ Final 2009 WestConnect Transmission Plan Report - http://westconnect.com/planning_final_report.php

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.²⁰ 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 Initiative²¹ and the President’s Advanced Energy Initiative²². This study will include the WestConnect planning area and the WestConnect Virtual Control area of study. Illustrated in **Exhibit 15** is the WWSIS study footprint.²³

The 2008 WWSIS activities primarily focused on 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.²⁴ The data and results are being re-run and will be integrated into the current work product.

In 2009 the NREL WWSIS included the various study related tasks and stakeholder meetings as described below:

- Statistical Analysis: Baseline Scenario In-Area Scenario with 10%, 20%, 30%
- Validate QSS with results from CEC Study.
- MAPS Analysis: Baseline Scenario In-Area Scenario with 30% Wind

²⁰ The California Energy Commission recently completed their own renewable integration study

²¹ Western Governor’s Clean and Diversified Energy Initiative requires 30 giga-watts (“GW”) of clean energy by 2015

²² President’s Advanced Energy Initiative²² which allows for wind to supply up to 20% of US electricity consumption

²³ NREL Western Wind and Solar Integration Study SWAT Meeting Oct 30-Nov 1,2007

²⁴ The revised will dataset is available at <http://www.nrel.gov/wind/westernwind/>

- Site Selection and Wind/Solar Profile Development for: Mega-Project Scenario and Local Priority Scenario
- March 2009 Stakeholder Meeting (Conference Call with WEBEX)
- Preliminary QSS Analysis
- Analyze Mega-Project and Local Priority Scenarios Statistics, MAPS, QSS
- Develop plan for additional analysis
- July 2009 Stakeholder Meeting
- Additional Scenarios and Analysis Statics, MAPS, QSS
- December 2009 Daft Report

Moving forward into 2010 a stakeholder meeting will be scheduled for the first quarter in 2010 with the primary focus will be to present the final report.

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 2009 STPG planning activities, 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 2009. 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 – February). 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 2009 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 is comprised of transmission regulators/governmental entities, transmission users, transmission owners, transmission operators and environmental entities in the CCPG footprint. The CCPG footprint incorporates all of Colorado and portions of Wyoming and Kansas as illustrated in **Figure 2**. The goal of CCPG is to promote subregional planning in the Rocky Mountain Region including reliability assessments and developing joint business opportunities through coordinated planning under the single-system planning methodology. CCPG was also formed with the intent to develop an efficient non-duplicative transmission system, provide transmission access to non-owners such as municipals that are served by the interconnected system, and to control transmission market power. 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.²⁵ A more detailed description of CCPG is available in **Exhibit 8**.

During 2009, CCPG remained actively involved the transmission planning process by hosting subregional transmission planning meetings, through attendance and participation in WestConnect transmission planning events. CCPG actively coordinated and participated in the following activities during 2009, as described below:

- *Sub-subregional Study Work* – CCPG continues to support study work for projects and areas within the CCPG planning area.
- *CCPG Charter Drafting* – CCPG, working with SWAT, drafted early forms of a Charter describing roles and responsibilities of CCPG as a STPG
- *SCG Formation*
- *Working Groups:*
 - *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.
 - NERC Compliance
 - Senate Bill 100
 - Long Range (10-Year) Planning
- Subcommittee (Sub-subregional) Studies

²⁵ CCPG website on WestConnect - http://westconnect.com/planning_ccpg.php

- *Regional Project Participation* – CCPG remains active in regional project development and study work including TransWest Express, High Plains Express and other regional projects.

CCPG acts as an oversight committee for the studies within the CCPG planning area. The actual study work is performed by a study group or entity assigned to the task under CCPG’s direction. CCPG provides the opportunity to provide updates and feedback through 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.

CCPG Charter Development

CCPG adopted the SWAT Charter as a starting point for the development of the CCPG Charter with the addition of terms from CCPG founding documents. The document went through a detailed open review including all CCPG participants and stakeholders. The final draft was completed and approved by CCPG at the August 20, 2009 meeting in Denver.

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 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 including load flow, transient stability and voltage stability analyzes. Additionally, this study performed the Reactive Margin analysis required to meet WECC requirements.

During the 2009 study year, the CCPG planning group with Basin Electric Power Company as the project lead conducted a NERC Compliance study which has a completion date scheduled for the end of 2009.

The CCPG NERC Compliance study is an on-going yearly study of the CCPG planning area transmission system. In 2010, a similar reporting effort will occur for the corresponding near term (five year timeframe) and far term (ten term timeframe) transmission systems.

Colorado Long Range Transmission Planning Study

CCPG Long Range Transmission Planning is a study led by Tri-State Generation and Transmission Association (“TSG&T”) with the purpose of developing ten-year transmission plans (2018 Models), considering renewable portfolio standards (“RPS”) including renewable penetration of up to thirty percent and re-evaluating the Eastern

Plains Transmission Project. The most recent CCPG planning area long range study, prior to this 2009 study, was the CCPG Long Range Transmission Planning Effort that occurred in 2005.²⁶

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, 2008.²⁷

During 2009, the CCPG Long Range Transmission Planning study started the Lamar-Front Range Project Studies and combined its study efforts with the Senate Bill 100 study efforts.

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.²⁸ 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 Certificate of Public Convenience and Necessity (“CPCN”) to the CPUC for simultaneous review.

