



2019-2020 Transmission Planning Process

Submitted by	Company	Date Submitted
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Smart Wires appreciates this opportunity to comment and commends CAISO on their ongoing efforts in the 2019/2020 Transmission Planning Process. Smart Wires is encouraged by the preliminary economic assessment results presented on 11/18.

We would like to make 2 suggestions for the CAISO's consideration:

1) Smart Wires is supportive of efforts to identify Power Flow Control solutions but requests that CAISO use a generic term when describing solutions that involve Power Flow Control

The term "series reactors" has been used in some proposed project solutions. We suggest that as a general rule, the CAISO should focus on the function and not a specific type of equipment. We understand that series reactors are an existing technology, and the term is very often used as a shorthand to denote a piece of equipment that adds reactance to a line. However, as newer technologies become available, such shorthand could be too confining. Just as we moved from using the term "shunt capacitors" to "shunt compensation" or "voltage support devices", we should also move from "series reactors" to the more generic term, "series compensation", "power flow control devices" or similar.

2) CAISO should evaluate power flow control devices as a solution for El Nido and Western LA Basin LCR reduction

From what we understand, the CAISO assessed 7 project alternatives to understand their impact on LCR for the El Nido and Western LA Basin Subareas, as shown below in Figure 1.

CAISO-Considered LCR Reduction Solutions and Request Window Project Submittal

	Name of Solutions	Submitter	Submission date	Target LCR reduction areas	500kV Voltage	230kV Voltage	DC Voltage (425kV)	Estimated costs (\$ million)
1	Install 350 MW BESS in El Nido subarea	CAISO	2019-20 TPP	El Nido		√		\$ 581
2	Upgrade La Fresa – La Cienega 230kV line (12 mi.)	CAISO	2019-20 TPP	El Nido		√		\$ 104
3	Install 350 MW BESS in Nido and 350 MW in Western LA Basin subareas	CAISO	2019-20 TPP	El Nido, Western LA Basin		√		\$ 1,162
4	Install BESS in Nido and Upgrade Mesa – Laguna Bell 230kV line	CAISO	2019-20 TPP	El Nido, Western LA Basin		√		\$ 631
5	Install 350 MW BESS in Nido subarea and Install 3 Ω Line Series Reactor on the Mesa-Laguna Bell 230kV line	CAISO	2019-20 TPP	El Nido, Western LA Basin		√		\$ 596
6	Upgrade La Fresa – La Cienega 230kV line and Install 3 Ω Line Series Reactor on the Mesa – Laguna Bell 230kV line	CAISO	2019-20 TPP	El Nido, Western LA Basin		√		\$ 119
7	Pacific Transmission Expansion HVDC Project	Western Grid Development, LLC	10/15/2019	Big Creek/Ventura LCR area and Western LA Basin	√	√		\$ 1,850

We've highlighted one submission, *Alternative 6*: La Fresa – La Cienega 230 kV line upgrade with a series reactor on Mesa – Laguna Bell 230 kV. In comparison to *Alternative 2*, the series reactor adds a considerable amount of benefit and positions *Alternative 6* to be the only alternative with a BCR greater than 1. It appears to us that an assessment of optimally placed power flow control devices in this area on the La Cienega 230 KV line and/or Mesa Laguna Bell 230 KV line would show even higher BCR ratios. We encourage the CAISO in continuing its investigation into power flow control solutions to optimize use of the transmission system going into the El Nido and Western LA Basin load areas.