



SOUTHWEST TRANSMISSION COOPERATIVE, INC.
PLANS FOR TOP THREE RENEWABLE TRANSMISSION
PROJECTS

In Fulfillment of Arizona Corporation Commission
Fifth Biennial Transmission Assessment Commission Decision
#70635

Docket E-00000A-09-0066

Prepared By

Transmission Planning
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1.0 EXECUTIVE SUMMARY

At an open meeting of the Arizona Corporation Commission (“ACC” or “Commission”) held on December 3, 2008, concerning the Fifth Biennial Transmission Assessment (“BTA”) – pursuant to the Adequacy of Existing and Planned Transmission Facilities to Meet Arizona’s Energy Needs in a Reliable Manner – the Commission issued Order No. 70635. The Order dealt with the need to address a new process to solve the classic “chicken or egg” dilemma facing renewable energy developers in the State seeking to build renewable projects but not having transmission available and utilities being reluctant to build transmission to these renewable energy developers without commitments to build the facilities. The Commission ordered:

“THEREFORE, IT IS ORDERED that the Fifth Biennial Transmission Assessment 2008-2017 is hereby issued as the Commission’s biennial assessment in accordance with A.R.S. §40-360.02.G.

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 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 funding 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.”

IT IS FURTHER ORDERED that Staff recommendations contained herein are hereby adopted by the Commission.

IT IS FURTHER ORDERED that this Order shall become effectively immediately.”

Southwest Transmission Cooperative, Inc. (“SWTC”) has worked with other utilities since the Order was issued in developing its top three Renewable Transmission Projects (“RTP’s”), as required by BTA Order No. 70635. These are listed below and are discussed in greater detail in the body of this report:

1. San Manuel Interconnect Project
2. Apache to Bicknell 230 kV Line Upgrades
3. Western Saguaro to Apache 115 kV Line Upgrade

SWTC feels that, taken together, these three RTP's can easily accommodate the 600 MW of potential renewable solar development identified by the Renewable Transmission Task Force ("RTTF") in Southeast Arizona, and meet the goal of supporting the growth of renewables in Arizona.

SWTC has also coordinated its response to the ACC Order with the other transmission providers in the State to ensure that there is a comprehensive transmission plan.

2.0 INTRODUCTION

Southwest Transmission Cooperative, Inc. ("SWTC") is a nonprofit electric transmission cooperative corporation organized under the generation and transmission electric cooperative laws of the State of Arizona. It does not own any generation or distribution facilities but is engaged wholly in the transmission of electrical energy primarily from Arizona Electric Cooperative, Inc. ("AEPCO") generating resources to six distribution cooperative Class A Members: Anza Electric Cooperative, Inc. ("AEC"), located in Riverside County, California; Duncan Valley Electric Cooperative, Inc. ("DVEC"), located in Duncan, Arizona; Graham County Electric Cooperative, Inc. ("GCEC"), located in Pima, Arizona; Mohave Electric Cooperative, Inc. ("MEC"), located in Bullhead City, Arizona; Sulphur Springs Valley Electric Cooperative, Inc. ("SSVEC"), located in Willcox, Arizona; and Trico Electric Cooperative, Inc. ("TEC"), located in Marana, Arizona.

SWTC has also entered into point-to-point transmission and network transmission service with other entities for deliveries of power and energy through its interconnections with the Arizona Public Service Company ("APS"), Salt River Project ("SRP"), Tucson Electric Power Company ("TEP") and the Western Area Power Administration ("Western").

As a Rural Utilities Service ("RUS") borrower, SWTC is required to follow RUS regulations for all workplan and funding submittals. RUS is the only viable funding mechanism that SWTC can avail itself of for funding for new transmission projects to meet the needs of its six Class A Members.

As an ACC regulated electric utility, SWTC files a ten-year plan each year with the ACC in accordance with the Arizona Revised Statutes ("A.R.S.") §40-360.02.G. These ten-year plans are reviewed biennially by the ACC and SWTC has been involved with activities related to the BTA since its inception.

SWTC is supportive of efforts to build RTP's to meet SWTC's Member System Renewable Energy Standard ("RES") requirement, which is approximately 60 MW. SWTC's existing transmission system can support this amount of resources. It should be noted that SWTC is generally supportive of efforts to build RTP's to not only meet RES, but also for more intra-Arizona use and export to markets. However, SWTC is limited in

its ability to construct RTP's or provide funding for joint utility RTP's, unless a need can be tied directly to the Member Systems, as per RUS regulations. These issues will be discussed in greater detail in the Section on Proposed Funding Mechanisms.

3.0 BTA PROCEDURAL HISTORY

The ACC biennially reviews ten-year plans filed by Commission-regulated utilities and other entities wishing to construct transmission within the State of Arizona.¹ After analyzing the 10-year plans and conducting workshops for stakeholder input, ACC Staff drafts the Biennial Transmission Assessment ("BTA") evaluating the adequacy of existing and planned transmission facilities to reliably meet the present and future needs of the state.² Every two years, the BTA is finalized when approved by a written decision of the Commission.³

The Commission's Fourth BTA Decision ordered that, for the Fifth BTA, Commission-regulated electric utilities should prepare a plan to identify: the renewable resources areas in the state, the amount of available transmission capacity available to deliver the identified renewable resources to load, and the transmission needed to deliver the identified renewable resources in Arizona to load.⁴ To aid in compliance with the Commission's Order, in 2007, the utilities developed the Renewable Transmission Task Force ("RTTF"), as a subcommittee of Southwest Area Transmission ("SWAT")⁵, to identify renewable energy resource areas and the transmission necessary to bring those resources to load centers. Following coordinated efforts between the utilities and stakeholders, SWAT issued the *2007 SWAT Renewable Energy Transmission Task Force Report* identifying the location and a theorized amount of renewable energy development opportunities for several different locations in Arizona, and the transmission lines necessary to bring those resources to load centers.⁶

Following the Fifth BTA, a Decision was issued directing the Commission-regulated utilities to develop plans to identify future renewable transmission projects ("RTPs") and to develop plans and proposed funding mechanisms to construct the top three RTPs in their respective service territories.⁷ In addition, the Commission-regulated utilities were directed to conduct a joint workshop or series of planning meetings to

¹ ARS § 360.02.

² ARS § 360.02(G).

³ Id.

⁴ ACC Decision No. 69389 (March 22, 2007), at 8.

⁵ SWAT is part of a group that handles sub-regional transmission planning in the Southwest. See WestConnect <<http://www.westconnect.com/planning.php>> (last visited August 21, 2009). It is comprised of transmission regulators/governmental entities, transmission users, transmission owners, transmission operators and environmental entities. See WestConnect <http://www.westconnect.com/planning_swat.php> (last visited August 21, 2009).

⁶ See 2007 SWAT Renewable Energy Transmission Task Force Report (filed in Docket No. E-00000D-07-0376, May 15, 2008). The opportunities included wind, solar, biomass, hydro and/or geothermal renewable energy types.

