Section 8: Report Conclusions and Recommendations

SECTION 8: REPORT CONCLUSIONS & RECOMMENDATIONS

8.1 SECTION PURPOSE

The purpose of this section is to summarize the conclusions and to discuss the next steps that would be required to further support these projects.

8.2 REPORT SUMMARY

This report provides a macroscopic view of proposed solutions to the existing limited transmission export capacity for renewable energy out of the state of Nevada. It is rare to complete routing of multiple projects concurrently due to the order of magnitude of data collection and regulatory and policy issues. Typically a line is routed to address more micro-level needs such as serving specific geographic areas, or transmitting power from an individual generator, or collection of renewable energy developments. However, in the case of this effort, the direction was given to develop preferred transmission line routing to allow for increased export capabilities out of Nevada into neighboring states, while concurrently facilitating the development of renewable energy collector systems within the state of Nevada. In this instance, it was also incumbent of the team to not duplicate efforts by others, including NV Energy and the previous work completed by RETAAC, as well as private transmission developers. To accomplish this, it was necessary to look at the state as a whole, consider all the renewable energy zones, and evaluate the most efficient means of connecting those zones to the current renewable electric energy load centers. To this end, the team determined the proposed three projects that are presented in the Executive Summary, and are explained throughout this report. It must be noted that these recommendations are based on as current of data as possible at the point of report release. However, the renewable energy market and the electric grid regulatory environment are ever evolving. This is evidenced in the impacts of FERC Order No. 1000 and the issues that are now being assessed by utilities nationwide. In addition, RPS requirements are being revised concurrently with utilities trying to meet those requirements while maintaining system grid integrity.

This report provides a comprehensive evaluation of all of the issues that were considered. In order to maintain continuity of these recommendations, and to keep the projects as current and responsive to the need as possible, it will be critical to sustain momentum and advance the projects forward. The information herein provides a guide of what will be required for the next steps of this effort.

The following recommendations are presented in as much of a chronological order as is practical. It should be recognized that in some cases these steps might not occur in the precise sequence indicated, or will require concurrent activity. The project sponsor will need to balance the timing and associated cost expenditures of each activity specified in Subsections 8.3 through 8.11 as this process proceeds.

8.3 OUTREACH & COORDINATION WITH REGIONAL & PROPOSED INTERSTATE TRANSMISSION PROJECTS

Extensive outreach was conducted throughout this study to gain knowledge of other transmission efforts, maintain an understanding of their progress, and establish open communication with regard to the obstacles facing them. It was important to have this understanding to ensure that the planning and routing of the proposed projects herein did not conflict with other planned capacity additions where possible. As an example, while the proposed projects do not duplicate planned capacity additions, the North Project does enhance one of those proposed projects. The result is a more robust capacity addition to the grid in the event both the LMUD and North Project are constructed. Specific to this scenario, it is even more critical to maintain open communication with the LMUD team and maintain a close understanding of their project status.

Another project that warrants continued monitoring and communication is the proposed Great Basin HVDC project. While the three proposed projects provided in this report are not tied to this effort in any way, there is an opportunity to track the success of and support the HVDC project. This project, if completed, would add additional capacity to the overall improvement of transmission export out of Nevada.

Other regional projects that may have less direct impact to these proposed projects also warrant continued monitoring and communication.

8.4 DISCUSSION OF POTENTIAL BENEFITS TO NEVADA & BUSINESS CASE DEVELOPMENT

As NEAC moves forward with exploration of the Project Proponent Team and financing structure, it will be critical to maintain clarity that this project will have a life expectancy of 50 years or more, and would bring extensive economic benefits to the state of Nevada as well as support the development and enhancement of the technology base for the renewable energy development within the State. These projects could be a key piece of infrastructure for Nevada, representing not only a new source of renewable energy export but substantially greater reliability and energy security for both Nevada and California.