²⁶ The Final 2005 CCPG Long Range Transmission Planning Report is available through the Tri-State Generation and Transmission OASIS website at <http://www.oatioasis.com/tsgt/index.html> or directly through http://www.oatioasis.com/TSGT/TSGTdocs/CLRTP_FINAL_REPORT_42704.pdf

²⁷ Colorado Long Range Transmission Planning Group 2009 Study Progress Presentation, June 10, 2008 located at http://www.oatioasis.com/TSGT/TSGTdocs/CLRTPG_6-10-08a.pdf

²⁸ Colorado Senate Bill SB 07-100, codified at C.R.S. § 40-2-126.

The Clean Energy Development Authority²⁹ (“CEDA”) was charged with developing a three year plan to accomplish the mandates of Colorado Senate Bill 100.

During 2008 open meetings were held approximately every two weeks and noticed through Xcel Energy Senate Bill 100 website.³⁰ The Senate Bill 100 Meetings were open to stakeholder participation and involvement.³¹ The 2008 Senate Bill Activities have included participating in transmission planning groups, issuing study plans based upon results and preparing CPCN studies.

The Senate Bill 100 study plan for 2008 included completion of the Senate Bill 100 mandates. These activities included preparing and finalizing any CPCN studies not completed in 2008 by January 2009, filing the CPCN applications in first quarter of 2009, and filing the transmission system plans at the beginning of the fourth quarter of 2009. The final information report³² was posted on the Senate Bill 100 website on November 28, 2008 and includes the designation of five renewable energy zones and eight projects to deliver the resources to load pockets. These transmission plans are documented the companion *2009 WestConnect Transmission Plan Appendix* for the Public Service Company of Colorado.

Regional Project Participation

During the 2009 study year, CCPG participation in the three regional projects:

- Tot 3 Archer Interconnect Project which is currently in the phase 2 study process
- Wyoming – Colorado Intertie which completed it’s open season and has entered into the Phase 2 study process
- High Plains Express Transmission Project (HPX)³³ which is in Stage 2 of its studies and regional planning process. HPX held a Stakeholder meeting in April of 2009.

²⁹ Clean Energy Development Authority - <http://www.colorado.gov/energy/utilities/clean-energy-development-authority.asp>

³⁰ Xcel Energy Senate Bill 100 webpage - http://www.rmao.com/wtpp/SB100_2009.html

³¹ A full listing of the Senate Bill 100 participation at <http://www.rmao.com/wtpp/Sb100/Stakeholders%20E-Mail%20List%20Revised%204-08-2009.pdf>

³² *Senate Bill 100 Designation of Energy Resource Zones and Transmission Planning Informational Report*, November 28, 2009 located at <http://www.rmao.com/wtpp/Sb100/SB-100%20Informational%20Report%20Final.pdf>

³³ High Plains Express (HPX): http://www.rmao.com/wtpp/HPX_Studies.html

WECC Base Case Area Coordination Work Group

The CCPG Area Coordination work group was formed to address issues associated with preparation of cases for the WECC Annual Study Program as the Rocky Mountain Area Coordinator. This process has been lead by PSCo with an ongoing status.

SIERRA SUBREGIONAL PLANNING GROUP

SSPG 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 8**. 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.³⁴

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 with good stakeholder involvement and offered a number of informative transmission planning related presentations. During 2008 SSPG will work with stakeholders to define study needs and establish working group to accomplish the defined study needs within the planning area.

During 2009, SSPG remained actively involved the transmission planning process by hosting subregional transmission planning meetings, through attendance and participation in WestConnect transmission planning events. SSPG actively coordinated and participated in the following activities during 2009, as described below:

- February 9th, 2009 Stakeholders meeting
- Requested and was granted TEPPC Membership
- Working on the formation of the Subregional Planning Group-Coordination Group (SCG) and their relationship and responsibility to TEPPC
- SSPG 2009 Study

³⁴ SWAT website on WestConnect - http://westconnect.com/planning_sierra.php

SOUTHWESTERN AREA TRANSMISSION

SWAT is comprised of transmission regulators/governmental entities, transmission users, transmission owners, transmission operators and environmental entities in the SWAT planning area. The SWAT planning area consists of all or portions of Arizona, California, Nevada and Texas as illustrated in **Figure 8**. The goal of SWAT is to promote subregional planning in the Desert Southwest through quarterly open meetings and involvement in subregional planning events. The SWAT subregional 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 these subcommittees and the SWAT Oversight Committee, on the WestConnect website. SWAT subcommittees' meeting notices, notes, presentations and reports are posted on their respective web pages. A more detailed description of SWAT is available in **Exhibit 8**.

