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**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
(Filed May 7, 2020)

**THE PROTECT OUR COMMUNITIES FOUNDATION
COMMENTS ON ADMINISTRATIVE LAW JUDGE'S RULING SEEKING COMMENT
ON PROPOSED 2023 PREFERRED SYSTEM PLAN AND TRANSMISSION
PLANNING PROCESS PORTFOLIOS**

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PCF recommendations to improve the 2023 proposed Preferred System Plans (PSPs) and Transmission Planning Process Portfolios (TPPs).¹ PCF recommends the Commission: prioritize solar plus storage (SPS); aggressive retirement of gas plants and replacement with renewable resources; consider additional cost sensitivities, such as high adoption of behind-the-meter DERs and low solar and battery costs; and engage in an open and transparent competitive bidding process before authorizing additional ratepayer funds on consultants.

1. Aggregation of LSE Plans

PCF reserves the right to comment on additional aspects of the proceeding.

¹ R.20-05-003, Administrative Law Judge’s Ruling Seeking Comment on Proposed 2023 Preferred System Plan and Transmission Planning Process Portfolios (October 5, 2023), p. 60

2. Proposed Preferred System Plan Portfolio

2.1 The PSP Portfolio Should Prioritize Solar Plus Storage

The recommendation by Commission staff to use the 25 MMT Core portfolio as the PSP contains a significant flaw. The diverse Core portfolio includes resources that are currently under development or contain other environmental costs not noted in the Administrative Law Judge’s Ruling Seeking Comment on Proposed 2023 Preferred System Plan and Transmission Planning Process Portfolios (Ruling), including geothermal resources, biomass, out-of-state wind, offshore wind, and long duration storage. These sources could lead to unexpected costs both in terms of developing the projects and negative environmental externalities.

For example, offshore wind remains more expensive than other zero carbon alternatives, such as rooftop solar, which is proven, abundant, and imposes no new transmission need. As cited in our testimony earlier in this proceeding Table 1 summarizes the 2022 NREL ATB cost forecast for floating offshore wind power in 2023, 2035, and 2050.² The cost of production of floating offshore wind, without considering the transmission adder, will be about two-and-half times higher than commercial rooftop solar, \$52/MWh versus \$22/MWh, in 2035.

The transmission cost, in the form of grid connection cost and offshore spur (transmission) line cost, adds about 50 percent to the base capital cost and overall cost of production. The “all-in” floating offshore wind production cost, wind turbine plus transmission, would be about \$78/MWh, or about three-and-a-half times higher than commercial rooftop solar in 2035. Offshore wind is not cost-effective and will potentially expose ratepayers to unjust and unreasonable rates.

² R.20-05-003, The Protect Our Communities Foundation Comments On Proposed Decision Ordering Supplemental Mid-Term Reliability Procurement (2026-2027) And Transmitting Electric Resource Portfolios To California Independent System Operator For 2023-2024 Transmission Planning Process (February 2, 2023), p. 9.

Table 1. Cost of floating offshore wind, Central California coast³

Year	Floating offshore wind, Class 12, “Advanced”, (\$/MWh)*	Grid connection cost, (\$/kW)	Offshore spur line, (\$/kW)
2023	71	1,127	1,127
2035	52	906	906
2050	44	801	801

*: Capital cost of floating offshore wind power by year (\$/kW): 2023 = 4,414; 2035 = 3,551; 2050 = 3,140. This capital cost does not include 1) grid connection cost or 2) offshore spur line.

