

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Develop an  
Electricity Integrated Resource Planning  
Framework and to Coordinate and Refine  
Long-Term Procurement Planning  
Requirements.

Rulemaking 16-02-007  
(Filed February 11, 2016)

**COMMENTS OF POWEREX CORP.  
ON ADMINISTRATIVE LAW JUDGE'S RULING SEEKING COMMENT ON  
PROPOSED REFERENCE SYSTEM PORTOLIO AND RELATED POLICY ACTIONS**

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Pursuant to the November 6, 2019 *Administrative Law Judge’s Ruling Seeking Comment on Proposed Reference System Portfolio and Related Policy Actions* (“Ruling”), Powerex Corp. (“Powerex”) provides the following comments.

The analytical approach employed by the California Public Utilities Commission (“Commission”) staff to develop the proposed Reference System Portfolio (“RSP”) is thorough and sound.<sup>1</sup> However, the Ruling recognizes that “one of the key *assumptions* that tends to drive the resource selection results is the amount of resource adequacy [(“RA”)] capacity available from imported electricity.”<sup>2</sup> As discussed more fully below, the Commission should revise its assumptions regarding the availability of import RA capacity. Specifically:

1. the “default” and “high” assumptions related to RA imports significantly overstate the quantities of forward capacity that will remain available for contracting in the month-ahead and year-ahead System RA procurement timelines; and,
2. the study’s assumptions regarding the volume of non-emitting specified-source energy deliveries available from Northwest hydro suppliers is also likely too high, as load-serving entities (“LSEs”) in other regions in the West expand their long-term procurement of Northwest hydro supply to meet their state-level environmental policy objectives.

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<sup>1</sup> The study and the associated documentation provide extensive and valuable detail regarding Commission staff’s methodology, data inputs, and results. The Commission staff made a careful effort to document pertinent assumptions and data inputs, which allows all interested parties to understand and comment upon these elements.

<sup>2</sup> Ruling, at 9 (emphasis added). In fact, Powerex’s historical deliveries are specifically cited as a basis for certain key assumptions in the study. *See* Attachment C of the Ruling, at 31.

## **I. IMPORT RA ASSUMPTIONS**

The 2019-20 study makes significant and important improvements in the assumptions regarding the availability of RA capacity from external supply sources:

In 2017-2018 RSP development, resource adequacy capacity available from imports was assumed to be at the maximum import capability level (approximately 11 gigawatts (GW)). In the 2019-2020 RSP development, different levels of resource adequacy capacity available from imports were modeled, with the default value set at 5 GW.<sup>3</sup>

### **A. The “Low” Assumption of 2,000 MW of RA Imports Is Reasonable**

Defining the “low” scenario for RA imports based on “CAISO’s contractual shares of Palo Verde, Hoover and Intermountain Power Plant,” which total approximately 2,000 MW, is reasonable and appropriate.<sup>4</sup> This assumption is consistent with both contractual or ownership interests in the external generation resources as well as rights that secure transmission service for delivery of such output to California. Thus, the “low” scenario reflects both resource capacity and transmission that is committed to serving California load throughout the study horizon.

### **B. The “Default” Scenario Overstates California LSEs’ Current Ability to Compete to Procure External Capacity**

Commission staff appears to have selected the “default” scenario of 5,000 MW of RA imports appears as “[r]eflecting historical levels of RA import capacity.”<sup>5</sup> The implicit assumption is that historical RA imports represent a reasonable forward-looking estimate. However, as described below, the “default” scenario should take into account the tightening Western grid. The California RA framework cannot realistically achieve the same levels of import RA procurement observed in the past absent significant changes. Accordingly, the