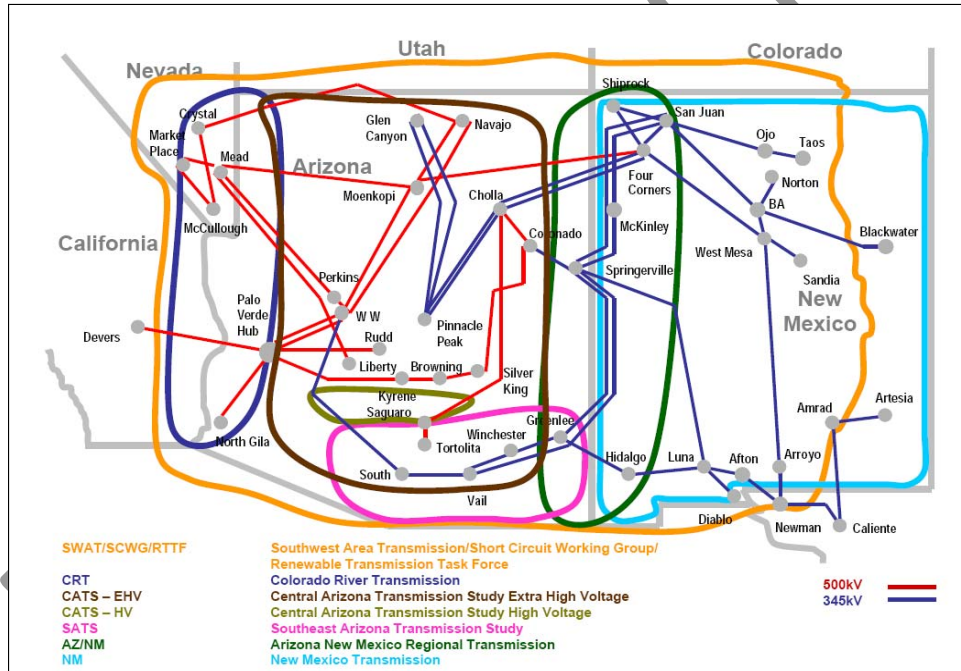


Figure 8 – SWAT Subcommittee Study Areas

During 2009 SWAT remained actively involved in the transmission planning process. SWAT activities during the 2009 year included monitoring of the subcommittee's study efforts, creation and monitoring of the Common Corridor Structure Separation Task Force ("CCSSTF"), review and comment on the draft Arizona Biennial

Transmission Assessment. During 2009 the following three new working groups were formed SWAT finalized and approved their Charter on May 20th, 2009. The final approved SWAT Charter is posted on the WestConnect website.³⁵ An overview breakout of SWAT's involvement in regional planning activities is included as **Exhibit 18**.

SWAT does not directly perform any of the studies, the study work is performed by a study group or subcommittee assigned to the task under SWAT's direction and oversight. SWAT provides the opportunity to provide updates and feedback through participation in these 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

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 8**. This subcommittee 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 9**.

During 2009, AZ/NM subcommittee concentrated on the work which was done under the Renewable Energy Transmission Task Force (RTTF) and will be discussed in the RTTF section of this report. Moving forward into the 2010 study year the RTTF group will be converted to the subcommittee level and AZ/NM group will be absorbed into the RTTF subcommittee.

Central Arizona EHV Subcommittee

The Central Arizona Transmission Study – High Voltage ("CATS-EHV") subcommittee is a SWAT study group responsible for 345kV - 500kV transmission planning for a majority of central Arizona, with the exception of the Palo Verde hub as displayed graphically in brown on **Figure 8**. A more detailed description of the CATS-EHV subcommittee is available in **Exhibit 9**.

During 2009, CATS-EHV held open stakeholder meetings that were noticed via email and the WestConnect website. A breakout of CATS-EHV stakeholder planning activities is included as **Exhibit 18**. Additionally, the materials for these meeting were posted for review following the meetings, also on the WestConnect website.

³⁵ Southwest Area Transmission Subregional Planning Group Charter

<http://www.westconnect.com/filestorage/SWAT%20Charter%20Approved%20Final%205-20-09.pdf>

CATS-EHV during the 2009 completed the Arizona Corporation Commission (“ACC”) Biennial Transmission Assessment (“BTA”) requirements. The ACC BTA requirements included a tenth year snapshot study which was completed and the final report approved on August 4th, 2009. 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. The CATS-EHV 2009 Ten Year Snapshot Study Report is posted on the WestConnect website.³⁶

The CATS- EHV group has not finalized its study plans for 2010 study year. There are three study plans under consideration for the 2010 time frame. The first study plan under consideration is a 2050 load Scenario Study. The CATS EHV membership has proposed to study the way the transmission system might look to serve Arizona’s load in the year 2050. It is estimated this will be a two-year study. The first year would be definition of loads and growth and possible transmission and resource options with the second year modeling the transmission and performing thermal screening of the transmission options. The second study option under consideration is a Renewable Resource Study (Addition of Renewable Resource Projects and Transmission identified by the ARRTIS group). The purpose of this study is to evaluate the impact on the existing transmission system due to addition of transmission and generation identified in by Arizona Renewable Resource and Transmission Identification Subcommittee (ARRTIS) and upgrades to transmission in response to the Western RFI/TIP projects. The third study option under consideration is a Stability study to evaluate the stability impact at the Palo Verde Hub due to large renewable resource penetration. The CATS-EHV Study plans are posted on the WestConnect website³⁷

Central Arizona HV Subcommittee

³⁶ CATS-EHV 2009 Ten Year Snapshot Study

http://www.westconnect.com/filestorage/BTA_2009_REV_4_08-04-09_FINAL.pdf

³⁷ CATS-EHV 2010 Draft Study Plans

http://www.westconnect.com/filestorage/CATS-EHV/study_plan_2010_DRAFT2_2050_LOAD.doc

http://www.westconnect.com/filestorage/CATS-EHV_study_plan_2010_DRAFT_RENEWABLES.doc

http://www.westconnect.com/filestorage/CATS-EHV_study_plan_2010_DRAFT_STABILITY_r1.doc

The Central Arizona Transmission Study –High Voltage (“CATS-HV”) subcommittee is the SWAT study group responsible for the 115 kV - 230 kV transmission systems in central Arizona, specifically Pinal County, as displayed graphically in light green on **Figure 8**. A more detailed description of the CATS-HV subcommittee is available in **Exhibit 9**.