Local SPS systems provide 100 percent clean power where the power is used, reduce congestion on the grid, and minimize the need for capital investments in new transmission projects justified for grid reliability purposes.⁴ Over 10,000 MW of NEM solar was installed in California IOU service territories between 2015 and 2022,⁵ in substantially less time than the ten-year development period for SDG&E’s proposed 500 kV, 1,800 MW renewable power transmission line and associated transformer bank under evaluation by CAISO.⁶ In 2022, the NEM installation rate in IOU service territories increased to 2,080 MW AC. Maintaining this 2022 NEM solar pace alone would add nearly 50,000 MW AC (90,000 GWh) of rooftop and parking lot solar by 2045.⁷ Increasing the pace of installation or maintaining the pace while incentivizing customers to cover their entire available rooftop/parking lot area with solar panels and selling the excess power produced to the grid at a favorable rate, could double or triple the NEM rooftop/parking lot contribution to decarbonization through 2045; and could be matched or substantially supplemented with wholesale SPS developed on warehouse rooftops.

³ National Renewable Energy Laboratory, 2022 v2 Annual Technology Baseline Workbook Corrected 7-21-2022.xlsx (July 17, 2022) (“offshore wind” tab).

⁴ *Id.* at p. 2.

⁵ *Id.* at p. 3.

⁶ *Id.* at p. 3 & fn. 8.

⁷ *Id.* at p. 4.

Installing 100% green rooftop/parking lot capacity quickly at the point-of-use reduces greenhouse gas emissions with no land use conflicts, no new transmission capacity, and little controversy beyond that generated by the IOUs themselves.⁸

2.2 Commission Staff Should Model Additional Sensitivity Cases Representing Likely Scenarios.

The PSP includes the assumption that the Once-Through-Cooling (OTC) plants will retire in 2023 and the Diablo Canyon Power Plant in 2024 and 2025.⁹ PCF would like to reiterate that the OTC and Diablo Canyon plants must go offline on schedule. Otherwise, the modeled sensitivity portfolios are based on incorrect assumptions. These plants have continued to stay open long past their planned retirement and must be closed in 2023 and 2024/2025.

The Commission staff should model additional scenarios. For example, the Commission staff modeled a high gas retirement sensitivity, but erroneously concluded that such a scenario would not result in GHG reductions because the RESOLVE model replaced these plants with “additional generation at remaining facilities and by additional unspecified imports.”¹⁰ The Commission assumes that “the natural gas fleet is currently still needed for overall system reliability, as well as local reliability in certain load pockets,” while conceding that the natural gas fleet “is also responsible for the majority of the remaining GHG and local criteria pollutant emissions from the in-state electricity sector.”¹¹ The Commission should model a high gas retirement sensitivity without presupposing need.

⁸ *Id.* at p. 3-4.

⁹ R.20-05-003, Administrative Law Judge’s Ruling Seeking Comment on Proposed 2023 Preferred System Plan and Transmission Planning Process Portfolios (October 5, 2023), p. 14.

¹⁰ *Id.* at p. 28.

¹¹ *Ibid.*

As mentioned above, over 10,000 MW AC of NEM solar was installed in California IOU service territories between 2015 and 2022.¹² Maintaining the 2022 NEM solar pace alone would add nearly 50,000 MW AC (90,000 GWh) of rooftop and parking lot solar by 2045.¹³

Instead of basing their scenarios based on realistic solar plus storage adoption projections, Commission staff conducted a scenario analyzing lower than expected behind the meter solar adoption and another with higher-than-expected costs for solar and battery storage. If anything, the Commission should conduct sensitivities considering scenarios in which there is higher than expected behind the meter solar adoption and cheaper than anticipated costs for solar and battery storage. These scenarios would be a logical extension of current trends, as evidenced by canceled proposed transmission projects because of NEM adoption,¹⁴ and as solar prices have gone down very quickly in the last few years.¹⁵ Higher than expected installation of residential solar plus storage would lead to greater reliability not only because solar plus storage systems provide power even during power shut off events, but also because there would be less demand on the grid.

3 Proposed Portfolios for the CAISO TPP.

PCF reserves the right to comment later in this proceeding and in reply.

¹² A.22-05-015 & A.22-05-016, The Protect Our Communities Foundation Opening Brief, PCF-01, p. 3 (Powers).

¹³ *Id.* at p. 4.

