

# EXPORTING RENEWABLE ENERGY: STRATEGIC TRANSMISSION EXPANSION PLAN



IID has proposed a multiregional strategic transmission expansion alternative to the California Independent System Operator and WestConnect that, as proposed, would expand the export of renewable energy to the state and the Southwest region while ensuring that the district maintains its balancing authority, meets federal and state regulations and replaces generation lost by the retirement of the San Onofre Nuclear Generating Station.

## INITIAL PHASE

The plan proposes the construction of a 2,200 megawatt 230 kV collector system in the IID service territory. IID proposes to finance, construct and upgrade its internal transmission network, creating an internal collector system that would facilitate the export of 1,100 megawatts to the CAISO and simultaneously another 1,100 megawatts to the WestConnect.

Construction would include:

- a double circuit 230 kV collector system, connecting six substations, creating a robust internal 230 kV network
- creation of two new substations
- development of a single 500 kV line, AC rated at 1,200 megawatts, to connect Arizona Public Service's North Gila substation to IID's Highline substation
- construction of a 1,100 megawatt 500 kV DC transmission line from the Salton Sea area to the San Onofre Nuclear Generating Station substation

As the need for additional renewable energy generation occurs, IID would be able to add a 500 kV collector system to the 230 kV system, upgrade the Path 42 line from 230 kV to 500 kV and add a second circuit on the DC line towers. These future upgrades would increase export from 2,200 megawatts under STEP Phase 1 to 4,100 megawatts.

## NORTH GILA TO HASSAYAMPA LINE

Also part of the initial phase, IID and Arizona Public Service continue to move forward as joint owners, with IID's participation being at least 20 percent, in the second North Gila (located east of Yuma, Ariz.) to Hassayampa 500 kV line (west of Phoenix, Ariz.). Permitted in 2008, IID's participation in this project fits perfectly with the STEP as the district will be able to import 240 megawatts of generation resources from the Palo Verde marketing hub and export 1,200 megawatts of renewable generation resources from IID's service area to Arizona/New Mexico.

## RATIONALE

This proposal aims to remove real barriers that limit the export of geothermal, solar/wind and other renewable technologies located in the Imperial Valley. The proposed STEP is a reliability and policy-driven project that would provide significant reliability and economic benefits to all ratepayers. The key to doing this is for IID to retain control of its balancing authority.

Additionally, it would provide an effective multiregional solution that would strengthen the grid in Southern California and reduce the impact of several existing CAISO transmission contingencies associated with the loss of major transmission lines.

Due to its strategic location and the considerable renewable resources located within the IID's service territory, improved transmission infrastructure in this region offers a wealth of benefits to a variety of stakeholders in the surrounding regional and interregional transmission area.

As a load-serving entity that operates one of five balancing authorities in the state, IID's transmission system connects to CAISO/Southern California Edison to the north, CAISO/San Diego Gas and Electric to the west and Western Area Power Administration/Arizona Public Service to the east. There is also a proposed interconnection to CFE in Mexico to the south.

## COSTS AND BENEFITS

IID proposes to allocate the cost of the collector system as an option to the off-takers of the renewable energy, along with IID's current cost recovery methodology defined in the OATT, eliminating IID transmission wheeling fees. This ensures that the cost of the collector system and associated upgrades are predetermined and fixed throughout the transmission service agreement.

IID's STEP helps the district protect its balancing authority while promoting transmission and governance of rates and cost management, ensuring that IID customer rates are maintained at the lowest possible level.

Due to the complexity and variables of the project, proposed total cost varies widely between \$431 million and \$1.7 billion. Costs will largely depend on the strategic partnerships IID can establish, the extent the district can control the collector ring and off load some of the costs as well as negotiations.

IID expects to hear from CAISO by the end of the first quarter of 2014 on its STEP proposal.

## ON THE HORIZON

California is approaching the second renewable portfolio standard compliance period (2014-2016) whereby utilities are required to provide a minimum of 25 percent of the energy from their supply portfolios with eligible renewable energy resources. The final compliance period (2017-2020) requires that amount to increase to a minimum of 33 percent in 2020. To date, many public officials have stated that they anticipate that renewable portfolio requirements will eventually surpass the 33 percent requirement.