During 2009, CATS-HV held open stakeholder meetings that were noticed via email and the WestConnect website. A breakout of CATS-HV stakeholder planning activities is included as **Exhibit 18**. Additionally, the materials for these meetings were posted for review following the meetings, also on the WestConnect website. The CATS-HV study plan for 2009 identified two key issues for review as a component of the 2009 CATS HV study plan. An assessment of the proposed facilities within the CATS HV footprint (including the detailed 69kV system) for the Ten-Year Transmission Plan and better coordination of the transmission plans with the jurisdictions land use plans located within the CATS HV area. During 2009, the study activities for CATS-HV included three primary tasks:

- *Task 1* - Prepare a coordinated Ten-Year Transmission Plan (specifically 2019) for the CATS HV study area to be included in the 2009 SWAT Transmission Plan.
- *Task 2* - Coordination of the CATS HV regional transmission plans with the jurisdictional land use and comprehensive plans located within the CATS HV area.
- *Task 3* - Document in a Final Report to be included in the 2009 WestConnect Planning Report.

A final report was approved in August of 2009. The complete 2009 CATS-HV study report is posted on the WestConnect website.³⁸

Moving forward into the 2010 study year the CATS-HV subcommittee will be consolidated with the CATS-EHV subcommittee.

³⁸ CATS-HV 2009 Study Report is available at - http://www.westconnect.com/filestorage/CATSHV_2009_REPORT_FINAL_081809.pdf

Colorado River Transmission Subcommittee

The Colorado River Transmission subcommittee (“CRT”) is the 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 8**. 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 9**.

During 2009, CRT held multiple open stakeholder meetings that were noticed via email and the WestConnect website. A breakout of CRT stakeholder planning activities is included as **Exhibit 18**. Additionally, the materials for these meetings were posted for review following the meetings, also on the WestConnect website.

The Colorado River Transmission Subcommittee for the 2009 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 2009:

- Devers/Palo Verde No. 2
- Palo Verde Hub/North Gila No. 2
- Unisource - Mohave County Upgrades
- Harcuvar Project
- El Dorado Valley
- RMR Studies for Yuma County
- RMR Studies for Mohave County

During 2009 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”)³⁹. The CRT developed a number of potential interconnection options, including transmission access for renewable generation projects to the California market. The BTA RMR studies for Yuma and Mohave Counties were conducted under the CRT guidance and review in an open and transparent environment for all Stakeholders

During the 2010 study year the CRT will continue to be active in the El Dorado Valley and Western’s Transmission Infrastructure Program (TIP & WARP).

³⁹ The Harcuvar Transmission Project (“HTP”) is discussed in detail in *Interstate, Market and Merchant Transmission and Generation* Section of the 2009 WestConnect Plan Report

New Mexico Study Group

The New Mexico subcommittee is the SWAT study group responsible for the transmission systems for all of New Mexico as displayed graphically in light blue on **Figure 8**. The New Mexico and AZ/NM subcommittees planning areas overlap and work in a coordinated fashion. A more detailed description of the NM subcommittee is available in **Exhibit 9**.

During 2009, the New Mexico subcommittee held multiple open stakeholder meetings that were noticed via email and the WestConnect website. A breakout of New Mexico stakeholder planning activities is included as **Exhibit 18**. Additionally, the materials for these meetings were posted for review following the meetings, also on the WestConnect website. During the 2009 study year, the New Mexico subregional planning group focused its study efforts through Renewable Transmission Task Force and continued to study the New Mexico Wind Collector and integration system.

The New Mexico subcommittee plans to hold a Meeting in January 2010 to refine potential study efforts for the 2010 study year.

Southeastern Arizona Transmission Study Group

The Southeastern Arizona Transmission Study ("SATS") is the 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 8**. A more detailed description of the SATS subcommittee is available in **Exhibit 9**.

During 2009, SATS held multiple open stakeholder meetings that were noticed via email and the WestConnect website. A breakout of SATS stakeholder planning activities is included as **Exhibit 18**. Additionally, the materials for these meetings were posted for review following the meetings, also on the WestConnect website. The primary objective of SATS during 2009 was to focus on a SATS ten year plan to include year 1 through 5 and year 10. A work plan to achieve this objective was jointly developed by the entire group of participants. The draft SATS report was released to WestConnect for review and comment on December 12, 2007. The following list of study objectives were completed during the 2009 study time frame:

- Present Plan and subsequent findings to SWAT, WestConnect and local Stakeholders.

- Revised load forecast
- Engage SATS in early base case building to insure accuracy of ten year planning cases.
- Investigate implications of FMI loads in the SATS study footprint.
- Continue Cochise county planning studies to comply with ACC recommendations.

The SATS Final report was to be approved on January 21, 2010. The completed and approved report is post on the WestConnect website.⁴⁰

Comment [gtr5]: Insert new link to SATS Final report when available!

The SATS study group is expected to remain extremely active during 2010 and proposes to study the following generalized topics:

- Investigate alternative configurations to mitigate high flows in the SATS footprint.
- Develop and evaluate alternatives to the two joint Tortolita - North Loop 345kV proposal based on the SPPR Three Terminal proposal.
- Develop and evaluate alternatives for joint SWTC/TEP substation(s) to supply TEP/TRICO loads south of Tucson.
- Conduct studies to accommodate renewable projects.
- Complete capital costs estimates and economic analysis, including losses
- Conduct Scenario Sensitivity analysis, such as load forecast Efficiency, Local Renewable Resources, local and distributed Generation and location of external resources.

Short-Circuit Working Group

The Short Circuit Working Group ("SCWG") is the SWAT study group responsible for the development and maintenance of the short circuit representation of the transmission system in SWAT planning area, as displayed graphically in orange on **Figure 8**. A more detailed description of the SCWG subcommittee is available in **Exhibit 9**.

During 2009, SCWG completed the implementation of the new website on WestConnect⁴¹ for meeting notices and material to be publicly posted. A breakout of SCWG stakeholder planning activities is included as **Exhibit 18**.