¹⁴ CAISO, 2015-2016 Transmission Plan: Board Approved (March 28, 2016), p. 93, available at <https://www.caiso.com/Documents/Board-Approved2015-2016TransmissionPlan.pdf> (cancelling 13 transmission projects); *See also* CAISO, 2017-2018 Transmission Plan: Board Approved, (March 22, 2018) p. 17, fn 11 (explaining that these project were cancelled because of NEM and energy saving programs).

¹⁵ Energy Research and Social Science, *Technological Innovation Enable Low Cost Climate Change Mitigation* (November 2023), <https://www.sciencedirect.com/science/article/abs/pii/S2214629623003365?dgcid=author> [as of November 13, 2023] (explaining that the predictions of most energy models have thus far underestimated the price decreases of solar and battery storage).

4 Analysis Related to MTR Procurement Sufficiency and Petitions for Modification of D.21-06-035 and D.23-02-040

PCF reserves the right to comment later in this proceeding and in reply.

5 Procurement-Related Recommendations

5.1 Potential Additional Procurement to Allow Extension for LLT Resources

PCF disagrees with the proposal that if the California Energy Storage Association and Western Power Trading Forum’s PFM of D.21-06-035 and D.23-02-040 seeking an extension for Long Lead Time Resources is granted, they should procure an additional 2,000 MW of NQC of renewable or zero-emissions resources otherwise meeting the criteria in D.21-06-035 by 2028. New procurement is not the Commission’s only (or most effective) available tool to ensure reliability. At least 2,000 megawatts (MW) of additional on-peak capacity can be made available by suspending (non-wheeling) exports during summer peaks.¹⁶ The need to identify and approve “highest priority” transmission capacity into local capacity areas to deliver renewable energy can be delayed beyond CAISO’s 2022–23 transmission planning process by renewing development of in-front-of-meter (“IFOM”) warehouse rooftop solar and battery storage that does not depend on transmission capacity for delivery.¹⁷ IFOM is a proven resource. SCE developed ~100 MW of a Commission IFOM warehouse rooftop solar authorization, while indicating “SCE has identified numerous potential leasing partners whose portfolios contain several times the amount of roof space needed for even the 500 MW program.”¹⁸

¹⁶ R.20-05-003, The Protect Our Communities Foundation Comments On Proposed Decision Ordering Supplemental Mid-Term Reliability Procurement (2026-2027) And Transmitting Electric Resource Portfolios To California Independent System Operator For 2023-2024 Transmission Planning Process (February 2, 2023), p. 1.

¹⁷ *Ibid.*

¹⁸ A.08-03-015, Application of Southern California Edison Company (U 338-E) for Authority to Implement and Recover in Rates the Cost of its Proposed Solar Photovoltaic (PV) Program (March 27,

The Commission is now taking steps to more effectively monitor rapidly rising transmission costs.¹⁹ An ambitious IFOM warehouse rooftop solar development program would be a concrete step toward slowing the rise in transmission costs while enhancing grid reliability.

A substantial driver over the near- and mid-term for less electric capacity availability in summertime heatwave peak hours is the ongoing CAISO practice of allowing substantial power exports when the CAISO grid is under high stress conditions. CAISO indicated in the January 2021 “Final Root Cause Analysis” it conducted after the August 2020 blackouts that a software error had been a primary culprit for excessive exports – 3,500 MW – at the hours when rolling blackouts were ordered.²⁰ CAISO continues to authorize exports during summertime heatwave peak hours and continues to have software problems that contribute to excessive exports at the critical peak hours. Non-wheeling exports ranged from 2,000 MW to 4,000 MW at the peak hours during the September 5-8, 2022, heat wave.²¹ The highest peak loads occurred from 3 pm to 6 pm on September 6 and 7, 2022.²²

2008), p. 6; A.08-03-015, Solar Photovoltaic (PV) Program Testimony, Exh. No. SCE-1 (March 27, 2008), p. 44.

