Section 2: Project History



SECTION 2: PROJECT HISTORY

2.1 SECTION PURPOSE

The purpose of this section is to provide an overall historic summary of developments that have transpired over the past fifteen years, mostly at the State level, pertaining to renewable energy and associated electric transmission. While these occurrences are not directly associated with the completion of this study, they lay the foundation for what ultimately led to its inception.

2.2 RENEWABLE ENERGY EXPORT HISTORY

The following history has been compiled from multiple sources (as referenced) to provide an overview accounting of what has led to the need for this study and future export transmission development:

- In 1997, the state of Nevada adopted a renewable energy portfolio standard that required one-half of one percent of total energy sales for Nevada's electric utilities be renewable energy. This requirement for the state's public utilities was one of the first renewable energy initiatives. The utilities and developers who supported the use of renewable energy however found that there were many obstacles that needed to be addressed as a result of the new law.[1]
- In 2001, the State of Nevada adopted one of the most aggressive renewable energy portfolio standards in the country. It required that five percent of the state's utilities' total energy sales be from renewable resources, commencing in 2003 and increasing every two years by two percent until 2015. By 2015, the renewable energy component was required to be fifteen percent of the total energy sales.
- In 2005, the Nevada Legislature modified this requirement to a three percent increase every two years until the renewable energy component of total energy sales in the state was twenty percent.
- In 2007, the state of Nevada's then Governor, Jim Gibbons, established the Renewable Energy Transmission Access Advisory Committee (RETAAC). This committee was established to "develop recommendations for improved access to the grid system by which renewable energy industries can set up and have market access in Nevada and neighboring states." The committee recommended that the state encourage the construction of transmission

[1] *The renewable energy boom: How Nevada is playing a vital role in this growth market*. Paper/presentation 2, Kummer Kaempfer Bonner Renshaw & Ferrario, Attorneys at Law, on August 15, 2007 at the 2007 UNLV Energy Symposium.

lines and collector systems to enable access for renewable energy development in each of the identified Renewable Energy Zones (REZs). They also recommended the state support the construction of a transmission line to connect the state's northern and southern electric grids. This line was recommended to be of sufficient capacity to provide Nevada Power Company with their non-solar renewable energy requirements from the abundant geothermal and wind resources in northern Nevada, and to provide Sierra Pacific Power Company access to the abundant solar resources in southern Nevada. Lastly, they recommended further study be completed to evaluate the feasibility of export transmission line development and the potential financing mechanisms associated with that development.

- On June 12, 2008, then Governor Jim Gibbons signed an Executive Order creating the second phase of RETAAC to further the committee's initial efforts, as described in the RETAAC Phase I Report, dated December 31, 2007. For Phase II the committee was charged with: 1) determining power potential for the renewable energy zones designated by the first phase; 2) the review of environmental, land use and permitting constraints related to the development of new transmission to accommodate renewable energy transmission; 3) the identification of potential construction corridors that could avoid these constraints; and 4) the review of potential revenue needs for construction, among other duties. A principal development of RETAAC Phase II is a map showing the state's most economically viable renewable energy zones and the transmission necessary to access the electricity believed to be contained within those zones. New transmission lines necessary to export the electricity contained in the zones were also identified. The final principal finding ranked the economic feasibility of the transmission needed to access each prioritized renewable energy zone. This information provided a critical foundation for the work completed herein. For reference, a summary of the key information from the RETAAC Phase II Report, along with associated key maps, has been compiled and is included in Appendix A of this report.[2]
- In November 2008, concurrent to the RETAAC effort, the West-wide Energy Corridor Final Programmatic Environmental Impact Statement (EIS) was completed, with the United States Department of Energy (DOE) and the United States Bureau of Land Management (BLM) as the lead federal agencies, and the United States Forest Service (USFS), the United States Department of Defense (DOD), and the United States Fish and Wildlife Service as cooperating federal agencies. The PEIS identified proposed Section 368 energy corridors to facilitate future siting of renewable energy development projects and electricity

[2] Governor Jim Gibbons' Nevada Renewable Energy Transmission Access Advisory Committee, Phase II; Volume I Executive Summary and Report, dated July 1, 2009

transmission and distribution facilities on Federal Lands in the western United States. A multi-modal energy corridor was proposed for southern Nye County, Nevada.[3]