⁴⁰ SATS Final Report is available at

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

⁴¹ Short Circuit Working Group ("SCWG") website - http://www.westconnect.com/planning_swat_schw.php

Additionally, SCWG held multiple open stakeholder meetings that were noticed via email and the website. The primary SCWG's goal for the 2009 study year was to incorporate the Southern California utilities systems into the data base with the additions of LADWP and SDG&E. Due to the difficulty of the conversion between 3 Short Circuit Software packages (CAPE, ASPEN, and PSS/E) the group has begun discussions on acquiring outside help to merger the 3 together by developing a common data base that can provide an accurate model in all three formats.

The 2010 study plan for the SCWG will continue to focus on development, improvement and maintenance of the master SCWG model case. Specifically during 2010 the SCWG will perform the following:

- 1st Quarter of 2010: As a group, review work done by consultant and verify work was done within the defined scope. Finalize work and present to SWAT OS Committee at their next meeting.
- 2nd Quarter of 2010: Begin steps to incorporate completed consultant work into SWG's scope of work.
- 3rd Quarter of 2010: Begin maintenance of new completed case.
- 4th Quarter of 2010: Make any final adjustments to the Master Case; Prepare year-end summary for SWAT final meeting; and transition chairman position to APS.
- Throughout the year, we will continue to develop easy-to-use procedures for all current and future participants of the SWAT SCWG

SWAT Renewable Transmission Task Force

The Renewable Transmission Task Force ("RTTF") is the 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 ACC's 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 as displayed graphically in orange on **Figure 8**. A more detailed description of the RTTF subcommittee is available in **Exhibit 9**.

During 2009, the RTTF subcommittee held two open stakeholder meetings that were noticed via email and the WestConnect website. A breakout of RTTF stakeholder planning activities is included as **Exhibit 18**. Additionally,

the materials for these meeting were posted for review following the meetings, also on the WestConnect website.⁴²

For the 2009 study year the Renewable Task Force has developed or completed the following tasks:

- Completed the development of a Single Transmission map with preliminary conceptual transmission options which can be used to support renewable resource development in Arizona.
- In conjunction with the Single Transmission map: Segmented mileage and estimated cost which include Construction and ROW cost were developed for each defined segment.
- Existing interconnection Queues list for APS, SRP, TEP and WAPA were updated and mapped.

Out of the RTTF's 2008 efforts two additional Workgroups were formed: The Arizona Renewable Resource and Transmission Identification Subcommittee (ARRTIS) and the RTTF Finance Subcommittee. Additionally, in 2010 the RTTF will continue to perform reliability studies to determine the feasibility of the conceptual transmission plans established in 2009 and continue to work with stakeholders during relevant review and comment periods.

RTTF Arizona Renewable Resource and Transmission Identification Subcommittee

The Arizona Renewable Resource and Transmission Identification Subcommittee (ARRTIS) were created in January 2009, in response to specific provisions of the Fifth BTA issued by the ACC in Decision #70635. ARRTIS was established as a subcommittee to the RTTF of the SWAT Subregional Planning Group and included participants from electrical utilities renewable developers and numerous other stakeholders.

During 2009, ARRTIS held multiple open stakeholder meetings that were noticed via email and the WestConnect website. The ARRTIS subcommittee convened over a five month process to gather, review and map renewable resource and environmental sensitivity data for the State of Arizona and to provide input and support to the RTTF planning efforts. In September of 2009 the ARRTIS subcommittee completed and submitted a report to the RTTF which documented their work and summarized the subcommittee's efforts to the Renewable Transmission Task Force. The completed and approved report is posted on the WestConnect website.⁴³

⁴² 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

⁴³ Final Report of the Arizona Renewable Resource and Transmission Identification Subcommittee http://www.westconnect.com/filestorage/ARRTIS_Final_Report.pdf

RTTF Finance Subcommittee

The RTTF Finance Subcommittee was created to investigate and recommend methods for financing renewable transmission projects in the state of Arizona. During 2009, the RTTF Finance Subcommittee held four open stakeholder meetings and two utility-sponsored workshops that were noticed via email and the WestConnect website. On October 5, 2009 the RTTF Finance work group completed and submitted a final report to the RTTF and SWAT which documents the work group's activities during the 2009 study year. The completed and approved report is posted on the WestConnect website.⁴⁴

Draft do not Cite

⁴⁴ RTTF Finance Subcommittee Final Report:
http://www.westconnect.com/filestorage/finance_sub_final_report_complete_100509.pdf

PUBLIC POLICY AND REGULATORY CONSIDERATIONS

In 2009 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 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 and in 2009 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 11** 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"). 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.

WestConnect Response

NERC has four applicable transmission planning standards (TPL-1 through TPL-4).⁴⁵ 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.⁴⁶ The WestConnect subregional planning process was also responsive in 2008. The WestConnect 2009 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 2008.⁴⁷ The CCPG subregional planning group also performed a NERC compliance study in 2009 for transmission providers doing business in the state of Colorado.⁴⁸ CCPG's report was presented for public release approval at its December 16th, 2009 meeting. Arizona transmission providers have utilized SWAT subregional planning subcommittees and study groups to perform studies in support of the State of Arizona's statutory requirement for a BTA. The Arizona Corporation Commission approved its *Fifth*

⁴⁵ NERC Reliability Standards are located at - <http://www.nerc.com/page.php?cid=2|20>

⁴⁶ Sacramento Municipal Utility District (SMUD) 2009 Ten Year Plan Report available at - http://www.westconnect.com/filestorage/2009_SMUD_10-Yr_FINAL111808.pdf

⁴⁷ Final Adequacy Report available at - http://www.westconnect.com/planning_reports.php

