The Southline Transmission Project
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The Southline Transmission Project is a merchant transmission venture like SunZia (i.e., not associated with any utility) that has two components: (1) up to two new 345-kV transmission lines that would connect the Afton natural-gas generating station northwest of El Paso with the Apache generating station on the Willcox Playa southwest of Willcox (225 miles total, $325 M), and (2) the upgrading of the Western Area Power Administration's (WAPA's) 115-kV line to a double-circuit 230-kV line (two 230-kV lines on the same set of transmission towers) from the Apache generating station to the Saguaro generating station northwest of Tucson (130 miles total, $225 M) (Figure 1). For renewable resources in southwestern New Mexico and southeastern Arizona, the project is being sold on the same basis as the SunZia Southwest Transmission Project (excludes central New Mexico wind).

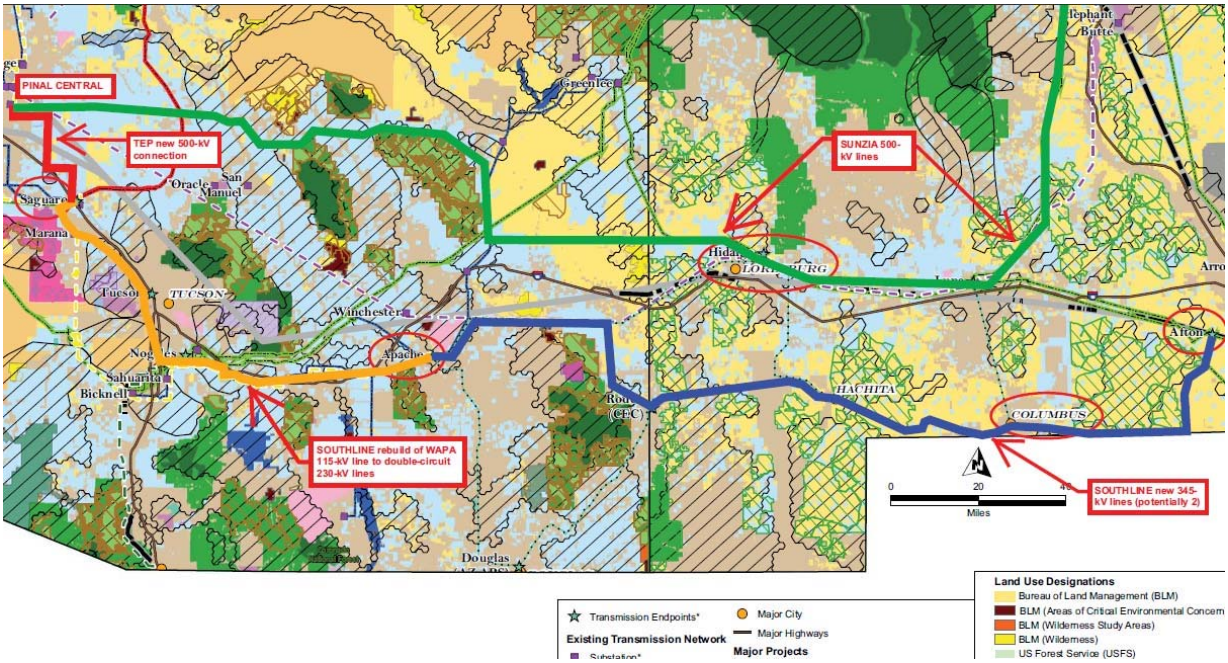

Figure 1. Comparison of SunZia's initial route (heavy green line) with the Southline route (heavy blue-orange-red lines). For the Southline Project, the blue line is for new 345-kV lines, the orange line is for the rebuild of the Western Area Power Administration's 115-kV line to a double-circuit 230-kV line, and the red line is TEP's new 500-kV line to Pinal Central, which will complete the Southline circuit.

Background on Developers

The project is a venture of Hunt Power, L.P. (associated with the Hunt oil and gas company) and is overseen by Black Forest Partners, L.P., with technical assistance from Utility Systems Efficiencies, Inc. and others. It specifically focuses on developing the solar energy resources in southwestern New Mexico. The project was first introduced into the public planning process in the fall of 2009. Tucson Electric Power Company and the Southwest Transmission Cooperative are both supportive of this project.

The two principals for Black Forest are Douglas Patterson and Bill Kipp, classmates who graduated from Dartmouth together in 1992. Perhaps most impressive is that Kipp has a certification in environmental studies from Dartmouth and was with Google from 2003–2009, where he was in charge of $500 M in annual revenue. He is from Lordsburg, New Mexico, and thus has personal ties to the area and is familiar with it. Together, Patterson and Kipp formed the Western Renewable Energy Development Company (WRED) in 2009 to develop renewable energy resources in the Desert Southwest. Before this, Patterson was with Goldman Sachs, where he began the Equity Investment business, which manages $2 billion in assets.

Overview of the Project

The project begins at approximately the mid-point of the SunZia Southwest Transmission Project and would complete a circuit to the Pinal Central substation where SunZia ends. The project will essentially parallel SunZia and compete for the same resources in southwestern New Mexico and Arizona. It is slated to be completed in 2014 at approximately the same time that SunZia would be. The project's objective is to complete a circuit to the Palo Verde generating station hub west of Phoenix and would make use of Tucson Electric Power Company's new 500-kV lines being constructed between the Palo Verde hub and the Saguaro generating station to do so.