⁷ See ACC Decision No. 70635 (December 11, 2008), at 8-9.

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 energy in Arizona.⁸

The RTTF established the Arizona Renewable Resource and Transmission Identification Subcommittee (“ARRTIS”) to more specifically identify those areas in Arizona with the best potential for renewable generation project development and aid the utilities in their response to the BTA Decision.⁹ The ARRTIS convened a 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 renewable transmission planning efforts.¹⁰ The process identified areas within the state where solar and wind resources were available for utility-scale generation development. The ARRTIS developed resource maps identifying environmental exclusion and sensitivity areas, with an overlay of existing and potential future transmission corridors.¹¹ The RTTF used the information provided by the ARRTIS to identify transmission options that would link the resource areas to the existing transmission system and/or to load pockets within the state or to export markets.¹²

The RTTF also established a Finance Subcommittee to investigate and recommend methods for financing RTPs in Arizona.¹³ Areas of investigation included: developing a working definition for a renewable transmission project; reviewing various project subscription methodologies; developing provisions for recovery of reasonable and prudent costs, including various methods for allocation of both a base and incentive return on equity for development of RTPs; and assessing relevant legislative and regulatory developments. The Finance Subcommittee held several meetings to discuss a range of issues related directly to financing methodologies.¹⁴ It coordinated its efforts with the ARRTIS to provide recommendations to the Commission-regulated electric utilities.¹⁵

4.0 PROJECT SELECTION METHODOLOGY

With a limited ability to construct RTP’s in mind, SWTC began to analyze how it could best comply with the BTA Order No. 70635 and identify its top three RTP’s. The project plans presented below have been shared with other entities in the State through several joint planning meetings.

⁸ Id.

⁹ See WestConnect <http://www.westconnect.com/planning_swat_rtff_artis.php> (last visited August 21, 2009).

¹⁰ See Exhibit A.

¹¹ See *Final Report of the Arizona Renewable Resource and Transmission Identification Subcommittee* (September 2009)

¹² Id.

¹³ See WestConnect <http://www.westconnect.com/planning_swat_rtff_finance.php> (last visited August 21, 2009).

¹⁴ See Exhibit A.

¹⁵ The workshops were ordered by ACC Decision No. 70635.

In the December 11, 2008 BTA Order, the Commissioners express appreciation for the hard work performed by the utilities and the RTTF subcommittees in identifying potential locations and the amount of transmission needed “to support the growth of renewable resources in Arizona.” It is from this perspective that SWTC began to develop a project selection methodology that it feels will meet the goal of supporting “the growth of renewable resources” in Southeast Arizona.

SWTC’s approach to a selection methodology to identify its top three RTP’s is two-fold. First, as renewable resource developers announce intentions to build in Southeast Arizona, SWTC will be contacted by these developers to participate in transmission projects to get the resources to nearby load-centers or export the resources to other load-centers in the State. It should be noted that, at this time, the number of interconnections for renewable resources in Southeast Arizona is not as robust as it is in other areas of the State, even though the RTTF Full Build-out Case Maps¹⁶ show a potential for renewable solar development of 600 MW in Southeast Arizona.

Presently, SWTC is in contact with one entity that has made a request of Arizona Public Service Company (“APS”) to place a renewable resource (#A54, see Exhibit B on Page 24) in the vicinity of a proposed SWTC 115 kV line project that has already been approved by the Commission, to tie to APS facilities near San Manuel, in Southern Pinal County. The designation of this project as an RTP will be discussed in greater detail in the next section, but it is an indicator of what SWTC can do now, in a cost-effective manner, to support the development of renewable resources in the area.

Second, part of SWTC’s back-bone transmission facilities in Southeast Arizona are in need of upgrades within the next ten years, in order to meet NERC reliability standards and to support continued growth in the area. These upgrades will also support the development of renewable resources that could potentially be sited in the area. Recent advances in conductor types that support much higher amperage ratings are being considered by SWTC for these upgrades. These conductor types are known in the industry as Aluminum Conductor Steel Supported (“ACSS”), Aluminum Composite Core Conductor (“ACCC”), and Aluminum Conductor Composite Reinforced (“ACCR”) to name a few. SWTC is proposing to upgrade its Apache to Bicknell 230 kV line using one of these higher-rated conductors.

On March 4, 2009, the Western Area Power Administration (“Western”) proposed through the Federal Register to adopt a Transmission Infrastructures Program (“TIP”) to implement Section 402 of the American Recovery and Reinvestment Act of 2009 (“Recovery Act”)¹⁷ “for the purpose of constructing, financing, facilitating, planning, operating, and maintaining, or studying construction of new or upgraded electric power transmission lines and related facilities . . . for delivering or facilitating the delivery of power generated by renewable energy resources constructed or reasonably expected to be constructed.” Western also issued on this same date a Request for Interest (“RFI”) “from any entity or entities interested in identifying a proposed transmission project, primarily

¹⁶ SWAT Renewable Transmission Task Force Presentation, August 12, 2008.

¹⁷ See Federal Register, /Vol. 74, No. 41/ Wednesday, March 4, 2009/Notices.

in Western's service area, and/or desiring to participate with Western and possibly others by financing, constructing or owning facilities or acquiring transmission rights or entering into long-term transmission service agreements on that project." Entities wanting to identify a proposed transmission project in response to this RFI were asked to submit a Statement of Interest ("SOI") to that effect by April 3, 2009.

On April 3, 2009, SWTC, along with other utilities in the State, submitted an SOI in support of upgrading various transmission lines within Western's service area. In Southeast Arizona, SWTC and TEP identified the upgrade of Western's Saguaro to Apache 115 kV line to a double-circuit 230 kV line as a candidate for the TIP. This upgrade is in line with SWTC's second approach to a project selection methodology, as it upgrades a significant backbone 115 kV system in the area that has a large potential to support the growth of renewable resources in Southeast Arizona. It also satisfies the goals of the Western TIP Program which are "to identify, prioritize and participate in the study, facilitation, financing, planning, operating, maintaining, and construction of new or upgraded transmission facilities and additions that will help bring renewable energy resources to market across the West."¹⁸

As more renewable resources become sited in Southeast Arizona in the coming years, it will be necessary to look at larger transmission projects to enable the resources to get to local load-centers and other markets throughout the State or for export to other States, beyond what the existing system or upgrades to the existing system can provide. The work that has been done in the ARRTIS subcommittee of the RTTF will provide an excellent road map for informing planning studies to determine where these transmission lines will need to be sited (see Exhibit C on Page 25). As noted in the Final ARRTIS Report, "The final maps and information are not intended to be used for project-specific siting or approvals. The work products will be useful to the Arizona electric utilities, but also to project developers, policy makers, conservationists, and those interested in renewable energy development."¹⁹

SWTC will continue to be involved in and will support the efforts of the RTTF subcommittees to meet the Commission's goals as outlined in BTA Order No. 70635 and in subsequent BTA Orders.

¹⁸ Id.

¹⁹ Final Report of the Arizona Renewable Resource and Transmission Identification Subcommittee, September 2009, p. 24.