⁴⁸ CCPG 2009 NERC Compliance Report available at - http://www.westconnect.com/filestorage/2009_CCPG_Compliance_Report_Final.pdf

Biennial Transmission Assessment 2009-2017 on December 3, 2009⁴⁹. That report is founded upon extensive SWAT study efforts in 2007 and 2009. 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

Comment [gtr6]: ADD a paragraph addressing the FERC Conference/Webinar held in January 2009

In February 2007 FERC amended its regulations and the *pro forma* open access transmission tariff (*pro forma* OATT)⁵⁰, 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 Report⁵¹ 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 website⁵² 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:

⁴⁹ *Arizona Fifth Biennial Transmission Assessment 2009-2017* located at -

http://www.cc.state.az.us/Divisions/Utilities/Electric/Biennial/2009%20BTA/BTA%20Report%202009%2010_14_08.pdf

⁵⁰ *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).

⁵¹ *2007 Final WestConnect Planning Report* located at -

http://www.westconnect.com/filestorage/WestConnect_Planning_Report_FINAL.pdf

⁵² 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 October 15, 2008.

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 9, 2008. An 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 posted transmission providers' FERC 890 Attachment K local stakeholder planning meeting notices on the WestConnect website during 2009.⁵³ 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.⁵⁴ During 2009, WestConnect noticed eight FERC 890 stakeholder meetings, four of which were stakeholder meetings involving two utilities. **Table 4** below summarizes the local stakeholder meetings noticed on the WestConnect website⁵⁵:

⁵³ Regulatory and Governmental Planning Matters found at <http://westconnect.com/planning.php>

⁵⁴ FERC Order 890 Stakeholder notices, agenda and materials are posted on WestConnect's website at http://www.westconnect.com/documents_results.php?categoryid=85

⁵⁵ All stakeholder meetings were done in cooperation with regional and subregional planning groups.

Utility/Utilities	Meeting Date	Meeting Location	Meeting Date	Meeting Location
<i>Arizona Public Service/Salt River Power</i>	June 9, 2009	Phoenix, Arizona	December 18,2009	Scottsdale, Arizona
<i>Public Service of Colorado</i>	March 6, 2009	Denver, Colorado	December 10, 2009	Denver, Colorado
<i>Public Service of New Mexico</i>	March 5, 2009	Albuquerque, New Mexico	November 5, 2009	Albuquerque, New Mexico
<i>Southwest Transmission Cooperative/Tucson Electric Power</i>	June 4, 2009	Tucson, Arizona	December 10, 2009	Tucson, Arizona

Table 3 –FERC 890 Local Stakeholder Meetings Noticed On WestConnect Website

Table 5 displays the Westconnect Planning Member FERC 890 local stakeholder meetings occurred during 2009 without notices or materials being posted on the WestConnect website⁵⁶:

Utility/Utilities	Meeting Date	Meeting Location	Meeting Date	Meeting Location
<i>Basin Electric Power Cooperative</i>	N/A	N/A	N/A	N/A
<i>Black Hills Power</i>	N/A	N/A	N/A	N/A
<i>El Paso Electric</i>	N/A	N/A	N/A	N/A
<i>Imperial Irrigation District</i>	N/A	N/A	N/A	N/A
<i>Sacramento Municipal Utility District</i>	N/A	N/A	N/A	N/A
<i>Sierra Pacific Resources/Nevada Power</i>	N/A	N/A	N/A	N/A
<i>Transmission Agency of Northern California</i>	N/A	N/A	N/A	N/A
<i>Tri-State Generation and Transmission Association</i>	N/A	N/A	N/A	N/A
<i>Western Area Power Administration-DSW</i>	N/A	N/A	N/A	N/A
<i>Western Area Power Administration-RMR</i>	N/A	N/A	N/A	N/A
<i>Western Area Power Administration-SNR</i>	N/A	N/A	N/A	N/A

Table 4 –Additional WestConnect Planning Member’s FERC 890 Local Stakeholder Meetings

⁵⁶ Ibid.

FERC 890 TECHNICAL CONFERENCE

On June 30, 2009, FERC issued a notice scheduling a technical conference to examine the transmission planning processes that are being conducted pursuant to Order No. 890. As stated in the June 30 notice, these technical conferences are intended to meet the Commission's commitment that its staff would conduct an assessment of the Order No. 890 transmission planning processes. The focus of the 2009 regional technical conferences was: (1) To determine the progress and benefits realized by each transmission provider's transmission planning process, obtain customer and other stakeholder input, and discuss any areas that may need improvement; (2) to examine whether existing transmission planning processes adequately consider needs and solutions on a regional or interconnectionwide basis to ensure adequate and reliable supplies at just and reasonable rates; and (3) to explore whether existing processes are sufficient to meet emerging challenges to the transmission system, such as the development of interregional transmission facilities, the integration of large amounts of location constrained generation, and the interconnection of distributed energy resources. The conference was held on September 3, 2009 in Phoenix Arizona.

WestConnect Response

In response to the FERC notice for the technical conference, WestConnect members participated and provide presentations and comments for the four panel sessions as described below.

- **Panel 1 - Feedback on Current Planning Processes:** FERC seeks information on the effectiveness of the current planning processes and how the current planning processes are working at the local, sub-regional and regional levels
- **Panel 2 – Regional and Inter-regional Planning:** FERC seeks information on the development of regional and inter-region transmission plans.
- **Panel 3 – Cost Allocation:** FERC seeks information on the effectiveness of the existing cost allocation methods currently used by transmission providers, and seeks comment on alternative cost allocation methods.
- **Panel 4 – Examining Coordination and Comparability:** FERC seeks information on the effectiveness of coordination and open communication among transmission providers, their transmission-providing neighbors, affected state authorities, customer and other stakeholder.

