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R2005003

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Continue Electric Integrated Resource Planning and Related Procurement Processes.

Rulemaking 20-05-003

ADMINISTRATIVE LAW JUDGE'S RULING SEEKING COMMENTS ON ELECTRICITY RESOURCE PORTFOLIOS FOR 2023-2024 TRANSMISSION PLANNING PROCESS

Summary

This ruling invites comments on proposed electricity resource portfolios for use in the California Independent System Operator's (CAISO's) 2023-2024 Transmission Planning Process (TPP). The ruling also includes information about mapping of the resources in the base case portfolio to specific busbars on the transmission system.

Comments in response to this ruling should be filed and served no later than October 31, 2022, with reply comments filed and served no later than November 10, 2022.

This ruling also sets the schedule for the filing of additional comments in the proceeding.

1. Background

As part of the longstanding agreement between the California Energy Commission (CEC), CAISO, and this Commission to collaborate on electricity resource and transmission planning, every year Commission staff develop a

recommended set of portfolios for the CAISO to use in its annual Transmission Planning Process (TPP).

The portfolios currently under analysis for the CAISO 2022-2023 TPP were adopted in Decision (D.) 22-02-004, with the busbar mapping of the sensitivity portfolio transmitted by Commission staff to the CAISO on July 1, 2022.¹

Generally, in each TPP cycle, the CAISO evaluates a reliability and/or policy-driven base case portfolio. Under the CAISO tariff adopted by the Federal Energy Regulatory Commission (FERC), if the results of the base case analysis show the need for additional transmission development, the transmission projects are brought to the CAISO Board for approval in the spring of the second year of the TPP. If approved by the CAISO Board, under the FERC tariff, the project would receive cost recovery through the transmission access charge (TAC).

Along with the base case analysis that generally leads directly to transmission project approval, in each TPP cycle the CAISO typically analyzes one or more sensitivity portfolios. The purpose of the sensitivity portfolio analysis is not to lead directly to transmission development immediately, but rather to assist in future planning by identifying relevant transmission needs and potential costs.

D.22-02-004 included both a base case and a sensitivity portfolio that the CAISO is in the process of analyzing for the current TPP cycle. The base case portfolio was based on the scenario that achieves a 38 million metric ton (MMT) greenhouse gas (GHG) emissions target in 2030 using the CEC's 2020 Integrated

¹ Details of the sensitivity portfolio for the 2022-2023 TPP are available at the following link: <https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-power-procurement/long-term-procurement-planning/2019-20-irp-events-and-materials>

Energy Policy Report (IEPR) mid demand forecast with high electric vehicle (EV) assumptions.

The 2022-2023 TPP sensitivity portfolio was based on a GHG target of 30 MMT by 2030 using a higher load scenario, the CEC's 2021 IEPR Additional Transportation Electrification (Additional TE) grid planning scenario. The Additional TE scenario reflects higher loads, taking into account the policy and market drivers pointing towards higher levels of transportation electrification, and could push the transmission system further to its limits and identify potential additional transmission investments needed.

For several IRP and TPP cycles now, a typical pattern has been for the Commission to request that a sensitivity portfolio be analyzed in one TPP cycle, and then, once the portfolio has been fully analyzed for its transmission needs, to request that same scenario as a base case in a future cycle. In that way, the Commission, CAISO, and CEC have been progressing toward portfolios that meet tighter GHG requirements in each subsequent IRP and TPP cycle. This ruling's recommendations would accelerate the past approach.

2. Recommended 2023-2024 Base Case Portfolio

This section describes the reliability and policy-driven base case portfolio that Commission staff recommends be analyzed by the CAISO in the 2023-2024 TPP cycle. The recommended scenario includes an electric resource portfolio that meets a 30 MMT GHG target in 2030 and uses a higher load scenario, the CEC's 2021 IEPR Additional TE scenario.

This recommendation is for the most aggressive portfolio currently being analyzed in the 2022-2023 TPP, to be used for purposes of assessing transmission needs in the 2023-2024 TPP.