¹⁹ CPUC Resolution E-5252, Transmission Project Review Process, February 2, 2023, p. 4 (“The TPR Process is necessary for the Commission and Stakeholders to understand the TOs’ planning assumptions, determination and prioritization of needs, and the processes leading to transmission solutions and network upgrades. California ratepayers have been burdened by the escalation in costs related to utility self-approved transmission projects; transparent and reliable data have been elusive; current stakeholder processes are inconsistent and temporary; and generator interconnection-related network upgrades are becoming more frequent and costly.”).

²⁰ CAISO, Final Root Cause Analysis - Mid-August 2020 Extreme Heat Wave (January 13, 2021), p. 122, Figure B.36: Total Day-Ahead Scheduled Exports by Category, available at: <http://www.caiso.com/Documents/Final-Root-Cause-Analysis-Mid-August-2020-Extreme-Heat-Wave.pdf>.

²¹ CAISO, Summer Market Performance Report – September 2022 (November 2, 2022), p. 128, Figure 119: HASP export schedule breakdown, available at: <http://www.caiso.com/Documents/SummerMarketPerformanceReportforSeptember2022.pdf>.

²² CAISO, Today’s Outlook Demand – Demand Trend (for Sept. 6 and 7, 2022), last accessed February 1, 2023, available at: <https://www.caiso.com/TodaysOutlook/Pages/default.aspx>.

CAISO identified “areas for improvement in system operations” in its heat wave after-action report that included – again – addressing a software glitch that enabled excessive exports under high stress conditions. While CAISO indicates it addressed this software problem,²³ this was the second time in three summers that a CAISO software glitch enabled excessive exports that led to blackouts or near-blackouts. This is unacceptable performance for a grid operator. PCF continues to urge the Commission to adopt the recommendation PCF made following the August 2020 blackouts – suspend all non-wheeling exports during summer heat wave peak hours. The 2,000 MW of additional NQC could be completely nullified by the next CAISO software glitch that enables exports at the critical hour during summer heat waves.

5.2 Proposal on Long Duration Energy Storage at Existing Natural Gas Generation Sites

PCF reserves the right to comment later in this proceeding and in reply.

6. Proposed Reliability Framework for IRP

PCF reserves the right to comment later in this proceeding and in reply.

7. Funding for Continued Consulting Support to Commission Staff on IRP

Funding for continued consulting support to Commission staff on IRP does not appear as a topic within the scope of the August 21, 2023, Assigned Commissioner’s Amended Scoping Memo and Ruling, and thus should not be addressed in this proceeding at this time.²⁴ Nor does the Ruling identify sufficient information, such as the identity of the technical consultants that “conduct[ed] modeling and assist[ed] with other planning tasks.”²⁵

²³ CAISO, California ISO posts analysis of September heat wave (November 2, 2022), available at: <http://www.caiso.com/Documents/california-iso-posts-analysis-of-september-heat-wave.pdf>.

²⁴ *Southern California Edison Co. v. Public Utilities Com.* (2006) 140 Cal.App.4th 1085, 1106 (Commission’s failure to follow its own rules constitutes a failure to proceed in the manner required by law.)

²⁵ R.20-05-003, Administrative Law Judge’s Ruling Seeking Comment On Proposed 2023 Preferred System Plan And Transmission Planning Process Portfolios (October 5, 2023), p. 58.

Commentators for this proceeding need to know which consultants the proposed money would go towards to be able to comment and provide the Commission with information that could help the Commission make an informed decision about whether to increase funding.