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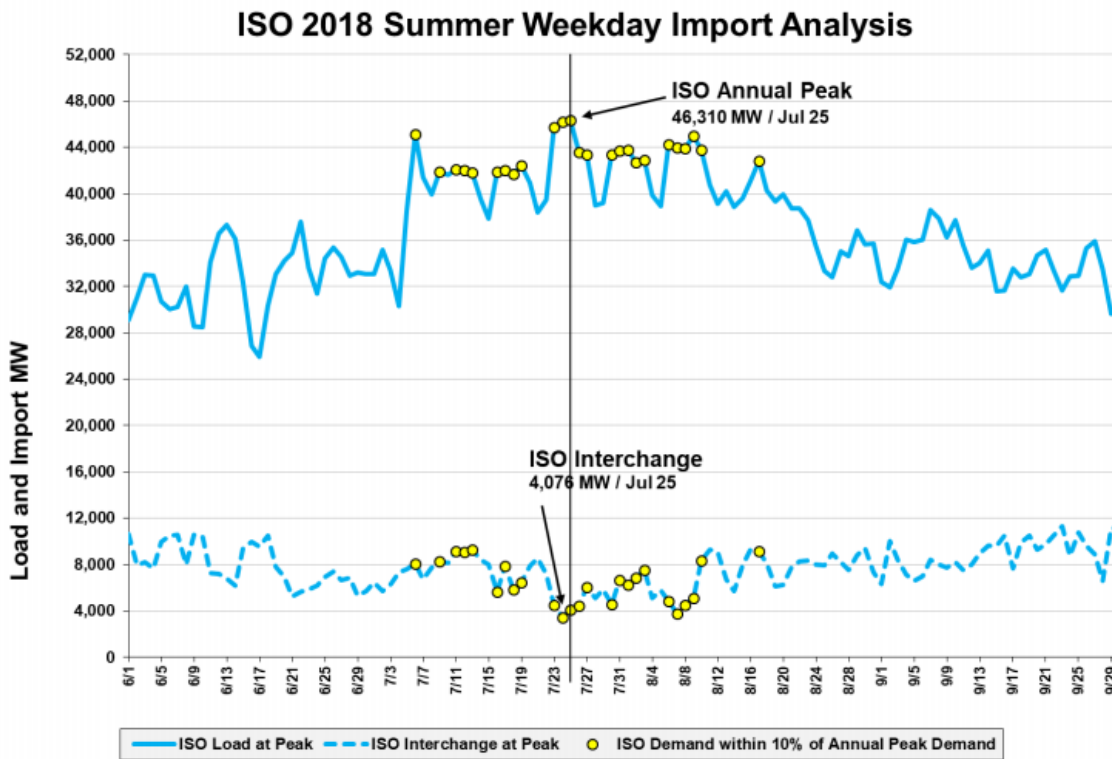
<sup>3</sup> Ruling, at 9-10.

<sup>4</sup> Attachment C, at 93.

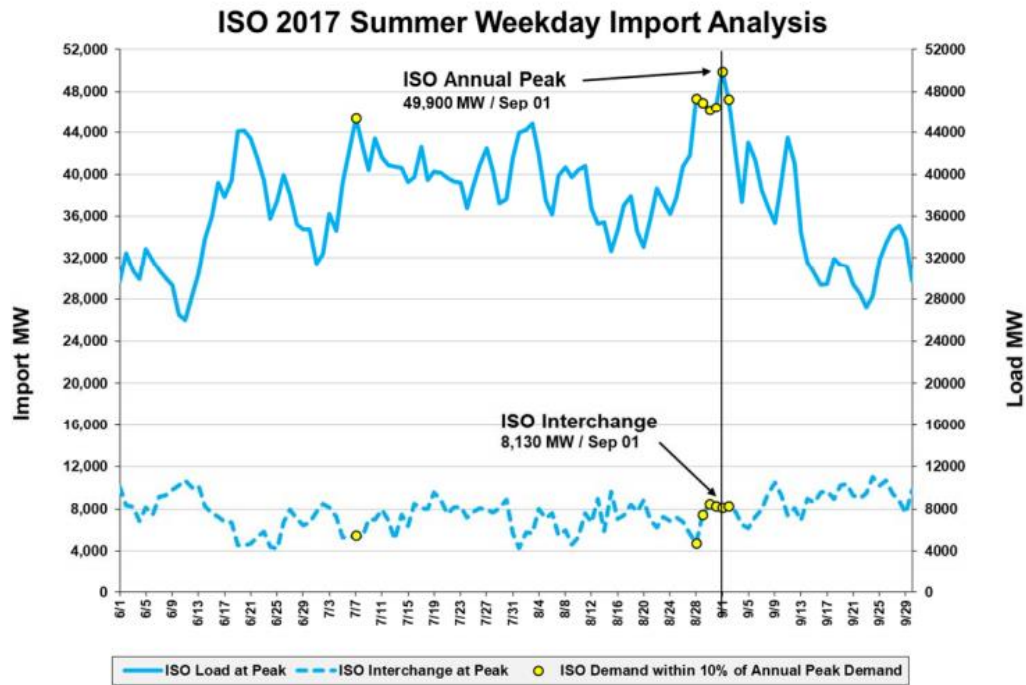
<sup>5</sup> Attachment C, at 93.