This project is intended to serve predominantly solar energy resources in this area and would facilitate the development of up to 2000 MW of additional generating capacity. The system's capacity would be 1,500 MW for the two new 345-kV lines and 750 MV for the 230-kV lines. Transmission in the system would be bi-directional. Although not specifically stated, the system could potentially serve the Bowie power plant and help alleviate the transmission problems that the Southwestern Power Group has for the plant.

Environmental Impacts

The overlap and redundancy between the Southline and SunZia Projects is apparent, and constructing them simultaneously to serve the same area does not appear to make economic sense. Environmentally, the Southline Project is far more benign in Arizona and does not traverse any key environmentally sensitive areas. In New Mexico the corridor closely parallels the Mexico–New Mexico border for much of the distance and follows a preexisting, abandoned railroad right-of-way where possible. Within Arizona, the project follows an existing transmission corridor and right-of-way from the Apache generating station near Willcox to the Saguaro generating station north of Tucson.

The route has been selected to avoid any environmentally sensitive areas such as BLM wilderness or study areas. The project has many alternative subroutes envisioned within New Mexico and Arizona in case portions of this initial route are controversial or difficult to permit. While some resistance to the transmission upgrade is likely in the Tucson area, the new lines would be hung from single-pole tubular-steel transmission towers to conserve space. I would also hope that compact transmission line technology would be considered in order to further reduce impact.

Within Arizona the project very closely follows the central Tucson route seriously considered for the SunZia Southwest Transmission Project and seen by the Arizona environmental community as a potential solution for SunZia. Rather than bypass Tucson and provide no benefit to Pima County, however, the Southline project would interconnect with substations in the Tucson area to provide the area with power. If solar resources are developed in the Deming and Lordsburg area, this would provide Tucson and Pima County with access to them. It would also provide a full connection to the Pinal Central substation and central Arizona for power generated in southwestern New Mexico and southeastern Arizona.

Recommendation

On initial analysis it appears this project could be a positive alternative to SunZia as a major new east-west transmission connection between southwestern New Mexico and southern Arizona. Combining this with rerouting the SunZia Project north to the High Plains Express route for delivery of New Mexico wind energy to Arizona would complete the transmission scenario. A northerly SunZia route would also provide access for wind resources along the edge of the Colorado Plateau in Arizona. The Southline Project does not threaten highly sensitive environmental areas in southern Arizona as SunZia does, and combining it with the High Plains Express route to the north would provide new east–west power interconnections as envisioned by the Southwest Area Transmission planning committee (SWAT) while providing access to major renewable-energy resources in the region with less environmental impact.

Reference: http://www.southline-pcrg.com/documents/sline_mar_2010.pdf?attredirects=0&d=1
Project documents web link: http://www.southline-pcrg.com/documents

Summary of the Southline Project as Presented to the Western Electricity Coordinating Council by Black Forest Partners, L.P. on December 28, 2010

Background

The Southline Transmission Project (the "Southline Project") is a proposed interstate EHV transmission project designed to create a bi-directional connection between New Mexico and Arizona, specifically the El Paso region and the Palo Verde market hub outside Phoenix.

The Southline Project is sponsored by Southline Transmission, L.L.C., a subsidiary of Hunt Power, L.P. Hunt Power, L.P. develops and invests in entrepreneurial electric and gas utility opportunities, and is part of a larger privately owned group of entities managed by the Ray L. Hunt family that engages in oil and gas exploration and production, refining, power, real estate, ranching and private equity investments. Black Forest Partners, L.P. is the project manager of the Southline Project. Utility Systems Efficiencies, Inc. has served as technical consultant to the Southline Project.

The purpose of the Southline Project is to create an economic path to market for stranded existing and potential generation, including significant renewable resources in Southern NM and AZ, to improve the load-serving capabilities of regional entities, and to strengthen the reliability of the local systems.

Preliminary results suggest the Southline Project can help enable over 2000 MW of new generation in southern New Mexico and Arizona to be collected and delivered to the markets, while improving the load-serving capabilities of the regional entities and strengthening the reliability of the underlying system.

Preliminary Plan of Service

The preliminary plan of service is envisioned as a combination of three segments. The first section is a new-build 345-kV line originating at Afton switching station outside Las Cruces, NM and terminating at Apache switching station in southeastern AZ. The second segment is a proposed upgrade of Western's existing 115-kV line to a double-circuit 230 kV line from Apache to Saguaro. The third segment, from Saguaro to Palo Verde, is currently envisioned as a contractual acquisition of existing capacity or participation in the existing plans of other project sponsors.

Depending on final design choices, the Southline Project will conduct sufficient studies to demonstrate a non-simultaneous rating of 750 MW to 1500 MW of bi-directional transfer capability, with an estimated in service date of Q4 2014 and estimated costs of $325 million for the Afton-Apache segment and $225 million for the Apache-Saguaro segment. The total cost estimate is $550 million for the two Southline sponsored segments.

Available from: http://www.southline-pcrg.com/documents/Southline_SATS_PCRG_WECC_Notification_6172010_final.pdf?attredirects=0&d=1