A thorough economic evaluation should be completed in order to identify the specific benefits to Nevada. The following parameters, at a minimum, need to be investigated to support that evaluation:

- Construction Labor and associated economic benefits
- Intellectual Capital Development as a base resource
- Property Tax
- Sales Tax
- Long Term Job Creation
- Leveraging of economic activity

The economic evaluation could then be used to complete a more stringent and structured business case development. At a minimum, the following should be included in the business case development:

- Review of potential market and establishment of subscription potential of each project
- Development of financial structure to support the capital funding for each project and for projects in total
- Due Diligence review of capital cost requirements and schedules
- Development of administrative and operating cost projections
- Projections of transmission rates; both Federal (FERC) and State level
- Sensitivity Analysis of transmission rates; both FERC and State level
- Investigation of the option of a public / private FERC regulated transmission company

8.5 FEDERAL & REGIONAL TRANSMISSION MONITORING & INVOLVEMENT

As the NEAC Board proceeds with one or more of these projects, it will be critical to remain vigilant and informed regarding the political and regulatory issues impacting the electric transmission industry. The current issues surrounding the FERC Order 1000 and the pending regionalized transmission planning will be a critical factor that impacts the proposed project(s). In addition, policy and requirement changes within the EPA, DOE, and the FERC and State Agencies regarding routing, permitting, and cost recovery of transmission lines will greatly affect the viability of all transmission projects. It will be beneficial to engage with the State Energy Offices, the State Public Utility Commissions, FERC, WECC and other regional transmission entities who affect and understand transmission policy. Considerable outreach

has been conducted with these agencies early in the project by both the project team and the Nevada State Energy Office. In order to maintain the momentum that was created through the early efforts of outreach, it will be necessary to continue with these communications.

8.6 SOLIDIFY DISCUSSIONS WITH CALIFORNIA UTILITIES / DEFINE PURCHASE OPPORTUNITIES

Moving forward with this effort will require collaboration with the power purchasing utilities in California. The RETAAC I and II evaluations, the ongoing OATT and OASIS tracking of renewable interconnection requests, and the continuous discussions with renewable energy developers show that there is an abundance of resources in Nevada. One of the next steps will be to consolidate the interest of entities to purchase the power generated from these resources. The Tri Sage Team was tasked with the development of export transmission line routes. In order to optimize the narrowing of these routes to ensure that they terminate in areas of strong potential power purchasing requirements, discussions were initiated with the power purchasing utilities. These discussions concluded that there is interest for purchasing these resources. However, a much more detailed effort will be required by NEAC to move the effort forward by engaging potential purchasers, including the public and investor owned utilities. As an example, the South Project proposes a termination at the Antelope Substation. This substation is owned and operated by Southern California Edison (CSE). This interconnection facilitates the delivery of energy to many potential purchasers of renewable energy in the California market.

Ultimately, a process similar to the RTI presently being conducted by NV Energy will likely be required to consolidate the market demand and commitment. This entails soliciting interest of renewable energy developers and/or buyers to commit to long-term contract use of the intended transmission projects.

8.7 PROJECT FINANCING DISCUSSION

The critical issue moving forward with one or all of these proposed transmission projects will be finding a suitable project sponsor. This will define and provide focus to how the project moves forward, from a planning and implementation standpoint as well as from a financing structure and governance.

There will be opportunities to create project financing structures. Several private investment firms find this type of investment attractive, given the proper market and political conditions. Private investors have interest in the development of transmission projects and, based on some preliminary discussions, there may be interest in these proposed NEAC transmission projects. It is important to note that there is significant uncertainty in renewable energy development and

private investment in transmission as a result of not having clear understanding of the California RPS market. Investors are operating on the current publically announced position of California not having a large interest in importing renewable energy, and as a consequence, transmission needs are presumably less critical to California.

The political and policy issues need to be addressed to promote the necessary interest in the market and to develop the business case and financial analysis to support the development of the proposed projects.

There are multiple issues that any investor will want to clearly understand to allow for proper evaluation of the project costs versus benefits of the investment. The primary issues to be evaluated before any financing plans can be developed include:

- Permitting issues
- Regulatory & policy issues
- Market demand to support the project(s)
- Operational capabilities (i.e. Grid operations and capacity ratings)

A critical element of any project financing is the development of a financial model of costs and revenues and this should be developed before proceeding with the major expenditure of final path ratings, permitting, final design and right-of-way acquisition. This model will be instrumental in performing a sensitivity analysis for all assumptions and should be a critical element for development of financing alternatives.

8.8 TRANSMISSION PROJECT RATINGS

The WECC is the regional entity responsible for coordinating and ensuring bulk electric system reliability in the Western United States. WECC provides an environment for coordinating the operating and planning activities of its members. WECC is geographically the largest and most diverse of the eight regional entities that have Delegation Agreements with the North American Electric Reliability Corporation (NERC). Membership in WECC is open to all stakeholders with an interest in the operation of the bulk electric system in the Western Interconnection.