- On January 16, 2009 then United States Secretary of Interior, Dirk Kempthorne authorized the BLM to establish Renewable Energy Coordination Offices in a further effort to expedite the permitting of wind, solar, biomass, and geothermal projects on BLM-managed lands, along with the electrical transmission facilities needed to deliver the energy from these projects. The offices have been located initially in the states where the greatest interest has been shown in renewable energy development: Nevada, Arizona, California, and Wyoming[4].
- On July 1, 2009, the RETAAC Phase II Report was released, establishing viable and useful mapping of the REZs in Nevada.
- Also in 2009, responding to the information presented in the RETAAC Phase II Report, and developing legislation that would move the renewable export effort forward, the Nevada State Legislature passed Assembly Bill 387 (AB387), making transmission development to support renewable generation public policy. This bill specifically stated, "The Commission shall require the utility to include in its plan a plan for construction or expansion of transmission facilities to serve renewable energy zones and to facilitate the utility in meeting the portfolio standard established by Nevada Revised Statute (NRS) 704.7821."[5]
- In February 2010, responding to the 2009 legislation, the primary privately owned utility in the state of Nevada, NV Energy, filed a Nevada Power Company (DBA NV Energy) Integrated Resource Plan (IRP) for Transmission Corridor Projects. The Public Utilities Commission of Nevada (PUCN) rejected the plan based on concerns over ratepayer risk and the lack of information regarding developers' true financial commitments.
- In July 2010, Nevada Power Company's sister company, Sierra Pacific Power Company (DBA NV Energy) filed an IRP that proposed a renewable energy conceptual transmission plan to serve REZs filed. This plan was accepted by the PUCN.
- In October 2010, NV Energy broke ground on a new transmission line, the One Nevada Transmission Line Project, now simply referred to as ON Line. This project was approved in accordance with RETAAC I recommendations, and when completed will link the northern and southern electric grids within Nevada. This is the first step in expansion of renewable energy infrastructure. The line will extend approximately 236 miles from the Harry Allen substation, north of Las Vegas, to the new Robinson Substation, just west of Ely, Nevada.

[3] *Programmatic Environmental Impact Statement, Designation of Energy Corridors on Federal Land in the 11 Western States (DOE/EIS-0386)*, dated November 2008. Final EIS can be referenced and downloaded at http://corridoreis.anl.gov/.
[4] *The renewable energy boom: How Nevada is playing a vital role in this growth market*.
[5] Assembly Bill No. 387 (AB387); Second Reprint with amendments, adopted on May 21, 2009.

While this new transmission line creates a critical link inside the Nevada grid, it does not necessarily provide any new export paths into neighboring states.

- In 2011, NV Energy developed a Renewable Transmission Initiative (RTI) to explore a customer-driven approach to renewable development. This plan, as described by NV Energy, provides a mechanism to support customer-driven transmission projects and reduces ratepayer risks. Under this plan, a request for information process was completed and data is currently being evaluated. The plan in summary establishes four specified Points of Receipt (PORs) where developers will deliver energy on the NV Energy system, and three Points of Delivery (PODs) where developers will sell the energy, or use the POD to wheel the energy into other markets. The RTI does not open up any "new" transmission paths, but rather provides intra-state connection to already established (and largely constrained) points of delivery; the main point of delivery focusing on the Eldorado Substation in the Las Vegas area.

2.3 NEVADA ENERGY ASSISTANCE CORPORATION

Responding to State Legislation, market demand, and the desire for developing the diverse resources within the state, Nevada created a non-profit corporation to explore the opportunities associated with the export of renewable power. This Corporation was founded and established in March 2009 as the Nevada Energy Assistance Corporation (NEAC). NEAC was formed as a 501(c)(3) non-profit corporation under the powers given to the Director of the Nevada Department of Business and Industry (B&I). At that time, NRS 232.520.4 set forth that the Director (of B&I) "…may, within the limits of the financial resources made available to the Director, promote, participate in the operation of, and create or cause to be created, any nonprofit corporation, pursuant to chapter 82 of NRS, which he or she determines is necessary or convenient for the exercise of the powers and duties of the Department." [6]

NEAC is controlled by the State, through the powers of State officials acting in their official capacities to comprise seven of the nine directors. The remaining two directors have been appointed by entities organized to advance the interests of local governments within the state; the Nevada Association of Counties, and the Nevada League of Cities and Municipalities. Currently, NEAC is governed by a Board of Representatives that includes a State Senator and Assemblywoman. The Board is currently chaired by private businessman, Monte Miller.