Studying the transmission impacts associated with this 30 MMT High Electrification (HE) portfolio will help the State move toward planning for a higher electrification future and identify any incremental infrastructure needs, given existing and new policy drivers regarding high electrification. Staff recommends that CAISO begin undertaking necessary studies to inform and enable the development of incremental transmission capacity to support the increased renewable resources needs associated with the State's higher electrification future. This 30 MMT HE portfolio is recommended because transmission development typically takes several years longer than the development of the generation or storage resources that will interconnect to the transmission system. Thus, planning for transmission needs to be ahead of the planning for the electricity resources, in order to be available when the generation or storage is developed. This purpose is distinct from the GHG target requirements already placed on the load serving entities (LSEs) for use in their individual IRPs to be filed on November 1, 2022, where the LSEs are required to plan for 38 MMT and 30 MMT GHG targets by 2030 using 2021 IEPR mid demand forecast. Therefore, it is possible that the Commission may adopt a TPP base case resource portfolio with a more stringent GHG target than previously adopted as part of the Preferred System Plan (PSP).

In addition, the TPP process typically plans ten years in advance for transmission resources, which would mean the portfolio in the 2023-2024 TPP would extend through 2033. However, this year Commission staff are proposing to expand the base case info provided to the CAISO out to 2035, to align with the CEC's most recent load scenarios, which also extend to 2035. The Commission would transmit mapped results of the base case portfolio for both 2033 and 2035. Future portfolios that are conveyed to the CAISO will also need to include a

resource portfolio that extends at least 15 years, as required by Senate Bill (SB) 887 that was recently passed and signed by the Governor on September 16, 2022. SB 887 also requires the Commission to request, by January 15, 2023, for the CAISO to identify the highest priority transmission facilities that are needed to allow for increased transmission capacity into local capacity areas.

For this 2023-2024 TPP, the proposed base case portfolio results, as analyzed in the RESOLVE capacity expansion model, are available at the following link: <https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-power-procurement/long-term-procurement-planning/2022-irp-cycle-events-and-materials/portfolios-and-modeling-assumptions-for-the-2023-2024-transmission-planning-process>

Figure 1 and Table 1 below summarize the resource buildout results for the proposed 30 MMT HE base case portfolio using the 2021 IEPR Additional TE scenario and compare the amount of new resources in 2033 and 2035 with the amount new resources included in the base case portfolio analyzed for the 2022-2023 TPP, the results of which are not yet finalized. These capacity totals are shown prior to any baseline reconciliation, so the proposed base case portfolio is utilizing the same baseline as the 2022-2023 TPP portfolios. This older baseline aligns with the baseline the CAISO utilized to develop its transmission capability estimates. Maintaining this baseline ensures that all new resources are properly included within transmission constraints. Thus, capacity totals for the portfolio include recently-online resources and in-development resources that LSEs have contracted with but that are not yet online.

The 2022-2023 TPP base case portfolio's capacity totals included approximately 3 GW of resources that were newly online at the time of portfolio

development, while the proposed 2023-2024 TPP base case portfolio includes approximately 6.8 GW of new online resources. These baseline reconciliation resources were instead forced into the RESOLVE build portfolio to properly account for their transmission utilization. These resources were then separated out from the new generic RESOLVE resources in the busbar mapping process.

Figure 1: Capacity of New Resources Included in Base Case TPP Portfolios (in GW)