WECC requires a three phase path rating process that is a comprehensive technical planning study to define the transfer limit that a new transmission line (or lines) can achieve without interfering with the reliability or stability of other lines in the western interconnection. In addition to technical modeling, the path rating process requires a peer review by all interested transmission providers and other stakeholders.

The WECC process facilitates a variety of studies and assessments required for the reliable planning and operation of the bulk electric system in the Western Interconnection. Included in these activities are long-term planning studies on five- and ten-year horizons, congestion studies, and assessments of loads and resources.

Within WECC, there are multiple Subregional Planning groups. The Sierra Subregional Planning Group (SSPG) is a division of the WestConnect organization. The SSPG is a joint, high voltage transmission system planning forum for the purpose of assuring a high degree of reliability in the planning, development and operation of the high voltage transmission system in the Northern California and Northern Nevada region. This is in accordance with the Joint Transmission Access Principles and the Electric Transmission Service Policy Statement, dated Dec. 16, 1991[1].

Submittal of the project data to the SSPG initiates a portion of the regional planning process required to ultimately obtain WECC ratings. This announces the project(s) to the regional stakeholders and facilitates market interest development for potential transmission users (i.e. renewable energy developers and other transmission users). The process requires decisions regarding specific technical parameters to support computer software based transmission modeling. The ultimate WECC Rating parameters will include project voltage, line length, conductor size, phase spacing, as well as transformer and shunt reactor sizing.

The projects presented herein were submitted to the SSPG on January 20, 2012. Due to the changes that are occurring among the WECC sub-regional planning groups related to FERC Order No. 1000, there was some question as to exactly how the coordination between the sub-regional groups will be performed. The three NEAC projects collectively span into multiple sub-regional territories. It was determined that filing with the sub-regional group in which each project originated would be the conventional, and most logical filing at this time. This turned out to be the SSPG for each of the proposed projects. Following initial discussions with the Chairman of the SSPG, it is understood that once filed, distribution of the project information among other sub-regional and Transmission Expansion Policy Planning Committee (TEPPC) groups will be facilitated by SSPG. However, it is still unclear how the California planning groups will be involved in the electric rating effort. This will be critical to primarily the South Project. For this initial filing with the SSPG, the NSOE has sent a copy of the WECC filing to the CAISO for reference and action, as they deem necessary. Follow-up and support through this process will be critical.

This effort will require technical support and attention in order to address issues as they arise. Due to the changes occurring within WECC and the SSPG in response to FERC Order No. 1000,

[1] Information obtained from the official WestConnect Web Site; update 2012.

the exact rating process and agency involvement that will occur is unknown. As such, it will be necessary to closely track progress and provide input as opportunity or need arises.

8.9 ENVIRONMENTAL APPLICATION PREPARATION

These projects will be subjected to extensive environmental permitting in order to receive approval for construction. Most notably will be the National Environmental Policy Act (NEPA) process. Under NEPA, each of the three proposed projects will be subjected to an Environmental Impact Statement (EIS). This federal process is an assessment of the possible positive or negative impacts that a proposed project may have on the environment, including social and economic aspects. The purpose of the assessment is to ensure that decision makers consider the ensuing environmental impacts when deciding whether to proceed with a project. This effort can take anywhere from 18 months to 6 years.

In addition to the NEPA process, the North and South Projects will be subject to the California Environmental Quality Act (CEQA) with mandated actions that all state and local agencies must take to advance the policy. Specifically, for any project under CEQA's jurisdiction with potentially significant environmental impacts, agencies must identify mitigation measures and possible alternatives by preparing an Environmental Impact Report (EIR), and must approve projects with feasible mitigation measures as the environmentally superior alternative.

For all projects, in addition to NEPA and CEQA (where applicable), there are many other permitting processes at the state and local levels that will be required to be followed. These include permits for stream and wetland impacts, storm water management, air and dust control, encroachment, special use, etc. For the immediate next steps, the focus should be on the NEPA and CEQA application filings.

Recently, the Federal Government has engaged with facilitating expedited review of the federal level permitting. This was a result of the delays that were occurring in securing the needed statutory reviews, permits, and consultations that threatened timely completion of many transmission lines nationwide. Recognizing the need for Federal agencies to coordinate their efforts on transmission and to quickly respond to issues, nine Federal agencies have been closely coordinating their review of electric transmission on Federal lands under a joint Memorandum of Understanding (MOU) executed in 2009.

Additionally, the President recently issued a memorandum stating that agencies should ensure that their processes for reviewing infrastructure proposals work efficiently to protect our environment, provide for public participation and certainty of process, ensure safety, and support vital economic growth.