Commission should revise the “default” scenario to include the 2,000 MW of existing long-term contractual entitlements from the “low” scenario, plus an estimated 1,000 MW of RA imports that can be procured on a year-ahead basis, for total “default” RA imports of 3,000 MW.

First, during high load conditions across the West, when short-term market prices are elevated, the CAISO BAA is often only able to secure as little as 4,000 MW of import deliveries. The following two charts produced by the CAISO for the summer periods of 2017 and 2018 show this contraction of import deliveries:



Source: <http://www.caiso.com/Documents/Briefing-2019-SummerLoads-Resources-Assessment-Report-May2019.pdf>, Appendix B



Source: [https://www.caiso.com/Documents/Briefing\\_2018SummerLoads\\_ResourcesAssessment-Report-May2018.pdf](https://www.caiso.com/Documents/Briefing_2018SummerLoads_ResourcesAssessment-Report-May2018.pdf), Appendix C

These historical import levels reflect both real, physical capacity that may have been committed to California LSEs under month-ahead and year-ahead RA contracts as well as voluntary short-term energy deliveries from resources that were not under an RA obligation.

*Second*, as has been recognized in multiple different forums in recent months, supply conditions across the Western Interconnection are rapidly changing. The increased competition for forward commitment of surplus physical capacity under multi-year terms will materially reduce the amount of capacity that remains available to the CAISO BAA under month-ahead and year-ahead System Resource Adequacy contracts.

Substantial portions of the conventional fossil-fueled generation fleet in the West have been retired. Significant additional retirements are still to come. A recent WECC study documents over 22 GW of announced retirements in the next ten years with nearly half of the

total occurring by the end of 2020, and with many of these retirements *outside* of the CAISO BAA.

Name	Fuel	Size (MW)	Location	Retirement Date
Ocotillo	NG	220	AZ	7/1/2019
H Wilson Sundt 1,2	NG	162	AZ	8/31/2019
Battle River 3	Coal	148	AB	12/1/2019
Navajo 1-3	Coal	2310	AZ	12/22/2019
Inland Empire	NG	750	CA	12/31/2019
Colstrip 1,2	Coal	600	MT	12/31/2019
<b>2019 Retirements</b>		<b>4190</b>		
Alamitos 1-6	NG	2010	CA	12/31/2020
Boardman	Coal	550	OR	12/31/2020
Centralia 1	Coal	670	WA	12/31/2020
Huntington Beach 1,2 (Potential Delay)	NG	450	CA	12/31/2020
Ormond Beach	NG	1491	CA	12/31/2020
Nucla	Coal	100	CO	12/31/2020
Redondo Beach (Potential Delay)	NG	1310	CA	12/31/2020
<b>2020 Retirements</b>		<b>6581</b>		
Fort Churchill 2	NG	113	NV	12/31/2021
North Valmy 1	Coal	254	NV	12/31/2021
<b>2021 Retirements</b>		<b>367</b>		
Oakland	NG	165	CA	10/1/2022
Comanche 1	Coal	330	CO	10/31/2022
San Juan 1,4 (Potential Retirement)	Coal	847	NM	12/31/2022
Naughton 1,2 (Potential Retirement)	Coal	357	WY	2022
Jim Bridger 1,2 (Potential Retirement)	Coal	1063	WY	2022
<b>2022 Retirements</b>		<b>2762</b>		
Diablo Canyon 1	Uranium	1080	CA	11/30/2024
Centralia 2	Coal	670	WA	12/31/2024
Cholla 4	Coal	387	AZ	12/31/2024
Newman 1-3	NG	247	TX	12/31/2024
Scattergood 1,2	NG	326	CA	12/31/2024
<b>2024 Retirements</b>		<b>2710</b>		

