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GridLiance West Comments on Resource Portfolio for 20-Year Outlook

Additional submitted attachment is included below.

July 6, 2023

RE: Proposed Starting Point Portfolio for SB100 Implementation Planning

TO: California Energy Commission, Public Utilities Commission, and California Independent System Operator

GridLiance West LLC (GLW) is a Participating Transmission Owner (PTO) in the California Independent System Operator (CAISO) that owns and operates approximately 165 miles of 230-kilovolt (kV) high-voltage transmission lines and related substation infrastructure located in rural southern Nevada. The southern Nevada region served by GLW offers diverse and substantial renewable resource potential to help California meet its decarbonization goals. At present, over 21 gigawatts (GW) of solar/storage hybrid, wind, and geothermal resources have submitted requests into the CAISO interconnection process or executed interconnection agreements to interconnect to the GridLiance West system.

GLW is pleased to provide these comments on the proposed Starting Point portfolio presented at the California Energy Commission (CEC)–hosted June 23, 2023 workshop. GLW appreciates the efforts of the CEC, the Public Utilities Commission (CPUC) and the CAISO (collectively, the "Agencies") toward developing a portfolio that best represents the expected future of renewable energy generation in 2045.

GLW's comments focus on the proposed allocation of the incremental clean energy and storage resources in the portfolio as compared to the 2021 SB 100 scenario. In particular, land screens, commercial interest, lower costs, and speed-to-build indicate that southern Nevada is a highly viable development area; however, this result does not appear to be reflected in the proposed Starting Point portfolio.

Ensuring development in the CAISO's Southern Nevada region is critical to meeting SB100 goals at reasonable cost

The CAISO's 20-year study will indicate what bulk transmission upgrades are necessary to meet SB100 goals while minimizing costs. It is very important that the portfolio prioritize projects that optimize siting considerations to the greatest extent possible. Not studying projects in areas with low development costs and high viability from a siting perspective could result in optimal transmission upgrades being overlooked and thereby precluding future deliveries from those low-cost, viable, areas of the grid. CPUC Staff indicated in its Draft Inputs and Assumptions document in the CPUC's Integrated Resource Planning (IRP) process[1] that the CPUC is considering the 2023 – 2024 TPP Base Case portfolio, the CAISO's interconnection queue (through QC14), and land use screens.[2] For several reasons described below, GLW recommends that CEC ensures that the Starting Point portfolio not understate the significant potential for cost-effective development in southern Nevada.

Southern Nevada has extensive lands available for development

GLW recommends that the Starting Point portfolio substantially increase the amount of renewable generation development potential in southern Nevada. In prior comments, GLW has proposed an application of the CEC's layering analysis and has indicated that solar potential in, and proximate to, the southern Nevada CAISO grid is close to 2,000 GW.[3] In its Draft IRP Inputs and Assumptions document, the CPUC Staff has proposed to use a solar potential of 80 GW for southern Nevada.[4] The CPUC's proposed 80 GW solar potential for Southern Nevada appears significantly higher than the level of solar siting assumptions proposed in the Starting Point portfolio, which is approximately 2 GW.

[1] CPUC Inputs and Assumptions Document, 2022 – 2023 Integrated Resource Planning, CPUC Docket No. R.20-05-003, June 2023.
[2] GLW has not seen detailed Starting Point portfolio mapping logic, or workbook(s), to fully understand the decision points used in the proposed mapping. These comments are based on the CEC workshop and accompanying presentation.
[3] GLW comments in response to the CEC's Land-Use Screen workshop, submitted March 30, 2023, p. 7.
[4] CPUC Inputs and Assumptions Document, at p. 58.

Similarly, available lands for wind and geothermal development in southern Nevada suggest strong potential for additional development of these resources.[5] However, despite this documented potential, no additional southern Nevada area wind and geothermal siting was proposed in the Starting Point portfolio.

It is important that the Starting Point portfolio appropriately recognize the renewable-rich potential for development in southern Nevada. In total, available lands for development in southern Nevada exceed those of areas with similar potential for high-quality renewables development. For example, as indicated above, the CPUC has proposed to apply a solar potential of 80 GW for southern Nevada, as compared to the potential for other southern California renewable regions range from 10.5 GW to 33 GW.[6] Similarly, the CPUC proposes southern Nevada wind potential is estimated at over 2 GWs, while the development potential in California renewable regions is estimated between 0 GW and 1.45 GW.[7]

Commercial interest in the CAISO's southern Nevada region is very strong

This strong potential for renewable development in southern Nevada is illustrated by the strong commercial interest of renewable developers in interconnecting to the CAISO transmission grid in southern Nevada. There currently are over 21 GW of solar, storage, geothermal, wind, and hybrid resources seeking interconnection to GLW's system in southern Nevada within the CAISO queue. This interest has continued with the most recent CAISO queue cluster 15, where the GLW transmission assets were highly sought after by developers, with over 15 GW of proposed projects entering the GLW queue. In addition to the ample availability of developable land discussed above, this interest is driven also by high-quality renewable resources (solar pentation, wind speeds, and geothermal fields), a constructive permitting process that allows for streamlined development, and relatively lower cost of developing resources in Southern Nevada. Southern Nevada's recent commercial interest demonstrated in queue cluster 15 is disproportionately higher than similar CAISO renewable areas, as demonstrated in the table below.