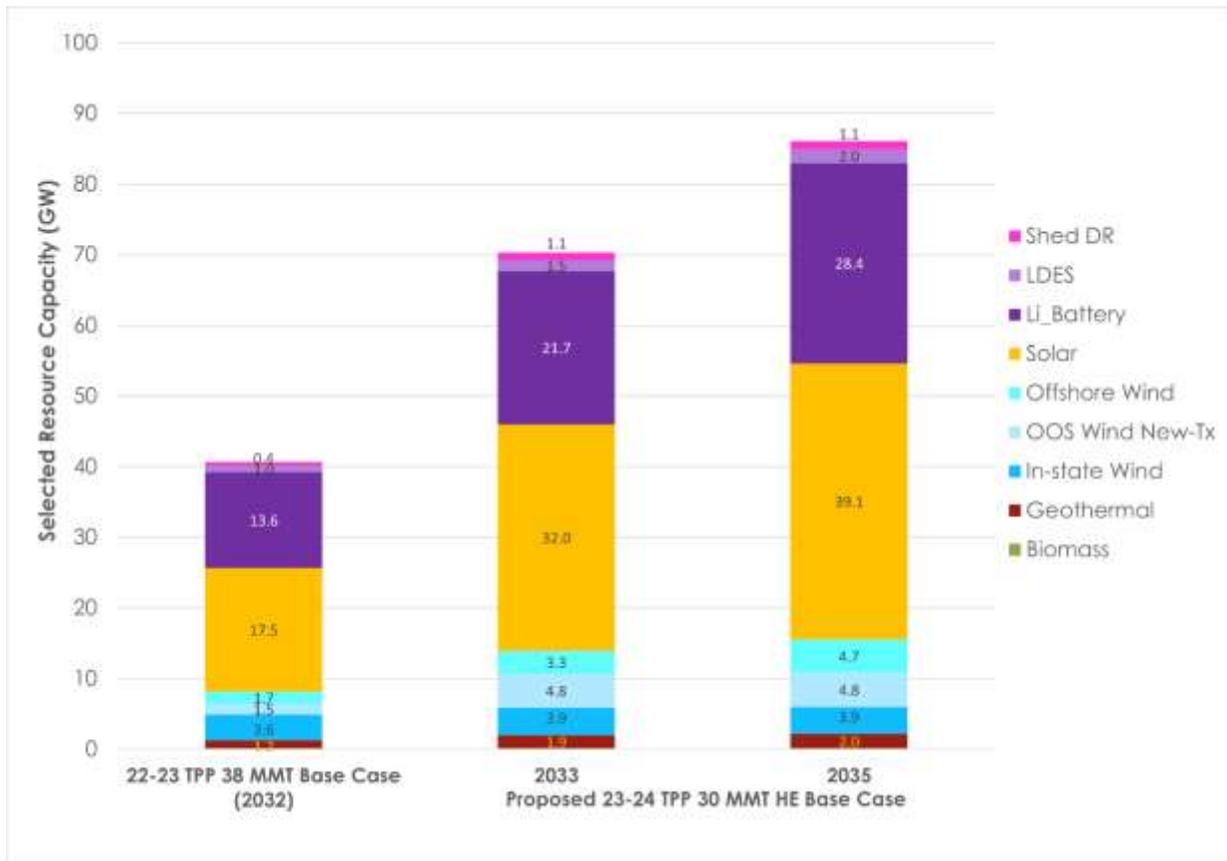


Table 1: Comparison of New Resources Included in Base Case TPP Portfolios (in megawatts (MW))

Resource Type	Base Case Portfolio for the 2022-2023 TPP (in 2032)	Proposed Base Case Portfolio for the 2023-2024 TPP	
		(in 2033)	(in 2035)
Natural Gas	-	-	-

Resource Type	Base Case Portfolio for the 2022-2023 TPP (in 2032)	Proposed Base Case Portfolio for the 2023-2024 TPP	
		(in 2033)	(in 2035)
Biomass	134	134	134
Geothermal	1,159	1,863	2,009
Hydro (Small)	-	-	-
In-state Wind	3,642	3,864	3,864
OOS Wind on new Tx			
-New Mexico Wind	438	2,500	2,500
-Wyoming Wind	1,062	2,328	2,328
Offshore Wind			
-Morro Bay	1,508	3,100	3,100
-Humboldt	120	161	1,607
Solar	17,505	32,025	39,072
Battery Storage	13,564	21,730	28,373
Long-Duration Storage	1,000	1,524	2,000
Shed DR	442	1,111	1,111
Total	40,654	70,340	86,098

The RESOLVE results for the proposed base case portfolio include 128 MW of new advanced combined-cycle gas turbine (CCGT) built in the 2035 timeframe. The portfolio totals shown in the Table 1 and Figure 1 above include the proposed staff adjustment of replacing the 128 MW of new gas with 146 MW of geothermal.

In addition, there is a relationship between the portfolios for the current 2022-2023 TPP cycle and the 2023-2024 TPP portfolios proposed here that warrants some discussion. In a July 1, 2022, letter to the CAISO,² Commissioners

² See the following link: <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/2019-2020-irp-events-and-materials/tpp-portfolio-transmittal-letter.pdf>

from this Commission and the CEC asked CAISO to change two related things in the 2022-2023 TPP cycle:

1. To use the 2021 IEPR Additional TE scenario as its load assumptions for 2022-2023 TPP base and sensitivity case studies; and
2. To study the 30 MMT High Electrification policy-driven sensitivity portfolio as the 2022-2023 TPP High Electrification Sensitivity Scenario.