Comanche 2	Coal	330	CO	10/31/2025
Diablo Canyon 2	Uranium	1080	CA	11/30/2025
Battle River 4	Coal	148	AB	12/31/2025
Craig 1	Coal	427	CO	12/31/2025
Fort Churchill 1	NG	113	NV	12/31/2025
Harry Allen 1	NG	76	NV	12/31/2025
Intermountain GS 1,2	Coal	1800	UT	12/31/2025
North Valmy 2	Coal	268	NV	12/31/2025
2025 Retirements		4242		
Battle River 5	Coal	148	AB	12/1/2027
Dave Johnston 1-4	Coal	762	WY	12/31/2027
2027 Retirements		910		
Harmac Biomass	BIO	55	BC	8/12/2028
Sheerness 1,2	Coal	816	AB	12/31/2028
2028 Retirements		871		
Total Retirements		22633		

Source: [https://www.wecc.org/Reliability/PricingEvent\\_Paper\\_Final.pdf](https://www.wecc.org/Reliability/PricingEvent_Paper_Final.pdf), Appendix 1.

As supply conditions tighten across the West, LSEs in both the Pacific Northwest and Desert Southwest will have increasing demand to secure capacity to meet their load obligations. More specifically, external LSEs with an existing RA deficit, as well as external LSEs with emerging deficits (largely a result of upcoming retirements of coal-fired resources), are increasingly seeking forward capacity and/or forward firm energy supply, delivered from clean resources. The typical term of such forward procurement contracts is 5 years to 20 years. Such longer-term contracts are necessary to enable the purchasing LSEs to delay and/or avoid the buildout of additional capacity resources that would otherwise be necessary.

*Third*, in addition to the lack of a multi-year contracting mandate, California’s RA framework faces numerous additional challenges in seeking to compete for external supply. In particular, the allocation of Import Capability does not support contracting with external resources because:

- Import Capability is allocated only one year at a time, making it challenging for a California LSE to commit to RA contracts beyond one year; and

- The Import Capability allocation mechanism frequently results in allocation to California LSEs that do not actually procure import RA, and there is no effective mechanism for re-allocating unused Import Capability.

While the Commission and CAISO are exploring enhancements to the RA program, including consideration of improvements to the allocation of Import Capability, these enhancements are unlikely to promote robust contracting beyond one year at a time. Thus absent a framework that promotes long-term contracting with external resources, it is likely that a large fraction of available surplus Northwest hydro capacity will already be committed to other entities outside of California by the time that California LSEs seek to obtain RA imports for a given compliance year.

**C. The “High” Scenario Should Reflect Effective California Procurement of Northwest Hydro**

A credible “high” scenario should be based on highly successful procurement by California LSEs of Northwest hydro capacity on a longer term basis, largely limited by transmission capability between the Northwest and California. Under fully rated conditions (*i.e.*, with all transmission facilities in service and at full rating), the CAISO-controlled shares of the California-Oregon Intertie and the Pacific DC Intertie total approximately 4,800 MW. A reasonable “high” case might therefore assume 4,000 MW of RA imports from the Northwest, plus the 2,000 MW of long-term existing entitlements assumed in the “low” scenarios, and no additional RA imports from the Southwest. Thus, the Commission should assume up to 6,000 MW of RA imports as its “high” case in the study.