NEAC was formed by B&I as a non-profit corporation to lessen the burdens of State government by promoting the development of renewable and sustainable energy projects within Nevada.

[6] Lon A. DeWeese; Historic documentation prepared while acting Chief Financial Officer of Nevada Housing Division and NEAC Board Member

Pursuant to the recommendations of RETAAC and RETAAC Phase II, NEAC was formed to perform the essential functions of conducting feasibility, environmental and engineering studies, and of planning for the construction and operation of transmission lines necessary to connect renewable and sustainable energy generating sites to the state and national power grids. At the time of NEAC's development, then Governor Jim Gibbons stated that he "*…directed the formation of NEAC because the production of electricity from renewable resources within the State is necessary to the economic stability of the State and the financial well-being of its residents and resident businesses. The State has determined that renewable energy facilities will not be developed within the State unless transmission facilities are installed and operated, and the private sector has not evidenced a willingness to engage in such projects. Therefore, the government of the State, through NEAC, must perform this essential function to promote the energy independence of the State.*"[7]

The Board of NEAC was clear in their understanding of the potential benefits to Nevada resulting from such electric transmission development. The Board understood that, in order to move the state forward and help to advance its growth, it was critical to understand and promote the state's abundant resources and associated opportunities. The State of Nevada holds some of the richest and diverse renewable energy resources in the Nation. As such, not only is there extensive opportunity for development within the state to support Nevada energy consumption, but the abundance of resources could also help to power neighboring states. Development of renewable energy resources within Nevada would not bring jobs into the state that are associated with the construction and operations of such plants, as well as encourage the development and expansion of intellectual capital associated with this technology. Nevada is already well on its way to being the leader in the technological development of renewable power. Several leading geothermal renewable energy developers are already based in Nevada. However, there is much untapped technological development for all resources that holds great potential for the future. It is one of the goals of the current State administration to wisely develop the state's energy resources by leading the nation in renewable energy production, energy efficiency and conservation, and exportation.

Shortly after the creation of NEAC and the establishment of their direction, the Nevada State Office of Energy (NSOE) was awarded a DOE grant to evaluate several mission-critical aspects of the needs and opportunities associated with the limitation of transmission export capability in Nevada. Subsequently, the NSOE sub-granted the funds for management by NEAC. NSOE contracted with NEAC to manage the performance and delivery of, among other things, in-state and interstate trunk and feeder liner assessments; to manage the creation of transmission line and substation financial feasibility models; to provide technical support for the creation of a bi-

[7] Lon A. DeWeese; Historic documentation prepared while acting Chief Financial Officer of Nevada Housing Division and NEAC Board Member

state renewable energy transmission development authority; and to research and acquire program/project evaluations and review new technologies. The source of the funding was American Recovery and Reinvestment Act (ARRA) funds provided to the Nevada State Office of Energy (NSOE) by the U.S. Department of Energy's State Energy Program (SEP). The NSOE contracted with NEAC because NEAC, as a state-created non-profit, was uniquely situated to accept the funds allocated for engineering and transmission feasibility studies and could identify the specific studies needed and subsequently procure the needed services using a Request for Proposal (RFP) process. Additionally, NEAC could quickly assume control of the funds to commence identification of the studies required and begin acquisition of the third-party resources needed to perform the studies.[8]

In late 2010, complying with the NSOE mission for renewable energy export, NEAC issued an RFP focused on the evaluation of the current electric grid, and the identification of possible transmission line routes that could provide new capacity to export emerging renewable energy generating power that was either under development currently or planned for development in the coming 5 years.