5.0 TOP THREE PROJECTS

The Top Three Renewable Transmission Projects that SWTC is proposing to meet this BTA Order are:

- San Manuel Interconnect Project
- Apache to Bicknell 230 kV Line Upgrade Project
- Western Saguaro to Apache 115 kV Line Upgrade Project

SWTC believes each of these proposed projects will meet the goal of supporting the growth of renewables in Southeast Arizona and collectively can easily accommodate the potential for renewable solar development of 600 MW as identified by the RTTF.

Figure 1 below depicts the EHV and Local Area Transmission System as studied in the Southeast Arizona Transmission System (“SATS”) Study Group.

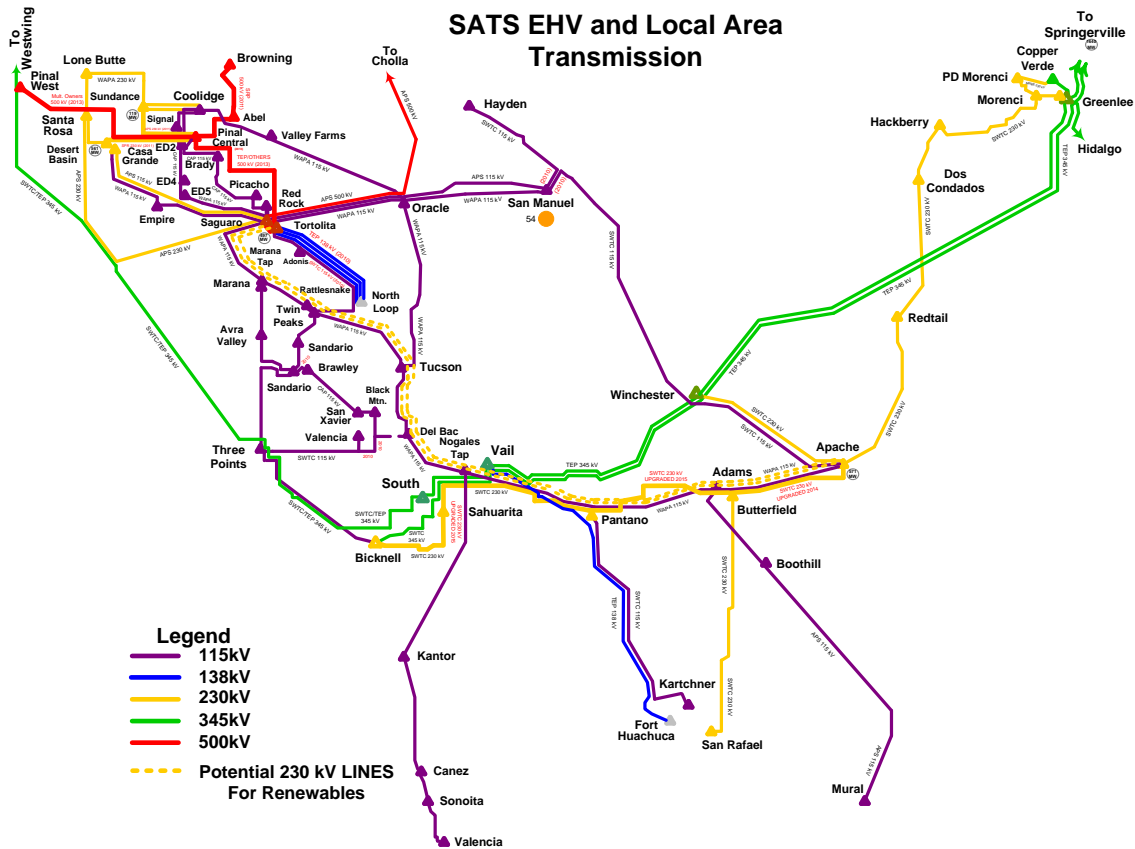


Figure 1

The Extra High Voltage (“EHV”) system, shown in green in Figure 1 above, is predominantly owned by TEP, and is a 345 kV system that originates in Springerville and extends to Westwing. SWTC is part-owner of the portion of the 345 kV line that extends from Vail to Pinal West to Westwing. SWTC’s High Voltage (“HV” or “Local Area”) system consists of 230 kV and 115 kV facilities. The 230 kV facilities, shown in yellow on the map, are a back-bone system extending from Greenlee to Bicknell. The 115 kV facilities, shown in purple on the map, extend from Bicknell to Marana Tap. SWTC also owns a 115 kV system extending from Apache to the Salt River Project (“SRP”) Hayden Substation. Both TEP and SWTC are part owners of a portion of the Southeast Valley 500 kV line, shown in red in Figure 1, which extends from the Palo Verde Hassayampa Switchyard to Pinal West and are also part owners of the portion proposed for extension from Pinal West to Pinal Central in 2013. Various facilities owned by APS and SRP are also shown in Figure 1.

As can be seen, there is only one renewable resource project that is currently in the active generator queue listing which is shown in Figure 1 as an orange dot, labeled A54, located near San Manuel, Arizona. Other projects have been in previous queue listings, but have been withdrawn for various reasons.

While each of SWTC’s Top Three Renewable Transmission Projects is depicted in Figure 1 above, a larger representation of each Project will be shown below, along with a detailed discussion of each Project.