Building on the cooperation developed through the MOU[2], and in response to the Presidential Memorandum, the Administration has created a Rapid Response Team for Transmission (RRTT). The RRTT aims to improve the overall quality and timeliness of electric transmission infrastructure permitting, review, and consultation by the Federal government on both Federal and non-Federal lands through:

- Coordinating statutory permitting, review, and consultation schedules and processes among involved Federal and state agencies, as appropriate, through Integrated Federal Planning;
- Applying a uniform and consistent approach to consultations with Tribal governments; and,
- Resolving interagency conflicts and ensuring that all involved agencies are fully engaged and meeting timelines.

Participating Agencies include: the Department of Agriculture, the Department of Commerce, the Department of Defense, the Department of Energy, the Department of Interior, the Environmental Protection Agency, the Federal Electric Regulatory Commission, the Advisory Council on Historic Preservation, and the White House Council on Environmental Quality.

The next steps for the permitting of these projects should consider the preparation of the NEPA (and CEQA for the North and South Projects) applications, and coordinating with the RRTT to establish these projects as ones needed the rapid response assistance.

8.10 PRELIMINARY AND FINAL DESIGN REQUIREMENTS

Conceptual designs have been completed within this effort at the level necessary to establish routing sufficient to evaluate land use requirements. In addition, preliminary engineering level cost estimates have been developed for each of the projects. All of this is necessary to move forward into the next phase of these projects. However, it is critical to understand that a final level design of each of the transmission lines and substations will be required. This effort will need to be initiated well into the permitting effort, once a good understanding of the final route alignments is established.

Final design will include the preparation of structure and conductor studies to determine the most optimum structure and conductor types to be used; design level surveying and mapping; modeling and line optimization; final structure sizing and analysis; complete material lists development; finalized plan and profile development; stringing and sagging calculations; final staking drawings; and preparation of a final construction package. This effort will also include

[2] Memorandum Of Understanding among the U.S. Department Of Agriculture, Department Of Commerce, Department Of Defense, Department Of Energy, Environmental Protection Agency, The Council On Environmental Quality, The Federal Energy Regulatory Commission, The Advisory Council On Historic Preservation, And Department Of The Interior Regarding Coordination In Federal Agency Review Of Electric Transmission Facilities On Federal Land; Executed October 23, 2009

the preparation and distribution of all necessary bid documents, along with the evaluation of submitted bids to provide a final recommendation to the project proponent as to the recommended contractor for the work.

8.11 PROPERTY AND RIGHT-OF-WAY ACQUISITION

Property acquisition will be one of the key elements that holds one of the greatest potentials for delaying a project. NEAC, as it moves forward in establishing the project team, must consider the need to have a partner who holds the right of eminent domain, also referred to as condemnation. This right is granted to utilities that have service territory in the area and are pursuing a project for public use, or, also afforded this right are governmental agencies. As an example in the case of Nevada, the State Department of Transportation (NDOT) frequently utilizes its right of eminent domain. This right will allow the project proponent to condemn a property in the event they are not able to reach a negotiated settlement of fair market value for a right-of-way or easement. A condemnation proceeding typically involves an assessment of how the project, in this case a high-voltage transmission line, will impact the remainder of the owner's property in question. Fair market value of the actual right-of-way that is being acquired is not typically a point of discussion at this stage. In some cases, a power line that takes a right-of-way along a property line arguably leaves the remaining property with no remaining economic value. This is the belief of many land owners. Conversely, the condemning agency or project proponent will view that the land is only encumbered to a minor extent and will therefore not impact its overall economic value. How these issues are resolved will set the stage for how quickly the project construction can begin. In many cases, courts allow construction to begin once condemnation is filed with the understanding that the land will be taken and the court will settle the issue of land owner compensation.

As a criterion in the routing of the lines proposed herein, the team opted to avoid private land whenever possible. However, there is still much land that is private. One of the next steps will be to establish land ownership identification. This will not need to be completed until the confidence level of the proposed routes becomes higher. Typically this will occur once the WECC path ratings have been completed and the NEPA / CEQA permitting is well underway. Monitoring of the permitting process will allow the project proponent to keep a pulse on the public and agencies acceptance of the preferred routing. Typically, actual land acquisition will not be initiated until the NEPA Record of Decision has been issued. In the event of a tight schedule, some proponents are willing to take a risk and initiate the negotiations prior to final permitting. This will all require a close review and coordination with the environmental consultant.