However, the study’s “high” scenario currently assumes RA imports equal to the entire 11 GW of CAISO Maximum Import Capability. This is simply not realistic. Even under a comprehensive overhaul of California’s forward procurement framework, external supply can only be committed to serve *California* load if the supply is surplus to the native load obligations



of the source entity. Such surplus capacity is potentially available only from certain hydro entities in the Northwest region (which include some entities with year-round surpluses as well as entities with seasonal surplus capacity due to the winter-peaking nature of their systems). Neither annual nor seasonal surplus capacity appears to be available from entities in the Southwest region as that region's summer capacity supply is tightening rapidly.

## **II. GREENHOUSE GAS ASSUMPTIONS**

The study assumes that historical levels of non-emitting specified-source deliveries will remain constant going forward. However, the Commission should modify the study to reflect scenarios under which non-emitting specified-source attributes from Northwest hydro resources are limited to less than historical levels and consistent with the assumptions regarding RA import levels discussed above.

The RESOLVE model dispatches supply from a modeled “NW\_Hydro\_for\_CAISO” zone that reflects “dedicated import into the CAISO” from Northwest hydro resources.<sup>6</sup> The capacity and available energy from Northwest hydro is based on historical deliveries from Powerex and from Bonneville Power Administration.<sup>7</sup> Energy dispatched from Northwest hydro resources is treated as non-emitting specified-source imports. Moreover, the modeling assumptions regarding the dispatch of Northwest hydro resources is constant across all modeling scenarios and unrelated to RA import assumptions. Specifically, it is noted that the “[a]nnual specified imports (in GWh/yr) are converted to an installed capacity using the annual capacity factor of NW Hydro – this is for modeling purposes and is not meant to reflect contractual obligations for capacity.”<sup>8</sup>

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<sup>6</sup> Attachment C, at 79.

<sup>7</sup> Attachment C, at 31.

<sup>8</sup> Attachment C, at 31.

In addition to the growing demand for the forward commitment of capacity discussed above, demand is growing across the West outside of California to secure capacity specifically from resources that support the evolving environmental policy goals of these other jurisdictions. The table below, excerpted from WECC’s analysis of the March 2019 event, highlights the ambitious goals that states throughout the West have set:

State	Renewable or Clean Energy Standard	Target	Year
Arizona	Renewable Portfolio Standard	15%	2025
California	Renewable Portfolio Standard	60%	2030
	Clean Energy Standard	100%	2045
Colorado	Renewable Portfolio Standard	30%	2020
	Clean Energy Goal	100%	2045
Montana	Renewable Portfolio Standard	15%	2015
Nevada	Renewable Portfolio Standard	50%	2030
	Clean Energy Goal	100%	2050
New Mexico	Renewable Portfolio Standard	80%	2040
	Clean Energy Standard	100%	2045
Oregon	Renewable Portfolio Standard	50%	2040
Utah	Renewable Portfolio Goal	20%	2025
Washington	Renewable Portfolio Standard	15%	2020
	Clean Energy Goal**	100%	2045
Wyoming	None		

Source: [https://www.wecc.org/Reliability/PricingEvent\\_Paper\\_Final.pdf](https://www.wecc.org/Reliability/PricingEvent_Paper_Final.pdf), Table 1.

\*\* Since this report was published, Washington State passed the Clean Energy Transition Act, which sets a 2030 "greenhouse gas neutral" standard and 2045 100% renewable/non-emitting electricity standard.

Meeting these goals likely means that specified-source imports cannot be assumed to simply be available to supply California in the same levels as in recent years. LSEs will increasingly need to secure the environmental attributes of specified resources under longer-term contracts, either as part of forward RA commitments or as stand-alone forward arrangements for specified-source energy deliveries.

Respectfully submitted,

/s/

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