There are several changes contained in the letter's recommendations that differ from the guidance provided in D.22-02-004, which transmitted the base case portfolio for the 2022-2023 TPP to CAISO. These changes could produce different outcomes in the 2022-2023 TPP, particularly the identification of more transmission infrastructure need than under previous assumptions. In particular, the change to higher electrification load assumptions for the base case could drive the need for more generation to meet that demand, and thus more transmission to support those new resources. Further, the deeper GHG target (30 MMT) and longer planning horizon (2035, instead of 2032) in the sensitivity transmitted to the 2022-2023 TPP in the same July 1, 2022, letter could identify the need for even more resources and transmission infrastructure.

The July 1, 2022, letter recommendations were intended to encourage the CAISO to consider identifying transmission needs, not only from study of the 38 MMT base case, but also from the study of the 30 MMT sensitivity, for approval within the 2022-2023 TPP. Using both the base case and the sensitivity will give CAISO a broader set of information from which to consider transmission investments. And, considering that the 30 MMT High Electrification sensitivity passed to 2022-2023 TPP is very similar to the 30 MMT HE portfolio proposed above as the 2023-2024 TPP base case, CAISO staff may be able to get a

“head start” on identifying any associated transmission needs by considering the results of the 30 MMT High Electrification sensitivity in making transmission investment recommendations to its board in the 2022-2023 TPP cycle.

3. Recommended 2023-2024 Sensitivity Portfolio(s)

In the July 1, 2022, letter to CAISO, the Commissioners requested that the CAISO study opportunities to provide Maximum Import Capability (MIC) expansion and incremental transmission capacity necessary for deliverability of long-lead time renewable resources, such as geothermal and out-of-state wind, beyond the CAISO’s balancing area authority, particularly those mapped in the policy driven base case and sensitivity study portfolios in the 2022-2023 TPP cycle.

In addition, in the 2021-2022 TPP, CAISO studied several sensitivity scenarios for transmission needs to support offshore wind resources. For these sensitivity scenarios, the purpose was for the CAISO to conduct an initial high-level bulk transmission needs assessment, as multiple offshore wind potential resources areas identified in these sensitivities had no transmission information available and had never been studied before.

As resource needs are both increasing and accelerating, Commission staff are recommending additional sensitivity portfolios in the 2023-2024 TPP cycle to further pinpoint the transmission needs to support all of these long lead-time resources.

The first proposed policy-driven sensitivity portfolio is designed to refine and update transmission capability and upgrade assumptions relevant to offshore wind resources. This portfolio seeks to build off of the results of the 2021-2022 TPP offshore wind sensitivity and the CAISO’s 20-year transmission

outlook by reexamining the transmission needs of potential offshore-wind resources in further detail. The portfolio also seeks to assess the transmission implications of policy changes that have occurred since the previous studies, including: increased load assumptions of the Additional TE scenario, new offshore wind development goals in line with Assembly Bill (AB) 525, increased capacity assumptions from the National Renewable Energy Laboratory (NREL) for the Morro Bay and Humboldt call areas, and the removal of the Diablo Canyon offshore wind call area from current development consideration. This proposed offshore wind sensitivity portfolio was developed using the following portfolio specific assumptions in RESOLVE:

- Force in the following quantities of offshore wind in 2035 in each of the following areas:
 - Morro Bay: 5.3 gigawatts (GW);³
 - Humboldt: 3 GW;³
 - Cape Mendocino or Del Norte: 5 GW;
- Optimize the remaining portfolio using the same 30 MMT GHG target and Additional TE scenario as the proposed base case; and
- Maintain planning reserve margin (PRM) and other RESOLVE constraints.

Table 2 summarizes the resource buildout results selected by RESOLVE in this proposed offshore wind sensitivity portfolio.