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 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.⁵⁷ 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 11**. The DOE also identified Phoenix and Tucson as two of four “Congestion Areas of Concern” where a large-scale 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 2009 planning cycle with a transmission economic expansion study request of TEPPC. WestConnect requested that TEPPC’s 2009 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.⁵⁸ WestConnect’s study request was consolidated with other similar requests as portfolio cases 5, 6, 7, and 8 in TEPPC’s 2009 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 2009 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 2009 TEPPC results available in response to WestConnect’s request.

⁵⁷ **Federal Register** / Vol. 72, No. 193 / Friday, October 5, 2007 / Notices

⁵⁸ <http://www.wecc.biz/documents/library/TEPPC/studies/>

The 2009 WestConnect Transmission Plan includes projects that will increase the WECC Path 49 rating. This path is also known as the 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 2009 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, 2009 WestConnect TTC/ATC Stakeholder meeting.⁵⁹ The 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 2009 study request of TEPPC.

Path Element	Path Rating (MW)	Change (MW)	Date of Change	Improvement
Navajo – Crystal 500 kV	7,550	505	2008	Upgrade series capacitors
Perkins –Mead 500 kV			2008	-
Moenkopi – Eldorado 500 kV			-	
Liberty – Peacock –Mead 345 kV			2006	Upgrade series capacitors
Hassayampa – North Gila 500 kV			2006	Upgrade series capacitors
Palo Verde – Devers 500 kV				
Existing EOR Path Rating	8,055		2006	
	9,300	1245	2009	IID/SDG&E System Upgrades
Palo Verde – North Gila No. 2 500 kV	10,500	1200	2014	New Line – CEC approved by ACC.

Table 5 - 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 2009. 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.⁶⁰ 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

⁵⁹ 2009 TTC/ATC document can be found by searching for “TTC/ATC” at - <http://www.westconnect.com/documents.php>

⁶⁰ Arizona Fifth Biennial Transmission Assessment 2009-2017 located at - http://www.cc.state.az.us/Divisions/Utilities/Electric/Biennial/2009%20BTA/BTA%20Report%202009%2010_14_08.pdf

generation at maximum capacity with associated local operating reserves maintained. When local peak load exceeds the SIL then the ACC requires that 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-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 PEIS in the *Federal Register* on November 28, 2009.⁶¹ 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 12**. 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.⁶²

⁶¹ **Federal Register** / Vol. 73, No. 230 / Friday, November 28, 2009 / Notices

⁶² <http://www.corridoreis.anl.gov/index.cfm>

WestConnect 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.

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 website⁶³ 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, 2009.⁶⁴ The WREZ project goals include providing reliable information

⁶³ Regulatory and Governmental Matters, Correspondence, found at <http://westconnect.com/planning.php>

⁶⁴ Briefing materials at: <http://www.westgov.org/wga/initiatives/wrez/briefing5-28.htm>

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 2009 included activity from the three work groups established for the study work. During 2009 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 2009, the Environment and Lands Work Group (“E&L”) prepared a draft spreadsheet 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 2009, began working on the WREZ Modeling tool and conceptual transmission plans within the study area.⁶⁵

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.

⁶⁵ WGA WREZ Presentation, WestConnect Planning Workshop, November 13, 2009 located at <http://www.westconnect.com/filestorage/LewWestConnect11-08.pdf>

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 BTA in March 2007.⁶⁶ 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 Energy Standard rules, the Western Governors Association's Clean and Diversified Energy Advisory Committee ("CDEAC") report and FERC Order 890. The 2009 SWAT Renewable Transmission Task Force efforts are directed at this ACC BTA requirement. The 2009 SWAT Renewable Transmission Task Force efforts are the evolution of requirement to meet a subregional desire to proactively plan for renewable integration and the required transmission.

In 2009 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, 2009, 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."⁶⁷

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 renewable in Arizona.

⁶⁶ ACC Decision No. 69389

⁶⁷ ACC Docket No. E-00000D-07-0376, Recommended Opinion and Order, <http://images.edocket.azcc.gov/docketpdf/0000090050.pdf>

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.*⁶⁸

WestConnect Response

The Renewable Transmission Task Force (“RTTF”) was established as 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 ACC’s 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 as displayed graphically in orange on **Figure 8**. A more detailed description of the RTTF subcommittee is available in **Exhibit 19**.

During 2009, the RTTF subcommittee held two open stakeholder meetings that were noticed via email and the WestConnect website. A breakout of RTTF stakeholder planning activities is included as **Exhibit 18**. Additionally, the materials for these meeting were posted for review following the meetings, also on the WestConnect website.⁶⁹

For the 2009 study year the Renewable Task Force has developed or completed the following tasks:

- Completed the development of a Single Transmission map with preliminary conceptual transmission options which can be used to support renewable resource development in Arizona.
- In conjunction with the Single Transmission map: Segmented mileage and estimated cost which include Construction and ROW cost were developed for each defined segment.
- Existing interconnection Queues list for APS, SRP, TEP and WAPA were updated and mapped.

⁶⁸ ACC Docket No. E-00000D-07-0376, Amendment 1, <http://images.edocket.azcc.gov/docketpdf/0000091395.pdf>

⁶⁹ 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

Out of the RTTF's 2008 efforts two additional Workgroups were formed: The Arizona Renewable Resource and Transmission Identification Subcommittee (ARRTIS) and the RTTF Finance Subcommittee. Additionally, in 2010 the RTTF will continue to perform reliability studies to determine the feasibility of the conceptual transmission plans established in 2009 and continue to work with stakeholders during relevant review and comment periods.

