



February 21, 2020

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California Independent System Operator  
250 Outcropping Way, Folsom, CA 95630

Dear CAISO Transmission Planning:

Western Grid Development LLC (“Western Grid”) appreciates the opportunity to comment on the CAISO’s Transmission Planning Report dated January 31, 2020. (“Draft TPP Report”). In particular, we want to focus these comments on three issues: 1) the CAISO’s conservative valuation of the Local Capacity Requirements (“LCRs”) reduction benefits Western Grid’s proposed Pacific Transmission Expansion Project (“PTEP”) will provide in the LA Basin; 2) other benefits of the PTEP; and 3) the CAISO’s determination of the congestion/production cost savings associated with the PTEP.

### **1. PTEP LCR Reduction Benefits**

We appreciate the CAISO’s determination that the PTEP will provide net 1,993 MW’s of LCR reduction benefits by reducing the LCRs in the LA Basin and, thereby, allowing 1,993 MW’s of existing gas plants to close in the West LA Basin and Big Creek/Ventura area. *Draft TPP Report at page 339.* However, the CAISO applied a very conservative value to the LCR benefits. In this regard, the CAISO stated that:<sup>1</sup>

The [PTE] project provides other benefits for which the CAISO is valuing with conservative assumptions at this time, due to uncertainty regarding future reliance on gas-fired generation for system and flexible needs.

The CAISO went on to explain that:

The uncertainty regarding the extent to which gas-fired generation will be needed to meet those system and flexible capacity requirements necessitated taking a conservative approach in this planning cycle in assigning a value to upgrades potentially reducing local gas-fired generation capacity requirements. The CAISO accordingly placed values on benefits associated with reducing local gas-fired generation capacity requirements *primarily on the*

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<sup>1</sup> *Id.* At 341



*difference between the relevant local area capacity price and system capacity prices. This conservative assumption was a key difference between the economic benefits calculated in this study, and the economic assessments stakeholders provided in support of their projects. The ISO recognizes that the capacity value of many of these projects will need to be revised when actionable direction on the need for gas-fired generation for system and flexible needs is available.<sup>2</sup>*

Western Grid believes that the LCR benefits when valued based on known facts demonstrates the PTEP is an economic alternative to procuring local resources and provides other benefits as well. With respect to the LCR studies performed in this year's cycle CAISO states on page 264 of the Draft TPP Report:

These studies were conducted under the economic analysis framework, as there is currently not a basis for identifying solutions on a reliability basis or policy basis. If there are sufficient local resources to maintain reliability, reducing the use of those resources is not necessary to meet NERC or ISO planning standards. Further, there are no applicable federal or state policies at this time that necessitate planning for reduced local capacity levels beyond state policies for generation relying on coastal waters for once-through-cooling, and those needs have been addressed in previous transmission plans.

It was recognized that actual viable economic-driven opportunities may be unlikely, but that even if that was the case, examining and understanding the needs – and the load, generation and system characteristics driving those needs, could be valuable in future resource procurement processes outside of the ISO's transmission planning process. In particular, the information regarding local requirement characteristics in all areas, and the scope of upgrades necessary to effect reductions in the areas selected for detailed studies - even if not currently economic - would be helpful to state policy makers and regulatory agencies in considering future policy direction or resource planning decisions.

Western Grid believes CAISO did not achieve its objective of providing helpful information to state policy makers and regulatory agencies by using conservative values for local capacity. Using realistic values for local capacity would have provided better information to CPUC for ensuring future policy decisions will evaluate the most cost-effective alternatives especially when considering the benefits

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<sup>2</sup> *Id* at 342 (emphasis added).



of long-lead solutions such as the PTEP. The CAISO’s valuation method produced prices in the LA Basin local capacity areas of \$1.39 and \$1.89/kW Month. However, as the CAISO found, the PTEP reduces the need for local capacity in those areas by 1,993 MW’s thereby avoiding the need to purchase that amount of local capacity and, thus, saving the cost differential between that local capacity and the lower cost of the PTEP.

Based on information publicly available from both the CPUC and FERC public files, Western Grid has been able to confirm that the Load Serving Entities (“LSEs”) have been incurring LCR costs that far exceed the cost of the PTEP. Based on the publicly available data reflected in Table 1, the weighted average price of local capacity contracts in the Western LA Basin is about \$15.84/kW-month<sup>3</sup>. Even if the contract prices for the three Once Through Cooling (“OTC”) units planned for retirement and shown in Table 2 are included, the average weighted price for gas-fired generation in the Western LA Basin is about \$8.90/kW-month (Table 3). This is based on an analysis of the publicly available data for existing LCR contracts totaling roughly 3,644 MW’s of existing gas plants in the LA Basin. By way of comparison, the LCR contract price needed to cover the PTEP cost is approximately \$7.35/kW-month<sup>4</sup>. Obviously, the price of LCRs will only rise in the future as the CPUC starts to plan for the retirement of the non-OTC gas units, particularly since there is no clear resource that can replace the reliability and flexibility currently provided by the gas plants other than an HVDC circuit like PTEP’s with its associated converter stations.

