

**California Transmission Planning Group (CTPG)
Technical Study Team Response to the
May 27, 2011, Comments by Great Basin HVDC
on the CTPG's Proposed 2011 Work Plan**

Comment:

In the CTPG 2010 Phase 4 Final Report, the CTPG noted that a Northwest Nevada Transmission Corridor was a high priority. In January 2011, the WestConnect Sierra Subregion requested that the WECC TEPPC evaluate two projects within the subregion. One such project is Great Basin Energy Development, LLC's ("Great Basin HVDC") proposed nominal 1,000 MW underground HVDC link. Its purpose is primarily to bring renewable resources from northern Nevada to northern California. The eastern terminus of the HVDC line is proposed to be at NV Energy's Tracy switching station and the western terminus is proposed to be at Western Area Power Administration's ("Western") O'Banion switching station. Since publication of the 2010 Phase 4 Final Report, Great Basin HVDC has continued to make development progress on this project such as entering into a Memorandum of Understanding with Western under the federal Transmission Infrastructure Program. Great Basin HVDC has also made informational filings with the California ISO about the project and continues to work with interconnecting utilities, generators and corresponding load-serving entities.

Through this process, Great Basin has become aware of various needs, goals and benefits which would exist via a direct connection to the California ISO Balancing Authority Area ("BAA") beyond its O'Banion terminus. Great Basin acknowledges that transmission owners have mentioned that Great Basin's western terminus interconnection point could facilitate transmission system upgrades. These would lead to improved north-to-south transfer, reduction of the complexities of dynamic scheduling of thermal generation in the Yuba City area to the California ISO BAA, and provide voltage support and stability to the Balancing Authority of Northern California ("BANC") BAA. Additionally, substantial reliability enhancements will be achieved by the dynamic nature of voltage source commutated (VSC) HVDC supply injection.

Great Basin requests that the CTPG form an informal subcommittee or task force during the 2011 planning cycle to coordinate determination of the optimal interconnection of the Great Basin HVDC to the California ISO and BANC BAAs. Great Basin would expect that such a working group would include PG&E, WAPA, SMUD, TANC, and the California ISO. For example, Great Basin has been made aware that it might be desirable to consider a western terminus interconnection that includes a new 500-kV element between the O'Banion area and PG&E's proposed Collinsville switching station. This would bring needed generation into the north of San Francisco Bay Area. Another item for consideration would be the sizing of an autotransformer at an expanded O'Banion station to allow interconnection of the 230-kV and 500-kV systems at this location. Also, Great Basin has flexibility at this juncture to determine if its converter station with its native nominal 400-kV output voltage is to be stepped up to 500-kV or down to 230-kV. Finally, the western converter station could be a three-element HVDC system with output being split into both 230-kV and 500-kV. This configuration has more power flow flexibility but is also more expensive than Great Basin's baseline configuration.

Great Basin believes the Great Basin HVDC provides an opportunity to not only bring renewable energy, predominantly baseload geothermal energy, to northern California, but also offers a unique opportunity to construct a more robust and reliable transmission network for the area.

Great Basin is now requesting coordination between the transmission owners and operators to determine the best western terminus configuration which offers Northern California the greatest benefits at reasonable costs.

CTPG Technical Study Team Response:

As Great Basin HVDC notes, the CTPG Final Phase 4 Study Report identified the Northwest Nevada Corridor as a “High Potential transmission corridor.” This corridor would consist of new and/or upgraded transmission facilities from Northwestern Nevada into Northern California.

The CTPG concluded at the end of Phase 4 of its 2010 studies, that the Northwest Nevada Corridor warranted further study by the CTPG in 2011. The CTPG is now in the process of deciding exactly which study scenarios and renewable resource development portfolios will be evaluated in Phase 2 of the CTPG’s 2011 study work. A study scenario that evaluates whether new and/or upgraded transmission facilities within a Northwestern Nevada – Northern California corridor would mitigate reliability criteria violations that may arise with the addition of renewable resources sufficient to meet California’s renewable net short is one such candidate scenario. Great Basin HVDC’s interest in this study scenario is noted. Great Basin HVDC’s suggestions as to the technical details of how transmission infrastructure additions that mitigate reliability criteria violations could be configured is appreciated, and -- assuming a study scenario involving the Northwest Nevada Corridor is selected for evaluation -- will be reviewed for applicability to the particular reliability criteria violations identified. In addition, it is anticipated that the results of studies being done by the Sierra Sub-Regional Planning Group (SSPG) relative to the Great Basin HVDC project will be available to facilitate the CTPG’s consideration of this matter.

Great Basin HVDC requests that the CTPG form an informal subcommittee or task force during the 2011 planning cycle to coordinate determination of the optimal interconnection of the Great Basin HVDC to the California ISO Balancing Authority and Balancing Authority of Northern California¹ (“BANC”). At this point, the CTPG Technical Study Team does not foresee a need to form the requested subcommittee or task force. Should questions arise during the CTPG’s technical study work where input from Great Basin HVDC would be helpful, the CTPG Technical Study Team will solicit the assistance of Great Basin HVDC.

Finally, the CTPG Technical Study Team reminds stakeholders that while the CTPG will identify transmission infrastructure solutions that effectively mitigate reliability criteria violations found in the course of the CTPG’s technical studies, those solutions do not constitute a determination of whether the identified solution is the “best” solution among feasible alternatives. That determination will be made following the demonstration by project sponsors to the relevant jurisdictional governing bodies and permitting authorities (*e.g.*, the California Public Utilities Commission, the California ISO, city councils, Bureau of Land Management, *etc.*) that their proposed transmission infrastructure solution is economically, technically, operationally and/or environmentally superior to alternatives. Accordingly, it will be the responsibility of Great Basin HVDC to work with individual interconnecting transmission owners and Balancing Authority operators to determine how the Great Basin HVDC is best configured, and to demonstrate to jurisdictional governing bodies and permitting authorities that the Great Basin HVDC project is a better solution for addressing California’s transmission needs than other alternatives.

¹ Previously known as the SMUD Balancing Authority.