[5] GLW comments in response to the CEC's Land-Use Screen workshop, submitted March 30, 2023, p. 7.
[6] *Id*.
[7] *Id*.

Table 1. Commercial Development Interest in Southern NV relative to Other Regions

Attribute	CAISO Renewable Region		
	Southern Nevada	Tehachapi	Greater Imperial
Existing Resources in CAISO Queue (through Cluster 14)	6 GW	13 GW	11 GW
New Resources added in CAISO Queue 15	15 GW	18 GW	12 GW
Relative Interest via CAISO Queue 15	**2.5x**	**1.4x**	**1.1x**

Transmission build-out costs in southern Nevada are lower than those needed elsewhere

GLW recommends that the Starting Point portfolio recognize that the expected cost of needed incremental transmission upgrades to deliver renewable energy from the southern Nevada/southern California desert are relatively less costly than many of those upgrades that would be needed elsewhere on the grid. The CAISO indicated that the 20-year study is intended to identify transmission challenges and provide a high-level analysis of the feasibility of alternatives.[8] However, it is unclear whether the Agencies applied a criteria of cost effectiveness to the likely transmission needed to support the Starting Point portfolio proposed build out. GLW recognizes that it may be difficult do so, given the "chicken-and-egg" problem that perfect information regarding the costs of transmission upgrades are not available in advance of the CAISO's 20-year study itself. This challenge is one the CPUC and CAISO face in the development of each IRP cycle's portfolio in the RESOLVE set up and busbar mapping processes. However, disregarding the relative costs of transmission upgrades would be a significant shortcoming of the Starting Point portfolio. Said otherwise, to assume that all bulk upgrades driven by the Starting Point portfolio would be equally costly necessarily creates a distortion in the study. If the CPUC staff, for example, applied a strict pro-rata assignment of additional renewables needed for the 2045 case, the resulting portfolio would cause the study of a future state that is suboptimal to the extent the bulk upgrades substantively vary in costs.

[8] Resource Portfolio Assumptions for the Next CAISO 20-Year Transmission Outlook, Joint agency staff presentation, June 23, 2023, p. 15.

GLW also notes that the CAISO has recently approved transmission upgrades in the southern Nevada area, which would enable an additional 11 GW of renewable resources to interconnect in southern Nevada.

The Starting Point portfolio should increase expected resource builds in southern Nevada to ensure the full study of expected least cost renewable development

Considering the various factors identified above, the Starting Point portfolio seems to understate the expected future renewable development in the CAISO's southern Nevada renewable region. To exemplify this, GLW offers the table below, comparing attributes of the southern Nevada renewable region with that of the Tehachapi and Greater Imperial regions.

Attribute	CAISO Renewable Region		
	Southern Nevada	Tehachapi	Greater Imperial
Solar Potential from 6/23 Inputs and Assumptions	**80.24 GW**	33.29 GW	10.55 GW
Solar or Solar + Storage Resources in CAISO Queue	**17.3 GW**	15.7 GW	6.0 GW
Cost of Transmission Upgrades Previously Identified ($/MW)[9]	**$100,000**	$357,472	$1,309,835
Solar Sited in 23-24 TPP Base Case	**4.9 GW**	6.9 GW	1.0 GW
Solar Siting in Proposed New Starting Point	**6.3 GW**	9.0 GW	4.8 GW
% Increase in Proposed New Starting Point Solar Siting	**28%**	30%	403%

As indicated by the table, while southern Nevada has significantly greater solar potential, significantly larger solar development interest (queue size), and less expected transmission upgrade costs, the proposed Starting Point portfolio proposes to add relatively less of the additional needed resources to southern Nevada.

GLW respectfully requests that the Agencies set the solar siting in southern Nevada to 20 GW. This would reflect 11 GW already enabled by the transmission upgrades approved by the CAISO as part of 2021-2022 and 2022-2023 Transmission Planning Processes, as well as an additional 9 GW of solar which would be enabled by an additional limited upgrade in the GLW footprint – upsizing of the Trout Canyon to Beatty transmission path from 230 kV double-circuit to 500 kV

[9] Compares cost effectiveness of Beatty 500 kV Upgrade (Southern Nevada) with the SCE Northern Upgrades (Tehachapi) and Imperial Valley – Serrano 500 kV line (Greater Imperial) based on the CAISO 2021 Transmission Capabilities White Paper.

double circuit. This project will enable an additional 3 GW of Full Capacity Deliverability Status (FCDS), or ~9 GW of FCDS and Energy Only resources, for an incremental cost of ~$300 MM, reflecting its very high cost-effectiveness.

This level of Starting Point solar for the southern Nevada region of CAISO would ensure that the 20-year study examines the level of build out already anticipated. GLW similarly requests that the storage allocated to GLW be increased proportionally with this requested solar increase.[10]

Aligning the proposed Starting Point portfolio with where the renewable build is predicted to be most likely is critical to the value of the CAISO's 20-year study. GLW appreciates the Agencies' consideration of these comments.

Sincerely,

/s/ Alona Sias

Alona Sias
President, GridLiance West

[10] GLW has not offered a specific recommended storage siting amount, recognizing that the CPUC has placed some storage in local areas at sites of retired gas facilities. If the specific storage allocation/mapping logic is made available, GLW would be pleased to examine it and recommend a specific adjustment to the storage siting.