*Table 1. 2019 Average Capacity Cost for Western LA Basin Gas-fired Resources (not including retiring OTC units)*

Western LA Basin Generators (natural gas-fired)	2019 Avg Capacity Cost (\$/kW-Month)	NQC (MW)	\$/YEAR
El Segundo Energy Center	19.76	526.68	\$124,907,429
Malburg power plant	26.84	134	\$43,153,574
Walnut Creek Units	17.16	480.65	\$98,968,457
Long Beach Peakers (Hinson)	4.395	260	\$13,712,400
Harbor	3.925	99.99	\$4,709,529
<b>Total</b>	<b>14.42</b>	<b>1501.32</b>	<b>\$285,451,389</b>
<b>Weighted Average Cost</b>	<b>15.84</b>		

<sup>3</sup> This excludes the rate-based Western LA Basin gas-fired units owned by City of Anaheim, City of Vernon, City of Pasadena and Southern California Edison which have total NQC of around 537 MWs.

<sup>4</sup> Calculated based on using the \$2.405 billion estimated total capital cost used by CAISO in the Draft TPP Report on page 340.



Table 2. 2019 Average Capacity Cost for Western LA Basin Gas-fired Resources (retiring OTC units)

Retiring OTC Generators in Western LA Basin	2019 Avg Capacity Cost (\$/kW-Month)	NQC (MW)	\$/YEAR
Alamitos*	3.65	335.06	\$14,675,628
Huntington Beach*	3.65	451.55	\$19,777,890
Redondo Beach	4.25	1355.73	\$69,142,230
<b>Total</b>	<b>3.85</b>	<b>2142.34</b>	<b>\$103,595,748</b>
<b>Weighted Average Cost</b>	<b>4.03</b>		

Table 3. Summary 2019 Average Capacity Cost for Western LA Basin Gas-fired Resources

	2019 Avg Capacity Cost (\$/kW-Month)	NQC (MW)	\$/YEAR
<b>Total Table 1 and Table 2</b>	<b>10.45</b>	<b>3644</b>	<b>\$389,047,137</b>
<b>Weighted Average Cost</b>	<b>8.90</b>		

In terms of the need for system capacity, by order issued November 13, 2019, the CPUC has directed LSEs to purchase 3,300 MW’s of system capacity to be in service in the 2021-2023 time period(1-3 years from now).<sup>5</sup> To the extent that additional *system* capacity is a concern, certainly an additional 1,993 MW’s of system capacity can be acquired by the 2027 in-service date of the PTEP (7 years from now). Obviously, system capacity located outside the local capacity areas will be less expensive than capacity located in the local areas. Therefore, system capacity should be located outside the local areas and any such needs are not a basis for keeping gas plants in the local areas in service. Indeed, for this and other reasons, the PTEP will be developed and permitted to the maximum extent possible to allow for expansion.

With respect to the “flexibility” of gas fired plants, the PTEP with its associated converter stations are far more flexible than gas fired generation. The PTEP converters with their grid forming attributes, can respond much faster than the synchronous generators used on gas fired units. The faster

<sup>5</sup> “Decision Requiring Electric System Reliability Procurement for 2021-2023” issued November 13, 2019 in Docket No. R16-02-007.



response applies both in reaction time and impact for AC voltage control and frequency stabilization while providing effective short circuit capacity and system damping requirements.

## **2. Other Benefits of the PTEP**

The PTEP will allow the gas fired plants in the local capacity (coastal) areas to be replaced with renewable energy (including offshore wind) outside the local area. This will allow the associated high-priced land in the local areas to be used for other purposes. It will also improve air quality particularly in the LA area where the poor air quality falls disproportionately on disadvantaged neighborhoods.

In addition to the planned OTC retirements, there are approximately 3,658 MW's of gas fired plants *in the Western LA Basin alone* that will need to close by 2045 under the requirements of SB 100. The CAISO and major load serving entities have urged the CPUC to start planning for the shutdown of these gas plants as soon as possible and certainly by this summer. Therefore, using PTEP to allow closure of 1,993 MW's of gas plants in the LA basin by 2027 is an appropriate start on this long overdue and challenging effort.