5.1 SAN MANUEL INTERCONNECT PROJECT

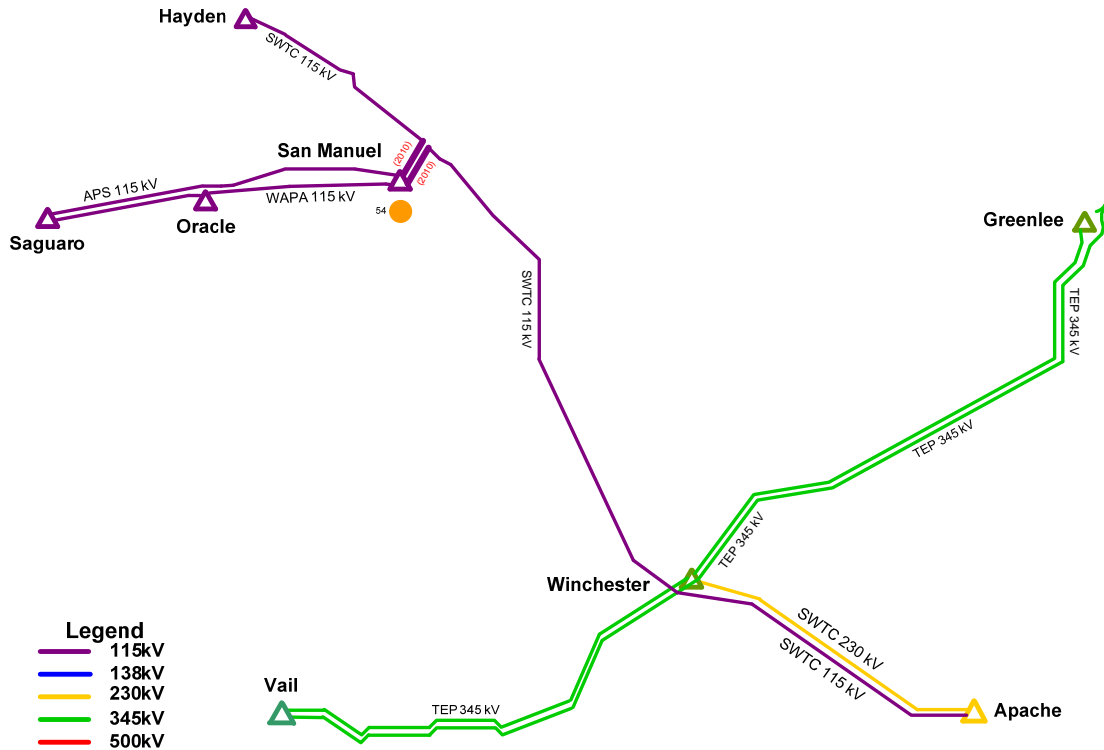


Figure 2

Figure 2 depicts the San Manuel Interconnect Project in bolded purple. The Project involves interconnecting the SWTC Apache to Hayden 115 kV line into the APS San Manuel Substation.

The Project is “shovel-ready,” having been approved by the ACC Line Siting Committee on May 12, 2009 (Case #142), and was approved by the Commission on July 9, 2009. At this time, construction has not been scheduled for this project, which will be deferred beyond the expected in-service date of May 2010. The reasons for this deferral are due to declining revenues and other factors.

Total estimated cost of the San Manuel Interconnect Project is \$4,201,359. The economic impact to SWTC’s ratepayers, when the line is placed into service, is expected to be minimal.

The 115 kV tie-in to San Manuel will be constructed to 230 kV standards but will be operated at 115 kV. As it currently stands, the project will be able to accommodate approximately 240 MW from the renewable generation (A54) proposed for location near San Manuel. SWTC is willing to work with third-party entities to upgrade the 115 kV line to allow for additional export of renewable energy to markets from this site.

5.2 APACHE TO BICKNELL 230 kV LINE UPGRADE PROJECT

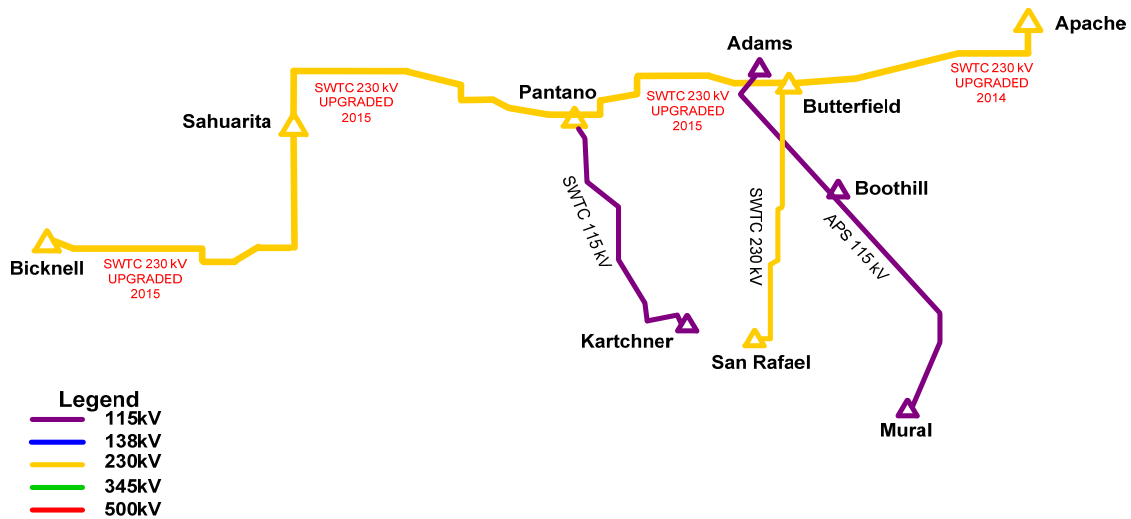


Figure 3

Figure 3 depicts the Apache to Bicknell 230 kV Line Upgrade Project, in bolded yellow. The Project involves upgrading the existing 795 ACSR conductor of this 230 kV line to a higher-ampacity rated conductor, to meet NERC Reliability Standards and support continued growth in the area.

This project is a slight variation of the one briefly discussed in SWTC's 2009-2018 ten-year plan filing to the Commission. SWTC is considering, as noted in the Section on Project Selection Methodology, the use of a higher-ampacity rated conductor for this upgrade. This difference will be noted in SWTC's 2010-2019 ten-year plan filing in January 2010.

There are two segments of this 230 kV line that are scheduled for upgrade. SWTC's 2009-2018 ACC ten-year plan showed that the first segment, Apache to Butterfield, is tentatively slated for upgrade in 2014. The second segment, Butterfield to Bicknell, is tentatively shown as being slated for upgrade in 2015. It should be noted that the need for this project may also be deferred due to declining revenues and other factors.

This project is also "shovel-ready" as it lies in an existing Right-of-Way ("ROW") and there would be few environmental impacts to the new construction. The total estimated cost of the project is approximately \$19,600,000. SWTC would need to develop a specific loan package for RUS to fund this project and the economic impact to SWTC's ratepayers would be substantial, as discussed in the next Section.

The upgrade of this 230 kV line could provide up to an additional 450 MW that would support renewable generation in the area. SWTC is willing to work with third-party entities to allow for interconnections to the upgraded segments of line for export of renewable energy to markets.

Several considerations of late have been discussed with regards to the potential upgrade of this 230 kV line. With the current economic slowdown, SWTC has been studying efforts to re-rate all of its transmission line ratings and defer significant projects that have been proposed for inclusion into upcoming Construction Work Plans (“CWP’s”). The transmission line ratings currently in use are very conservative and could feasibly be increased to defer major capital expenditures. In any case, a re-rate of the Apache to Bicknell 230 kV line would help in the near term time frame (1-5 years), but would need to be re-evaluated in the longer term time frame (6-10 years). Requests from renewable developers to use this 230 kV line could accelerate the need to upgrade this line sooner than the tentative in-service dates. If it is determined to be more cost effective in the near term to re-rate this project, this difference will be noted in SWTC’s 2010-2019 ten-year plan filing in January 2010.

5.3 WESTERN SAGUARO TO APACHE 115 kV LINE UPGRADE PROJECT

Figure 4 below depicts the upgrade of the Western Saguario to Apache 115 kV line to a new double-circuit 230 kV line, in dashed yellow. An upgrade of this line is contained in Western’s long range plans, but it is not a current project in any Western financial plans.

As noted earlier, SWTC and TEP proposed that this project be considered for the Western TIP funding and issued a Statement of Interest or SOI for the project. A projected in-service date for the project was not provided in the SOI, but as noted in the SOI, “the primary benefit of this RTP is that it may be implemented in time to accommodate new renewable energy projects as they come on line within two to five years.”