³ Estimated using the average of the 4Dx10D spacing and TLP mooring technology configurations cases for the call area from the April 2022 NREL report “Assessment of Offshore Wind Energy Leasing Areas for Humboldt and Morro Bay Wind Energy Areas, California,” <https://www.nrel.gov/docs/fy22osti/82341.pdf>

Table 2: New Resources Include in Proposed Offshore Wind Sensitivity Portfolio

Resource Type	Proposed Offshore Wind Sensitivity Portfolio	
	(in 2033)	(in 2035)
Natural Gas	-	-
Biomass	134	134
Geothermal	1,149	1,149
Hydro (Small)	-	-
In-state Wind	3,864	3,864
OOS Wind on new Tx		
-New Mexico Wind	2,500	2,500
-Wyoming Wind	2,328	2,328
Offshore Wind		
-Morro Bay	5,355	5,355
-Humboldt	2,301	3,045
-Other North Coast	-	5,000
Solar	25,871	25,871
Battery Storage	20,110	23,545
Long Duration Storage	1,000	1,000
Shed DR	977	977
Total	66,083	74,768

The second proposed policy-driven sensitivity portfolio is designed to study the transmission requirements of a portfolio with an alternative resource mix, which assumes only limited development of offshore and out-of-state (OOS) wind on new transmission within the 2035 modeling timeframe. The objective of this sensitivity is to better understand the transmission needs of a portfolio with significantly more solar, storage, and geothermal, and to identify transmission upgrades that may be common across portfolios, which would aid in identifying base case upgrades or alternatives that are “least regrets” under a variety of

resource mix futures. The limited offshore and OOS wind sensitivity portfolio was developed using the following portfolio-specific RESOLVE assumptions:

- Limit RESOLVE through 2035 to building up to only 2 GW of offshore wind and up to 2 GW of out-of-state wind;
- Optimize the remaining portfolio using the same 30 MMT GHG target and Additional TE scenario as the proposed base case;
- Maintain PRM and other RESOLVE constraints; and
- Limit RESOLVE through 2035 from building any new gas.

Staff added the last requirement to this sensitivity’s assumptions because the wind limit constraints were resulting in RESOLVE selecting a significant amount of new gas, which unlike for the small amount of new gas selected by RESOLVE in the proposed base case, cannot be readily substituted with alternative resources.

Table 3 summarizes the resource buildout results selected by RESOLVE in this proposed limited wind sensitivity portfolio.

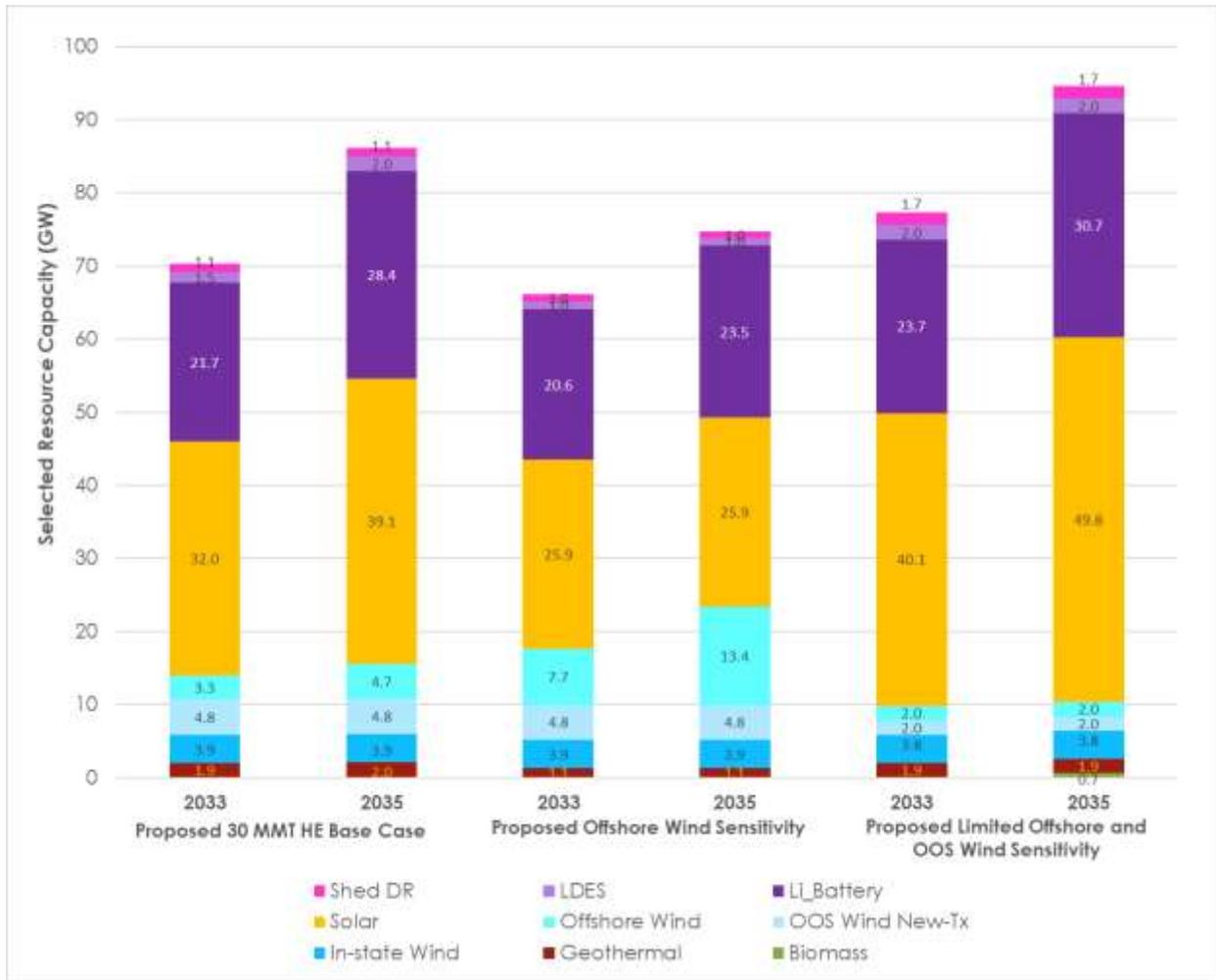
Table 3: New Resources Include in Proposed Limited Offshore and Out-of-State Wind Sensitivity Portfolio