The Arizona Renewable Resource and Transmission Identification Subcommittee (ARRTIS) were created in January 2009, in response to specific provisions of the Fifth BTA issued by the ACC in Decision #70635. ARRTIS was established as a subcommittee to the RTTF of the SWAT Subregional Planning Group and included participants from electrical utilities renewable developers and numerous other stakeholders.

During 2009, ARRTIS held multiple open stakeholder meetings that were noticed via email and the WestConnect website. The ARRTIS subcommittee convened over a five month process to gather, review and map renewable resource and environmental sensitivity data for the State of Arizona and to provide input and support to the RTTF planning efforts. In September of 2009 the ARRTIS subcommittee completed and submitted a report to the RTTF which documented their work and summarized the subcommittee's efforts to the Renewable Transmission Task Force. The completed and approved report is posted on the WestConnect website.⁷⁰

⁷⁰ Final Report of the Arizona Renewable Resource and Transmission Identification Subcommittee
http://www.westconnect.com/filestorage/ARRTIS_Final_Report.pdf

RTTF Finance Subcommittee

The RTTF Finance Subcommittee was created to investigate and recommend methods for financing renewable transmission projects in the state of Arizona. During 2009, the RTTF Finance Subcommittee held four open stakeholder meetings and two utility-sponsored workshops that were noticed via email and the WestConnect website. On October 5, 2009 the RTTF Finance work group completed and submitted a final report to the RTTF and SWAT which documents the work group's activities during the 2009 study year. The completed and approved report is posted on the WestConnect website.⁷¹

CALIFORNIA RENEWABLE ENERGY TRANSMISSION INITIATIVE

The Renewable Energy Transmission Initiative ("RETI")⁷² 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 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.⁷³ The final report for Phase 1A was submitted on May 16, 2009.⁷⁴

COLORADO ENERGY POLICY

The 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

⁷¹ RTTF Finance Subcommittee Final Report:

http://www.westconnect.com/filestorage/finance_sub_final_report_complete_100509.pdf

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

⁷³ <http://www.energy.ca.gov/reti/index.html>

⁷⁴ <http://www.energy.ca.gov/2009publications/RETI-1000-2009-002/RETI-1000-2009-002-F.PDF>

and SWAT accepted the CPUC's invitation to participate as panelists at the informational meeting. Senate Bill 100 was among the new legislation considered.⁷⁵ 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.⁷⁶ On November 24, 2009 Public Service Company of Colorado published an informational report in response to the SB 100 requirements.⁷⁷ The report identifies five energy resource zones as depicted on **Exhibit 13**. 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 2009 WestConnect Transmission Plan document.

NEVADA

Renewable Energy Transmission Access Advisory Committee ("RETAAC") was created by Executive Order⁷⁸ of the Governor of Nevada. RETAAC was created because Nevada is a net importer of energy. The purpose of RETAAC⁷⁹ 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

⁷⁵ Colorado Senate Bill, SB 07-100, codified at C.R.S. § 40-2-126.

⁷⁶ Dates and details from the meetings available at - <http://www.rmao.com/wtpp/SB100.html>

⁷⁷ Senate Bill 07-100 Designation of Energy resource Zones and Transmission Planning Report, November 28, 2009. <http://www.rmao.com/wtpp/Sb100/SB-100%20Informational%20Report%20Final.pdf>

⁷⁸ http://gov.state.nv.us/EO/2009/EO-2009-06-12_RETAACII.pdf

⁷⁹ Nevada RETAAC: <http://gov.state.nv.us/Energy/FinalReport.htm>

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.⁸⁰

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,⁸¹ and will focus on electric infrastructure planning financing and development.⁸² 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.

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;

⁸⁰ <http://gov.state.nv.us/Energy/FinalReport/RETAAC%20Phase%20I%20Report.pdf>

⁸¹ 2007 WestConnect Planning Report, page 36

⁸² New Mexico Renewable Energy Transmission Authority: <http://www.nmreta.org/>

- 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.⁸³

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⁸³ <http://www.wvia.org/home.htm>

CONCLUSIONS

The WestConnect planning area encompasses seven states, three subregional planning areas and fifteen Planning Member transmission owners. The 2009 WestConnect Planning report has provided an overview of the planning process, 2009 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 2009 and provide a high level overview of where WestConnect planning considers developing toward in the future.

2009 SUMMARY

2009 marked the third annual WestConnect Planning Report. Transmission planning within the WestConnect planning area continued to grow and improve during 2009. The following summary highlights the planning effort and key results during 2009:

1. Stakeholder involvement increased through improved noticing mechanisms, public policy toward open meetings, FERC 890 requirements, renewable generation developer process interest and focus on “single system” planning methodology.
2. WestConnect’s transmission planning focus remains on reliability system performance with a specific attention being paid to stakeholder input, renewable integration and regional benefits.
3. Renewable Integration study work is continuing on multiple overlapping levels including NREL WWSIS, WGA WREZ, Colorado SB 100 and SWAT Renewable Transmission Task Force.
4. Subregional Planning Groups within WestConnect planning area have developed Charters to provide the framework for future planning activities.
5. 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 through 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. Work to develop processes for identifying potential seams reliability criteria violations in cooperation with neighboring subregional planning areas in support of the TEPPC and SCG working groups.
6. Provide specific recommendation for improvement on document management within the WestConnect website.
7. Work to provide a single TTC/ATC table or map open to stakeholder examination on the website.
8. Work to include existing transmission facilities into the TPM database for all WestConnect entities.

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