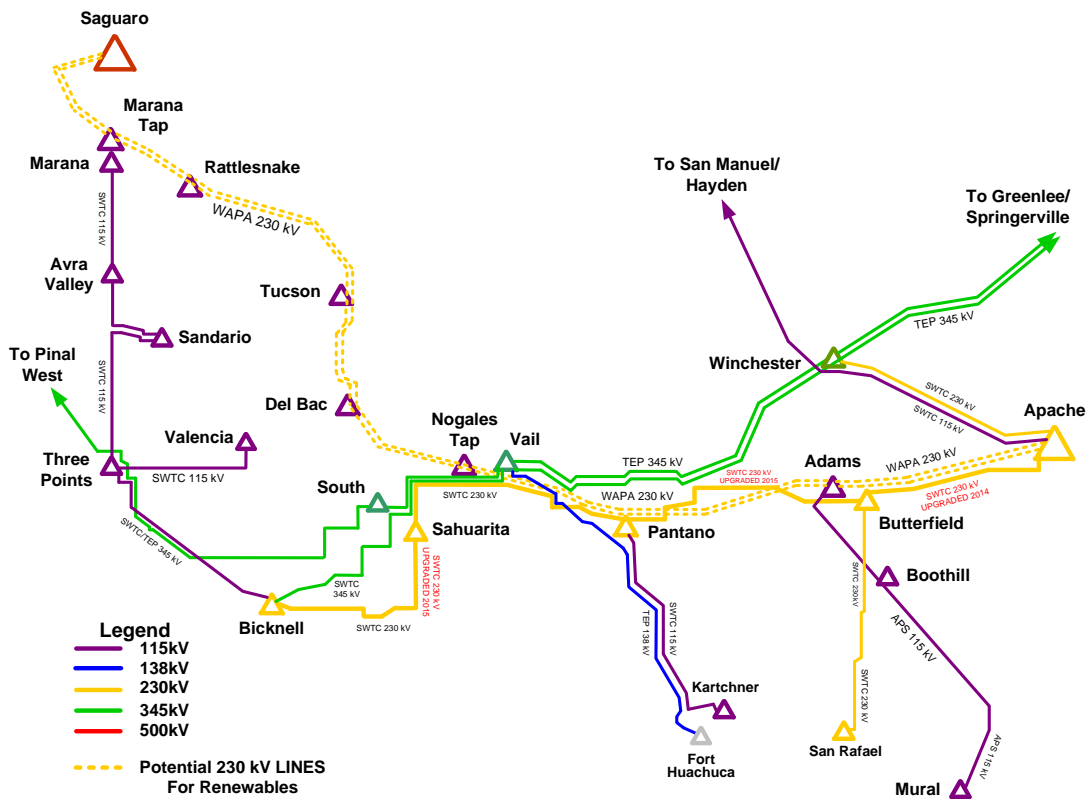


Figure 4

The proposed upgrades would provide an additional transmission transfer capability of as much as 1,000 MW that could be used for renewable generation in the area and could increase Western’s customer’s access to potential renewable areas, as identified by the RTTF.

As filed on April 3, 2009, the total estimated cost of the Project is approximately \$166,000,000. SWTC and TEP, when issuing the SOI for this project recognized that there are other load-serving entities and transmission providers that may benefit from this project. These entities, along with SWTC and TEP would seek to have joint ownership of one of the 230 kV lines proposed in the upgrade of this 115 kV line to a double-circuit 230 kV line. The shared usage of one-half of this line equates to approximately \$83,000,000.

This Project is also “shovel-ready” as it exists in a current ROW and environmental impacts of the new construction would be minimal.

With awareness that Western may not choose this project for Recovery Act funding, SWTC and TEP have participated in discussions with another entity that has expressed interest in funding this Project and is working closely with Western to ensure minimal rate impacts to the Parker-Davis System customers. These discussions have resulted in identification of a project that is different from what was submitted to Western through the SOI process that involves additional segments to the proposed double-circuit 230 kV line that would provide greater benefit to SWTC and TEP, but would not change the viability of the project to support the growth of renewables in the area. In addition, more detailed cost estimates are being developed for the various segments of the project in order to allocate cost responsibility between Western, SWTC, and TEP. The updated cost of this project, subject to change, is \$205,045,360.

If no other entities besides SWTC and TEP subscribe to ownership of one of the 230 kV lines, SWTC’s portion of this amount, subject to change, would be \$61,162,041. This would also require that the project be put into a specific loan package to the RUS and the economic impact to SWTC’s ratepayers would be substantial. These impacts are discussed in the next Section.

Whatever is proposed will be coordinated with Western and the economic impacts to Western’s customers will be analyzed. Once project specifics are known, SWTC will provide this information to the ACC in its 2010-2019 ten-year plan filing.

6.0 PROPOSED FUNDING MECHANISMS

SWTC funds its projects through the RUS. This is the only viable funding mechanism available to SWTC. As an RUS borrower, SWTC follows an established procedure to develop CWP's that are needed to maintain existing infrastructure and construct new projects to sustain the growth of its Member Systems. Projects that are included in SWTC's CWP's arise out of yearly studies that SWTC performs on an on-going basis. These include near term and long term studies of the interconnected transmission system, in accordance with WECC and NERC standards. In conjunction with this effort, SWTC has begun the process of developing its 2010-2019 ten-year plan for submittal to the Commission, which contains the projects listed in current and forthcoming SWTC CWP's. SWTC is currently working on the following three CWP's:

- 2009-2010 CWP – Current Approved Work Plan.
- 2011-2013 CWP – Approved by SWTC Board on September 16, 2009. Will be submitted to RUS later this year.
- 2014-2016 CWP – Currently in development. Subject to a peer review by SWTC's Class A Member Operating Committee ("CAOC") prior to submittal to the SWTC Board.

Once a CWP is peer-reviewed by the CAOC and approved by the SWTC Board, it is submitted to RUS for approval, along with a loan application to cover the costs of the projects in the CWP. The debt that SWTC incurs is a long-term fixed debt with very low interest rates as established by RUS. In effect, each time SWTC goes through this process, it establishes a new mortgage with the RUS. RUS procedures are very strict with regards to justification of the projects and require that a definite need be established for a project before it will be considered for funding. This holds true for all transmission projects, whether for jointly-owned or for renewable transmission.

The timeline for loan package approval is approximately 13 months to 18 months, but can be longer. Part of the reason for the longer time frame for approval of loans is scrutiny by RUS of information that is needed to go into an RUS loan submittal, such as the requirement for accurate estimates of revenue requirements that will allow a borrower, such as SWTC, to not only meet the annual costs of operating the system and make all loan repayments as scheduled, but also for margins sufficient to achieve an equity position consistent with the long-range financial goals of the borrower. These equity positions vary by borrower, but are set in accordance with RUS guidelines.