Resource Type	Proposed Limited Offshore and OOS Wind Sensitivity Portfolio	
	(in 2033)	(in 2035)
Natural Gas	-	-
Biomass	134	699
Geothermal	1,885	1,885
Hydro (Small)	-	-
In-state Wind	3,797	3,797
OOS Wind on new Tx		
-New Mexico Wind	1,000	1,000
-Wyoming Wind	1,000	1,000
Offshore Wind		

Resource Type	Proposed Limited Offshore and OOS Wind Sensitivity Portfolio	
	(in 2033)	(in 2035)
-Morro Bay	2,000	2,000
-Humboldt	-	-
-Other North Coast	-	-
Solar	40,068	49,836
Battery Storage	23,733	30,705
Long Duration Storage	2,000	2,000
Shed DR	1,716	1,716
Total	77,333	94,638

Figure 2 compares the resource buildouts in 2033 and 2035 for the proposed base case portfolio and the proposed sensitivity portfolios. The full results of the proposed sensitivity portfolios, as analyzed in the RESOLVE model, are available at the following link: <https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-power-procurement/long-term-procurement-planning/2022-irp-cycle-events-and-materials/portfolios-and-modeling-assumptions-for-the-2023-2024-transmission-planning-process>

Figure 2: Capacity of New Resources Comparison of Proposed Base Case and Proposed Sensitivity Portfolios



4. RESOLVE Inputs and Assumptions Updates

To develop the portfolios described above, staff has made various updates in RESOLVE since the development of the 2021 Preferred System Plan, 30 MMT high electrification 2022-2023 TPP sensitivity, and model runs done to support 2022 LSE IRP filing requirements. All of the updates are broadly applicable to the IRP process and will be discussed in detail with stakeholders through the Inputs

and Assumptions process.⁴ The most significant updates relevant to the development of these portfolios are:

- Resource Cost Assumptions:⁵ Updated resource costs to the NREL's 2021 Annual Technology Baseline and Lazard's Levelized Costs of Energy and Storage v7.0.
- Resource baseline: Updated the list of baseline resources, which are assumed to be online in future years and added to RESOLVE as an input, to include additional projects that have achieved commercial operation in the CAISO market since the last RESOLVE baseline update that occurred during 2021 PSP development. Previous entries of these resources marked as "in development" were removed from the baseline list to avoid double counting.
- Transmission: Made multiple transmission updates from new CAISO information, including:
 - Updated the transmission capacity output factor for storage in the on-peak deliverability secondary system need scenario to 50% from 100% to reflect the updates made by the CAISO to its Generation Deliverability Study Dispatch Assumptions.
 - Incorporated changes to transmission constraint capability information from updates and corrections included in the CAISO's October 2021 update to its White Paper on 2021 Transmission Capability Estimates for use in the CPUC's Resource Planning Process.⁵
 - Incorporated updated transmission constraint capability information from the CAISO board approved 2021-2022 TPP including:⁵

⁴ More information on the Inputs and Assumptions process and timing is available at the following link: [iamagsep2209222022.pdf \(ca.gov\)](#)

⁵ These updates were utilized in the 30 MMT high electrification 2022-2023 TPP sensitivity portfolio and model runs done to support 2022 LSE IRP filing requirements, but not for the 2021 PSP.