The PTEP will provide reliability support to the Big Creek/Ventura Area of SCE, specifically within the Goleta area. The Goleta area is subject to voltage collapse issues under a double line (N-2) outage of the two 220 kV lines feeding Goleta substation from Santa Clara substation. The proposed PTEP will mitigate this issue by providing up to 500 MW into Goleta in the event of an outage. Further, as noted in the CAISO 2020 Local Capacity Technical Study, page 165, the Elwood generating station "will only be allowed to retire after suitable replacement is in place at or near the same bus (Goleta)". The PTEP is proposed to have a direct connection to Goleta substation and would serve as a viable replacement, several times over, for the Elwood generating station and eliminate the need for Elwood to be under a Reliability Must Run ("RMR") contract.

Finally, the PTEP reduces the risk of another wildfire cutting off electric service to the LA coastal area. The PTEP with its associated subsea cables would have allowed the lights to stay on in LA even without the local gas plants when service from the terrestrial lines from the east were cut off this past summer. With the vast number of MW's in the CPUC resource portfolio assumed to come from solar and batteries that will be located in the interior part of the State and will need additional transmission to reach the coastal population, it makes good sense to have at least some capacity delivered by subsea cables that do not involve the same wild fire risks.



### 3. PTEP Congestion /Production Cost Benefits of PTEP

CAISO production cost results show a load payment increase to CAISO ratepayers of \$10.8 million and a generation net revenue increase of \$21.5 million to CAISO ratepayers. This results in a production cost benefit (ignoring congestion revenue for the moment) of \$10.7 million to CAISO ratepayers. However, this production cost benefit is completely offset from the negative benefit quantified for lost CAISO Transmission revenue of -\$19.2 million, resulting in an overall net negative benefit to CAISO ratepayers of -\$8.5 million. Based on this result, Western Grid has questions regarding CAISO's TEAM approach based on the following:

- a) Figure 4.10-1 of the Draft TPP Report, the PTEP almost completely eliminates the south-to-north Path 26 corridor congestion cost along with other congestion costs identified by CAISO in the base case (~\$15 million reduction on Path 26 and \$4 million on other paths.) At the same time, the CAISO load costs increase by \$10.8 million which implies that overall Locational Marginal Prices ("LMPs") charged to load increased ~\$0.05/MWh on average<sup>6</sup>. Can CAISO elaborate on the drivers for the LMPs to load increasing by explaining in the final TPP report how the Default Load Aggregation Point ("DLAP") prices for PG&E, SCE and SDG&E load areas change from the Base Case to the with PTEP scenario?
- b) Congestion relief would typically tend to decrease LMPs charged to load rather than increase cost. However, CAISO's results are counter to this expectation. We interpret this result to imply that the effect of increasing cost to load while at the same time decreasing congestion cost is due to multiple hours with negative or depressed LMPs that were driven by oversupply conditions in the Base Case. If this is true, is it possible that the curtailment bid assumption used by CAISO negatively affected the net benefit result of the TEAM analysis for the PTEP? Western Grid questions whether or not the study correctly quantifies production cost benefits with respect to cost to load savings. Is it correct to start with a Base Case scenario where depressed prices due to oversupply conditions show a positive benefit to load? Even though it appears that LSE's have paid lower costs due to oversupply conditions, the bi-lateral contracts with the suppliers may require them to pay deemed deliveries for the curtailed MWs that are not cleared in the market. This cost for the deemed deliveries is not accounted for in CAISO's TEAM analysis. Western Grid believes that the avoided curtailment cost needs

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<sup>6</sup> This is derived based on a CAISO 2029 annual usage forecast of 218,694 GWh per Form 1.5a from the CEC Demand Update Forecast 2018-2030, Mid AEE and AAPV Savings Net Energy for Load by Agency and Balancing Authority dated January 2019.



to be considered as a benefit in the overall determination of the PTEP's Benefit Cost Ratio ("BCR").

- c) Table 4.10-3 in the Draft TPP Report also shows that PTEP provides a WECC Production cost benefit of \$7.3 million. We conclude from this outcome, in conjunction with the eliminated congestion on Path 26, that the PTEP allows the previously curtailed renewable energy to be delivered to the northern CAISO system or to other Balancing Authority Areas ("BAAs"). We believe this benefit should be included in the BCR calculation for PTEP and categorized as a Renewable Integration Benefit which is one of the stated TEAM benefit categories. The CAISO results clearly demonstrate that it will help "mitigate integration challenges, such as over-supply and curtailment, by allowing sharing energy and ancillary services among multiple BAAs."

We appreciate CAISO's consideration of our comments and stand ready to discuss these comments further or to generally discuss our project's benefits with the transmission planners.

Thank you for your consideration!

Sincerely yours,

A handwritten signature in black ink, appearing to read "Martin Walicki", written in a cursive style.

Martin Walicki