Projects that SWTC would want to consider for funding from the RUS for the benefit of non-REAct beneficiaries, i.e. projects that would be built for the benefit of entities that are not RUS borrowers, would require a lien accommodation from the RUS. In other words, once all approvals were in place to fund a project of this nature, there would be a lien placed against SWTC's mortgage to ensure that the loan is paid back according to terms set by the RUS. Lien accommodations can be difficult to process and the timeframe for approval can be anywhere from 18 to 24 months.

To illustrate the loan approval process, consider the following recent example. SWTC submitted its current 2009-2010 CWP to RUS on November 29, 2007, along with its corresponding loan package (titled the “D-8 Loan” package). RUS approved the 2009-2010 CWP on January 17, 2008. An amendment to the 2009-2010 CWP, containing minor modifications, was filed with the RUS on January 27, 2009 and was approved on February 17, 2009. The D-8 Loan was just recently approved on September 3, 2009. This represents almost a 23 month process for loan approval which is not uncommon for RUS, once a CWP and loan package has been submitted.

Projects that are needed for immediate construction to resolve a load-serving or reliability need often-times require SWTC to use limited general funds. If the general funds are not sufficient to cover the costs then SWTC would need to seek for interim financing using the lien accommodation process with RUS.

The lengthy time to procure funding from RUS for an RTP could be troublesome for many solar and wind developers. These developers are able to get their projects sited within a relatively short period of time, between 2-4 years. And, these developers are anxious to recover their costs which can become stranded if transmission is not able to be built in a timely manner. Adding to the lengthy process for approval of loans from RUS is the lengthy time in which to site transmission lines. SWTC is in agreement with suggestions expressed at the June 5, 2009 BTA Workshop that any efforts that can be made by the Commission to secure a more streamlined process for permit and ROW acquisition would be in the best interests of the renewable developers and the utilities.

SWTC is also in agreement with the broader policy issues expressed in the Final ARTTIS Report and specifically with regards to the importance of developing a definition for what constitutes a “renewable energy transmission line” or an “RTP.” Consideration should be given to upgrades of existing lines that carry power to load centers to be able to handle new power generation.²⁰

7.0 ECONOMIC IMPACTS

Analyses were performed to gain an understanding of what the economic impacts would be to SWTC ratepayers to implement the Top Three Renewable Transmission Projects.

As noted earlier, the San Manuel Interconnect Project has already been approved for construction but is being deferred due to various factors. Once the project is considered for construction, the economic impact to SWTC ratepayers is expected to be minimal.

The other two projects, the Apache to Bicknell 230 kV Line Upgrade Project and the Western Saguaro to Apache 115 kV Line Upgrade Project are in conceptual planning

²⁰ Id. See pages A-2 to A-3

stages, meaning that they have not been fully vetted for inclusion into a CWP. However, due to the large expenditures that would be needed to construct these projects, each would require being submitted in a separate loan package, as per the process described above.

Incident to the efforts of this report, SWTC has simultaneously developed a new rate filing with the Commission, which was filed on October 16th. The new rate increase for network transmission service to SWTC's Member Systems, is \$26,970,888 per year, and establishes a fixed charge rate (with a levelized rate of return) of 15.42%. SWTC is asking that the rate increase take effect on January 1, 2011, due to a culmination of declining revenues that occur by that time. For purposes of analysis, the proposed fixed charge rate of 15.42% will be used in this report. In other words, it will be used to show the carrying charge that the proposed projects will add each year to the revenues that are needed to meet the equity positions outlined in the new rate proposal before the Commission. This simple analysis is sufficient to show the impact of the projects on SWTC ratepayers on a \$/year basis.

San Manuel Interconnect Project

Estimated Cost:	\$4,201,359
RUS Approval:	October 11, 2007 (Amd. #3 to 2005-2008 CWP)
ACC Approval:	July 9, 2009 (Case #142)
Impact to Ratepayers:	Expected to be minimal. On a levelized basis, using the proposed fixed charge rate of 15.42%, this project will cost SWTC's ratepayers an additional \$647,850 per year, or a 2.4% increase to the proposed revenue requirements of the new SWTC rate.

Apache to Bicknell 230 kV Line Upgrade Project

Estimated Cost:	\$19,600,000
RUS Approval:	N/A
ACC Approval:	N/A
Impact to Ratepayers:	Substantial. On a levelized basis, using the proposed fixed charge rate of 15.42%, this project will cost SWTC's ratepayers an additional \$3,022,320 per year, or an 11.2% increase to the

proposed revenue requirements of the new SWTC rate.

As previously noted, SWTC is considering a re-rate of this 230 kV line that could defer this capital expenditure in the near term. Additional analyses, however, will need to be done to determine if, after a re-rate of this project is done, it will need to be upgraded in the longer term, to a larger conductor to meet NERC Planning Standards reliability criteria and expected Member System growth.

Western Saguario to Apache 115 kV Line Upgrade Project

Estimated Cost:	\$61,162,041
RUS Approval:	N/A
ACC Approval:	N/A
Impact to Ratepayers:	Substantial. On a levelized basis, using the proposed fixed charge rate of 15.42%, this project will cost SWTC's ratepayers an additional \$9,431,187 per year or a 35% increase to the proposed revenue requirements of the new SWTC rate.

If this project is funded by another entity, that is working closely with Western, and if other Western customers become subscribers, along with SWTC and TEP, in one of the 230 kV lines proposed in the upgrade of this line to a double-circuit 230 kV line, the Western Parker-Davis rate impacts would be lessened, and therefore economic impacts to SWTC's ratepayers would not be as substantial.

The total gross plant for SWTC (less working capital and retirements) is \$161,074,094. In round numbers, the Apache to Bicknell 230 kV line upgrade project, with a cost of \$19,600,000, adds approximately a 12% increase to the existing gross plant. The Saguario to Apache 115 kV line upgrade, with a cost of \$61,162,041 adds approximately a 38% increase to the existing gross plant. The additional revenues needed to sustain this amount of new plant in service will require very large rate increases.

SWTC is able, with its existing transmission system, to support its combined Member System RES of 60 MW, but any increases beyond this amount to accommodate more intra-Arizona use and export to markets would require the two upgrade projects as previously discussed. These projects, however, can become key to supporting the growth of renewables in Southeast Arizona and can easily support the expected potential of 600 MW of solar development that was identified by the RTTF in Southeast Arizona. This is a significant amount when compared to the 2009 SWTC Member System Peak of 600.3 MW.

As renewable developers come into Southeast Arizona the potential for sales of capacity and energy to market hubs could off-set the upgrade costs, provided that the developments do not become limited or deferred due to unforeseen factors.

8.0 OTHER CONSIDERATIONS

As noted earlier, the possibility exists that all of these selected Projects could potentially change or be deferred until a later date when it is more economically feasible to construct them. A key consideration for SWTC will be to ensure that these projects are able to meet Member System needs, as per RUS regulations. Additionally, all projects that are considered for inclusion into a workplan undergo a vetting process through the CAOC before consideration is given to ask for Board approval for the projects prior to submittal to the RUS for funding. Therefore, SWTC will be necessarily cautious before committing to a Renewable Transmission Action Plan (“RTAP”) that does not stand up to CAOC and RUS scrutiny.