Based on the CAL eProcure website, the CPUC has authorized \$14,850,000 between July 23, 2019 and June 30, 2024 to be paid to Energy and Environmental Economics Inc. (E3) for Integrated Resource Planning services.²⁶ As PCF has commented in other proceedings, E3 works for the investor-owned-utilities (e.g. PG&E, SCE, SDG&E, SoCalGas, Sempra) and utility-scale solar developers (e.g. Brightsource, First Solar),²⁷ entities that are financially incented to develop remote, utility-scale projects that require transmission line construction to carry output from remote development areas to coastal demand centers.²⁸ The investor-owned-utilities and utility-scale solar developers that E3 represents have interests which dramatically diverge from the interests of ratepayers and the public. The ACC as developed by E3 has consistently minimized, by artful use of technical assumptions, the cost of new transmission avoided by distributed solar. Moreover, as PCF and others have explained, the data and modeling methods in the E3/UCI Quantifying AQ Report further highlights the gulf between the interests E3 represents and the public interest.²⁹

²⁶ Cal eProcure: FI\$Cal SCPRS Search, https://suppliers.fiscal.ca.gov/psc/psfpd1_1/SUPPLIER/ERP/c/ZZ_PO.ZZ_SCPRS2_CMP.GBL?Page=Z_Z_SCPRS_PDDTL_PG&Action=U [as of November 13, 2023].

²⁷ R.22-11-013, The Protect Our Communities Foundation Comments on Order Instituting Rulemaking to Consider Distributed Energy Resource Program Cost-Effectiveness Issues, Data Use and Access, and Equipment Performance Standards (January 9, 2023), p. 8-9; R.22-11-013, Center for Biological Diversity and The Protect Our Communities Foundation Comments on Societal Cost Test and Air Quality Research Results (April 28, 2023), p. 29-30; *see also* R.20-08-020, Rebuttal Testimony of Bill Powers, PE (June 16, 2021), p. 12-13, available at <https://docs.cpuc.ca.gov/PublishedDocs/SupDoc/R2008020/3898/393925997.pdf>.

²⁸ *See e.g.* Center for Biological Diversity, *Rooftop-Solar Justice: Why Net Metering is Good for People and the Planet and Why Monopoly Utilities Want to Kill It* (March 2023), available at <https://www.biologicaldiversity.org/programs/energy-justice/pdfs/Rooftop-Solar-Justice-Report-March-2023.pdf>.

²⁹ R.22-11-013, Center for Biological Diversity and The Protect Our Communities Foundation Comments on Societal Cost Test and Air Quality Research Results (April 28, 2023), p. 29-34.

Ratepayers should not be required to fund any further efforts that serve to promote the interests of those with financial incentives in the development of remote, utility-scale solar projects and the corresponding transmission line construction that such development would require.³⁰ Ratepayers and the public will benefit from a different approach: fully saturated deployment of customer-owned solar plus storage systems on rooftops and parking lots. Deployment of rooftop and parking lot solar in urban centers where the power is used will avoid multiple costs: it will most quickly maximize greenhouse gas emissions reductions, will minimize land use impacts, will enhance reliability, and will dramatically reduce out-of-pocket ratepayer costs.³¹

The Commission should engage in an open and competitive bidding process to ensure that it utilizes a consultant that can meaningfully advise the Commission about how to best protect the public interest and to reduce rates as low as possible.³² The Commission should not authorize \$18,000,000 to unnamed consultants unless and until intervenors have been given an opportunity to review basic components of the proposed authorization; and not without providing an open and transparent competitive bidding process.

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³⁰ R.20-05-003, Administrative Law Judge’s Ruling Seeking Comment On Proposed 2023 Preferred System Plan And Transmission Planning Process Portfolios (October 5, 2023), p. 59 (the proposed \$18,000,000 additional funding for six years would be provided from PG&E, SCE, and SDG&E “in relationship to their annual retail sales reported in their current IRP . . . These costs would be recorded when paid, for later recovery via distribution rates.”).

³¹ A.22-05-015, 016, Prepared Direct Testimony of Bill Powers (March 27, 2023), p. 1-20, available at <https://docs.cpuc.ca.gov/PublishedDocs/SupDoc/A2205015;A2205016/5870/504801388.pdf>.

³² Pub. Util. Code, § 747.