In February 2011, in response to the RFP proposals submitted, NEAC retained the consulting services of Tri Sage Consulting (a partnered team with Energy Source LLC and US Geomatics) to complete a Renewable Energy Export Transmission study. This analysis was contracted as a "next step" in the state of Nevada's renewable energy development, on the heels of the recent RETAAC efforts.

On March 29, 2011, shortly after the contract was awarded to Tri Sage, the NSOE released a statement that it would provide support and guidance to the NEAC Board and the consulting team in the development of renewable energy export. Specifically, the NSOE stated:

> *"Nevada has successfully adopted many policies that encourage the development of renewable energy resources. Without access to transmission, developers cannot get their energy to markets within Nevada or to markets in our neighboring states. Energy export to neighboring states is a key component to enabling Nevada to create a viable energy economy. The NSOE and others are actively working on initiatives to work with regional utilities, regional cording committees and the California Energy Commission Renewable Energy Transmission Initiative (RETI) to improve Nevada's energy export potential.*
>
> *NSOE also has two board positions on the Nevada Energy Assistance Corporation ("NEAC"), a 501(c)(3), non-profit organization, whose mission is to promote the transmission planning and development for renewable energy projects within Nevada. NEAC is working with*

[8] Lon A. DeWeese; Historic documentation prepared while acting Chief Financial Officer of Nevada Housing Division and NEAC Board Member

engineers and business consultants to develop routing and a business plan to develop transmission lines for export of Nevada's renewable energy resources.

Nevada is rich with both abundant solar, geothermal and natural resources. However, the ability to harness and utilize those resources to expeditiously export power is complicated by the fact that Nevada is 85 percent federally owned and managed. The large amount of federal control makes it difficult for even privately owned lands to be developed for renewable energy production since many sites must be accessed through federal lands. Conversations are on-going with the agencies involved in permitting these lands in order to find the most effective process for approving qualified projects as quickly as possible. "

2.4 THE TRI SAGE TEAM

The Tri Sage team was selected by the NEAC Board to address the state of Nevada's desire to evaluate several mission-critical aspects of developing an export power grid to utilize emerging renewable energy within Nevada.

It was the approach of the Tri Sage Team to assess the big picture of interstate transmission development to support renewable energy export, which then allowed for a clear approach to address each task and goal comprising this project and report. It is important to understand that an interstate transmission expansion plan of the magnitude discussed in this report requires that the neighboring states and their utilities and electric grid control operators have a mutual desire, commitment and market need to explore the potential opportunities. To this end, Tri Sage established extensive communication and held several strategic meetings with the surrounding utilities and power grid operators, including NV Energy, the California Independent System Operator Corporation (CAISO), Valley Electric Association (VEA), the Lassen Municipal Utility District (LMUD), and the Utah Associated Municipal Power Systems (UAMPS). It was during these meetings that critical information came to light that helped shape the routing approach used by the Tri Sage team for this project.

In brief, determining the feasibility of an "interstate" transmission project required a comprehensive review of possible routes that could interconnect neighboring control areas, based on research and cooperative discussions with developers, neighboring transmission grid operators and purchasing utilities. The work that has been previously performed by the Governor's task force has identified an order of magnitude of generation potential and the market for that power based on the public policy objectives of each state. This information was used as the foundation for this planning and routing study.

Under the contract with NEAC, Tri Sage was to "develop preferred transmission line routing to allow for: 1) increased export capabilities with neighboring states; and 2) to facilitate the

development of renewable energy collector systems within the state of Nevada." It was clearly stated both in contractual terms and verbally that of utmost importance was that Tri Sage not duplicate efforts already underway with NV Energy or other neighboring grid authorities or transmission development projects. Nor was Tri Sage to duplicate work performed as part of RETAAC Phase I and Phase II. [9] The Tri Sage team therefore focused on utilizing existing information to enhance and further expand the export capabilities of Nevada.

Reported herein are the results of all aspects of this effort, including the electric grid interconnection perspectives, the physical line routing, the environmental and permitting constraints, and the proposed line routes to best meet the needs of Nevada for exporting renewable energy.

[9] Feb 24, 2011; Agreement for Professional Services between NEAC and Tri Sage Consulting.