SWTC is aware of other projects of significance that are being studied in Southeast Arizona that also bear consideration. The first of these is the SunZia Southwest Transmission Project (“SunZia”). SunZia is a double-circuit 500 kV line that will originate in central New Mexico at a proposed SunZia E station near Ancho, New Mexico and terminate at the proposed Pinal Central substation near Casa Grande, Arizona. It is being planned to provide New Mexico and Arizona additional access to renewable energy resources. SWTC is not currently an active participant in the project, but is actively watching the outcome of the final route of the 500 kV line. If the line follows the alternate southerly route, a possibility exists that a tie could be made at Winchester Substation. With a tie at Winchester Substation, SWTC may have an interest in the portion of the project that extends from Winchester to Pinal Central. In any case, there will be possibilities for third party entities to solicit interconnections to the SWTC system, and SWTC will work closely with these entities, if needed, to develop these interconnections. Additionally, the Western Saguaro to Apache 115 kV Line Upgrade Project would enhance capacity for as much as 3,000 MW transmitted from New Mexico by the proposed SunZia project. Segment 20 of Exhibit C on page 25, is a close geographical representation of the Arizona portion of the SunZia Southwest Project.

The second project is the Pinal Central to Tortolita 500 kV Line Project which is needed to maintain the reliability of the regional electric system and meet rapidly growing demand for power in the Tucson metropolitan area and surrounding region. A potential exists for this project to access the renewable energy zone defined by the RTTF in Southeast Arizona and become an RTP. SWTC is a participant in this project and will support efforts to classify this line as an RTP to support the growth of renewables in the area. Segment 28 of Exhibit C on page 25, is a close geographical representation of the Pinal Central to Tortolita Project.

Further refinements to the RTTF process with the involvement of all Stakeholders in the State is a positive step in the right direction towards supporting the growth of renewable resources in the State and SWTC pledges its continued support of this effort.

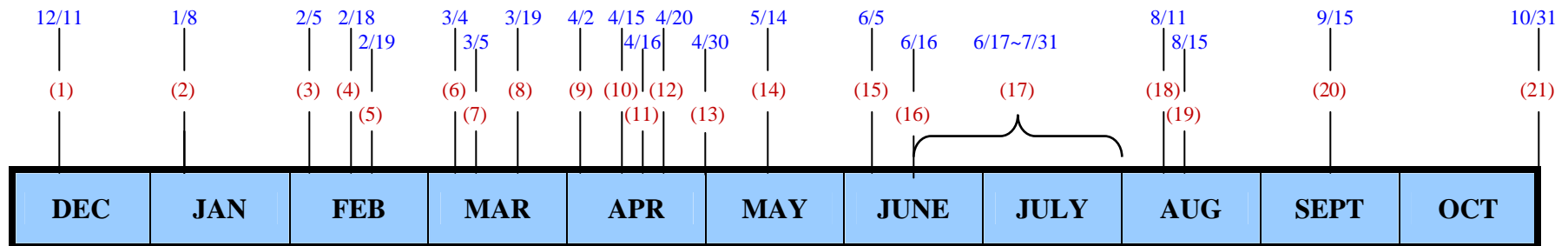
9.0 EXHIBITS

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RTTF TIMELINE

- | | | |
|------|----------|--|
| (1) | 12/11/08 | ACC issues Decision No. 70635 |
| (2) | 01/08/09 | RTTF creates subcommittees: AARTIS and Finance |
| (3) | 02/05/09 | ARRTIS Meeting No. 1 |
| (4) | 02/18/09 | Finance Subcommittee Meeting No. 1 |
| (5) | 02/19/09 | ARRTIS Meeting No. 2 |
| (6) | 03/04/09 | Finance Subcommittee Meeting No. 2 |
| (7) | 03/05/09 | ARRTIS Meeting No. 3 |
| (8) | 03/19/09 | ARRTIS Meeting No. 4 |
| (9) | 04/02/09 | ARRTIS Meeting No. 5 |
| (10) | 04/15/09 | Submit Interim Report to RTTF |
| (11) | 04/16/09 | ARRTIS Meeting No. 6 |
| (12) | 04/20/09 | ACC Workshop No. 1 |
| (13) | 04/30/09 | ARRTIS Meeting No. 7 |
| (14) | 05/14/09 | ARRTIS Meeting No. 8 |
| (15) | 06/05/09 | ACC Workshop No. 2 |
| (16) | 06/16/09 | Finance Subcommittee Meeting No. 3 |
| (17) | 06-07/09 | Work Group Develops and Subcommittee Reviews Draft Form of Order |
| (18) | 08/11/09 | Finance Subcommittee Meeting No. 4 |
| (19) | 08/15/09 | Issue Draft Report to Subcommittee and initiate review |
| (20) | 09/15/09 | Issue Final Report to RTTF with Draft Form of Order |
| (21) | 10/31/09 | Utilities respond to order No. 70635: " ... plans and funding mechanisms shall be filed with the Commission no later than October 31, 2009" |