- Identified transmission capability increases from approved transmission upgrades,
- Updated capability information on existing constraints, and
- Updated estimates on timing for construction of identified potential transmission upgrades.

In addition to these updates, staff made assumptions specific to the TPP portfolio for which RESOLVE was being run. Sensitivity portfolio-specific RESOLVE resource potential assumptions were made and are described in Section 3, for each sensitivity. Additionally, staff incorporated specific transmission assumptions for the offshore wind resources, including pairing resource areas with specific transmission upgrades identified in the CAISO's 2021-2022 TPP offshore wind sensitivity portfolio study results.⁶ The selection of the specified upgrades are not intended as an endorsement of the transmission upgrade, but instead are chosen to allow RESOLVE to consider a realistic transmission cost estimate for offshore wind when optimizing the portfolios. The following simplified transmission upgrade assumptions derived from the 2021-2022 TPP were utilized for the offshore wind resources areas utilized by RESOLVE in the proposed base case and sensitivity portfolios:

- Morro Bay Call Area: RESOLVE utilized the proposed \$110 million new Morro Bay 500 kV substation upgrade for all the Morro Bay offshore wind potential for both the 3,100 MW potential used in the proposed base case and the 5,300 MW potential used in the offshore wind sensitivity. Staff recognize the potential for the Diablo Canyon substation to serve as an interconnection for a significant portion of the Morro Bay offshore wind, but chose the

⁶ See <https://www.aiso.com/Documents/ISOBoardApproved-2021-2022TransmissionPlan.pdf>

Morro Bay upgrade as the intertie point to simplify the modeling in RESOLVE.

- Humboldt Call Area: RESOLVE utilized the proposed \$2.4 billion overland 500 kV AC line transmission upgrade to interconnect the 1,607 MW of Humboldt offshore wind potential in the proposed base case. For the offshore wind sensitivity's increased resource potential, RESOLVE extends the same \$/MW cost of the upgrade as calculated with the 1,607 MW for the full 3,000 MW increased resource potential.
- Other North Coast Interest Areas: For the 5,000 MW of additional North Coast offshore wind, RESOLVE utilizes the \$/MW cost of the \$4 billion VSC-HVDC subsea cable transmission upgrade, assuming a 2,000 MW rating for the upgrade as noted in the 2021-2022 CAISO TPP.

5. Busbar Mapping Methodology Updates

For several years now, Commission staff have been maintaining a summary of the methodology and specific approaches used to map the electricity generation or storage resources to locations (specific busbars) on the transmission system. With each TPP cycle, certain improvements are made.

This year, the following items have been modified compared to last year's methodology, which was included in D.22-02-004:

- Updating the commercial interest criteria to prioritize, under high-confidence commercial interest, projects that have been allocated transmission plan deliverability by the CAISO.
- Clarifying what mapping work the busbar working group conducts before transmitting to CEC staff for land-use and environmental screens analysis.
- Clarifying how CEC and Commission staff conduct land-use and environmental screens analysis in the busbar mapping process.

- Providing the sources of the CAISO data used for transmission capability and transmission upgrade analysis and clarifying how periodic updates of that transmission information are incorporated.

The newest version of the methodology is attached to this ruling as Attachment A. A copy of Attachment A redlined compared to the previous version is also available on the Commission's web site at the following link: <https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-power-procurement/long-term-procurement-planning/2022-irp-cycle-events-and-materials/portfolios-and-modeling-assumptions-for-the-2023-2024-transmission-planning-process>

6. Preliminary Mapping Results for the Recommended Base Case

Commission staff conducted an initial round of busbar mapping for the recommended base case portfolio utilizing the busbar mapping methodology described in Section 5. Staff work with CEC and CAISO staff to conduct the mapping and typically require multiple rounds of the mapping effort to finalize the results. It is possible these preliminary mapping results do not align perfectly with the busbar mapping criteria discussed in Attachment A. Results that do not align, or with high priority criteria violations that deserve further consideration, may be addressed through further iterations of the mapping process and with the benefit of party comment on the portfolio and mapping proposed in this ruling. The workbook of the preliminary busbar mapping results for the proposed base case portfolio, including both 2033 and 2035 study years, is available at the following link:

<https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-power-procurement/long-term-procurement-planning/2022-irp-cycle-events->

[and-materials/portfolios-and-modeling-assumptions-for-the-2023-2024-transmission-planning-process](#)

7. Timing of Other Comments in This Proceeding

The timing of the request for comments on the TPP scenarios recommended in this rulemaking is scheduled to ensure that the Commission can make timely recommendations to the CAISO prior to the beginning of its 2023-2024 TPP analysis, which begins in February 2023. The TPP comments from parties are scheduled to precede the comments in response to the September 8, 2022 administrative law judge's (ALJ's) ruling containing a Staff Options Paper on the procurement program. Comments on the procurement program paper were originally scheduled for November 7, 2022, with reply comments due November 28, 2022.

On September 30, 2022, the Alliance for Retail Energy Markets (AReM) requested an extension to have comments due on November 21, 2022, with replies due December 12, 2022. Pacific Gas and Electric Company (PG&E) requested to delay the comments even further, to be due December 15, 2022, with replies due January 17, 2023. Several parties supported or did not oppose both of these proposals. This ruling adjusts the schedule for the comments on the Staff Options Paper on the procurement program so that comments will be due December 12, 2022 and reply comments due January 9, 2023.

In addition, each LSE is scheduled to file its individual IRP on November 1, 2022 and traditionally this proceeding (or its predecessor) has allowed an initial round of comments from parties on the IRP filings. These comments are intended for parties to provide the Commission with preliminary responses to the IRPs. There will be more opportunities later in the proceeding for parties to respond to additional analysis by Commission staff, including the aggregation of

the individual LSE portfolios for a system-level analysis. The preliminary comments on the individual IRPs will be due December 2, 2022.

To accommodate all of these activities and allow meaningful opportunity for comments on all of the topics, the current proceeding comment and filing schedule is revised and summarized as contained in Table 4 below.

Table 4. Schedule of Upcoming Comments and Filings in Proceeding

Item	Deadline
Comments in response to this ruling on TPP scenarios	October 31, 2022
LSEs file individual IRPs	November 1, 2022
Reply comments on TPP scenarios	November 10, 2022
Preliminary comments from parties in response to individual IRP filings (no replies)	December 2, 2022
Comments on Staff Options Paper on procurement program included in September 8, 2022 ALJ ruling	December 12, 2022
Reply comments on Staff Options Paper on procurement program	January 9, 2023

8. Questions for Parties

This section includes specific questions to which parties are requested to respond in their comments filed in response to this ruling.

1. Do you recommend any changes to the proposed base case portfolio in Section 2 of this ruling? If so, provide rationale and justification for your recommended changes.
2. Do you recommend any changes to the proposed sensitivity portfolios in Section 3 of this ruling? If so, provide rationale and justification for your recommended changes.
3. Do you recommend any changes to the busbar mapping methodology or process described in Section 5 of this

ruling and in Attachment A? If so, provide rationale and justification for your recommended changes.

4. Do you recommend any changes to the specific busbar mapping criteria and their implementation described Section 5 of this ruling and in Attachment A? If so, provide rationale and justification for your recommended changes.
5. Describe any concerns you have about the preliminary busbar mapping results described in Section 6 of this ruling.
6. Include any comments in response to this ruling that are not covered in Questions 1-5 above.

IT IS RULED that:

1. Interested parties may file and serve comments in response to this ruling and the questions in Section 7 by no later than October 31, 2022.
2. Interested parties may file and serve reply comments in response to this ruling by no later than November 10, 2022.
3. The deadlines for comments and reply comments in response to Section 1 of the September 8, 2022 administrative law judge's ruling in this proceeding are revised to December 12, 2022 and January 9, 2023, respectively.
4. Interested parties may file and serve preliminary responses to the individual integrated resource plans filed on or about November 1, 2022 by no later than December 2, 2022. Reply comments to the individual plans are not invited as this time.

Dated October 7, 2022, at San Francisco, California.

/s/ JULIE A. FITCH

Julie A. Fitch
Administrative Law Judge

ATTACHMENT A