2008

2009

Workshop Planning

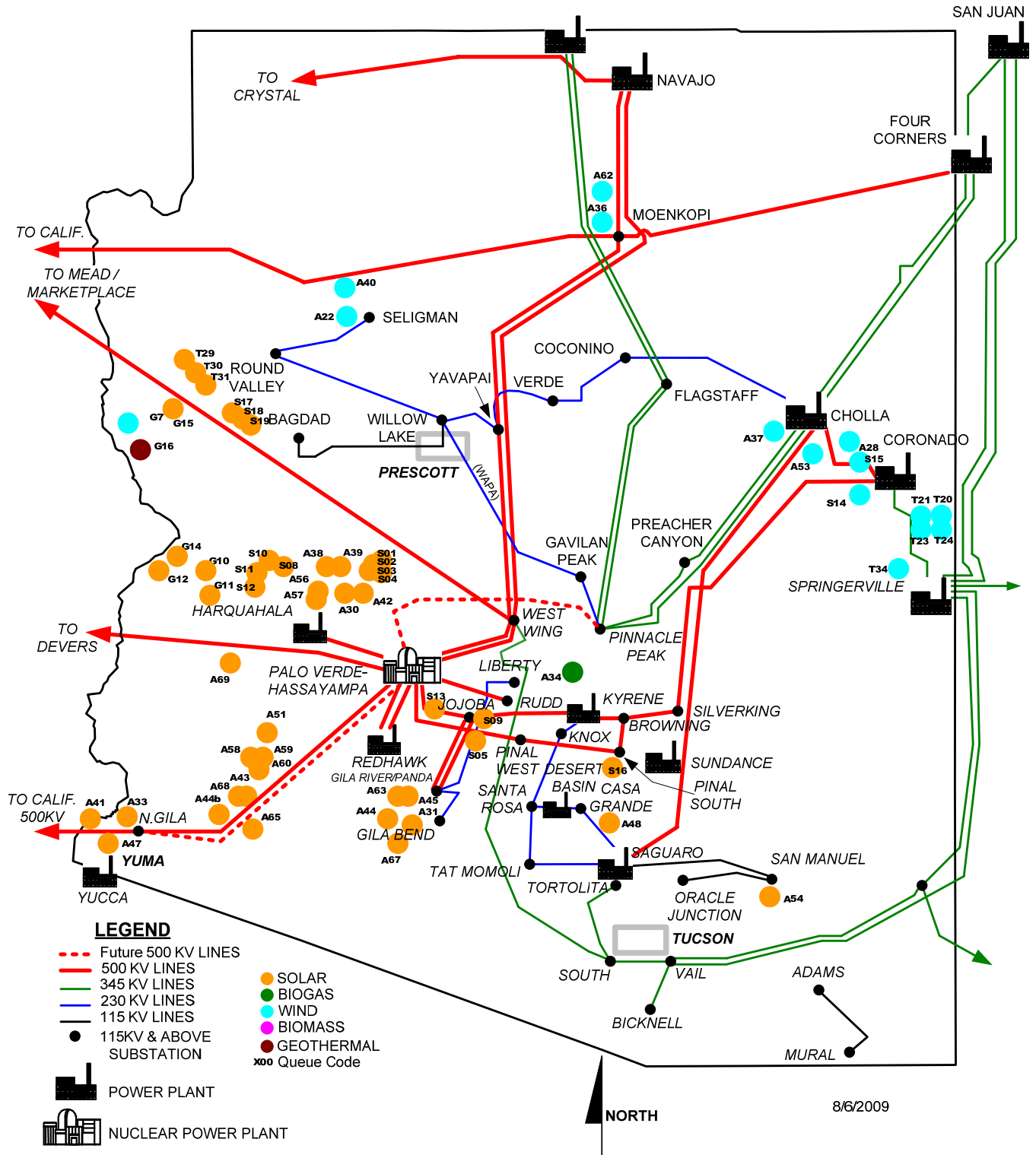
Workshops

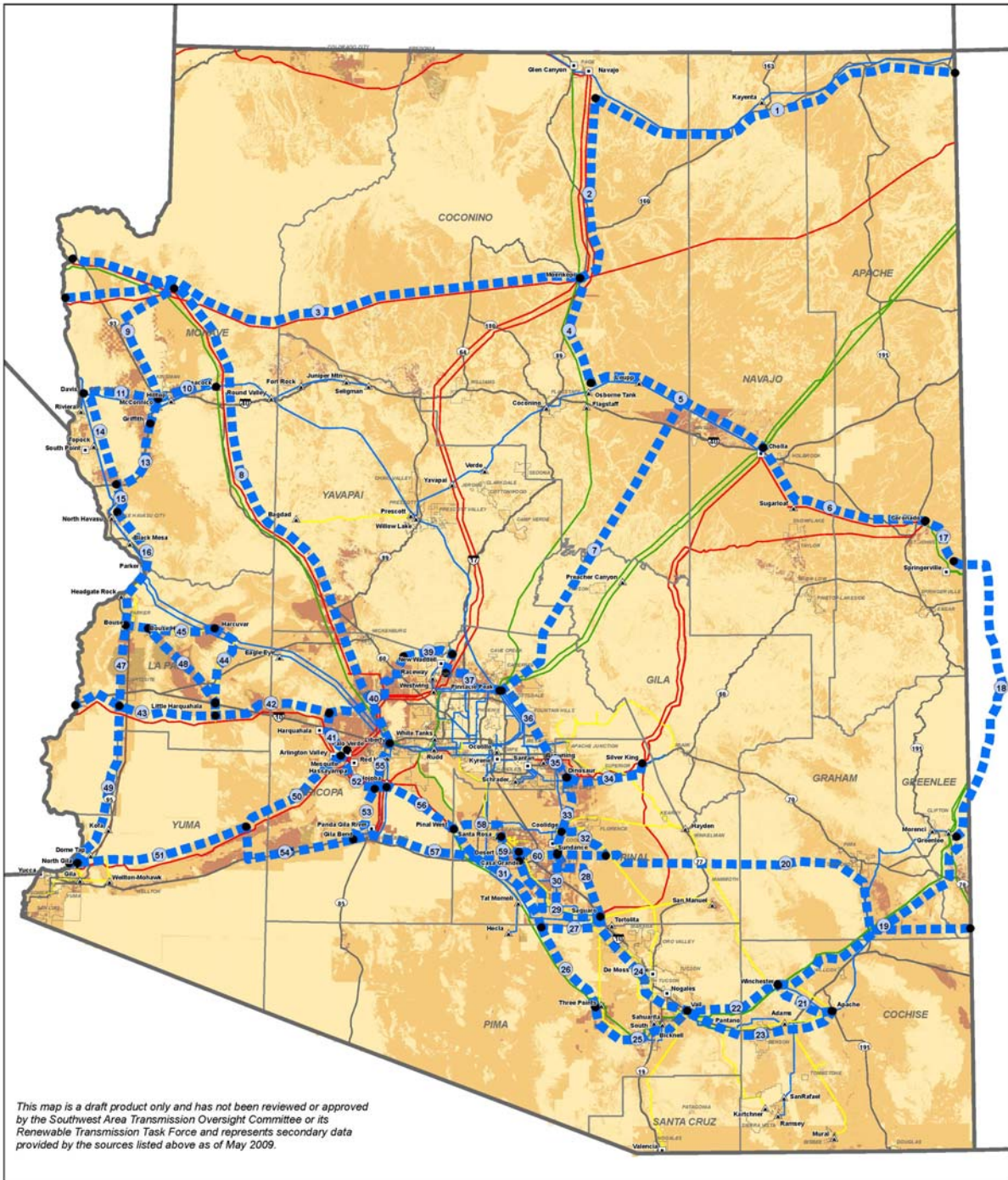
Draft Prep

Report Review

2009 ARIZONA RENEWABLES

Active Generator Queue Listing





- ENVIRONMENTAL EXCLUSION AND SENSITIVITY AREAS**
- Exclusion - Includes areas greater than 5% Slope
 - High Sensitivity
 - Moderate Sensitivity
 - Low Sensitivity
- GENERAL REFERENCE**
- Interstate/Highway
 - Major Road
 - County Boundary
 - State Boundary
 - City Boundary

- UTILITY FACILITIES**
- RTTF Proposed New Transmission/Upgrades
 - 500kV Transmission Line
 - 345kV Transmission Line
 - 230kV Transmission Line
 - 161kV Transmission Line
 - 138kV Transmission Line
 - 115kV Transmission Line
 - Power Plant
 - Pumping Plant
 - Substation
- SOURCES**
- ASLD, AGFD, BLM, NREL, USFS, USFWS, USGS, WREZ, 2009

ENVIRONMENTAL RESOURCE EXCLUSION AND SENSITIVITY AREAS (SOLAR)

ARTIS - ARIZONA RENEWABLE RESOURCE AND TRANSMISSION IDENTIFICATION SUBCOMMITTEE

DRAFT: June 18, 2009

