

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA



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

Rulemaking 20-05-003
(Filed May 7, 2020)

**REPLY COMMENTS OF CENTER FOR ENERGY EFFICIENCY AND
RENEWABLE TECHNOLOGIES ON ADMINISTRATIVE LAW JUDGE'S RULING
SEEKING FEEDBACK ON MID-TERM RELIABILITY ANALYSIS AND PROPOSED
PROCUREMENT REQUIREMENTS**

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For: CENTER FOR ENERGY EFFICIENCY AND RENEWABLE TECHNOLOGIES

April 9, 2021

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The Center for Energy Efficiency and Renewable Technologies (CEERT) respectfully submit these Reply Comments on Administrative Law Judge’s Ruling Seeking Feedback on Mid-Term Reliability Analysis and Proposed Procurement Requirements, issued in (R.) 20-05-003 (Integrated Resource Plan (IRP), on February 22, 2021 (ALJ Ruling). These Reply Comments are timely filed and served pursuant to the Commission’s Rules of Practice and Procedure and the instructions contained in the ALJ Ruling.

**I.
SUMMARY OF CEERT’S POSITION**

CEERT wishes to first highlight again the extremely critical nature of this procurement. CEERT recognizes and sympathizes with the Commission’s difficult task in striking a balance between implementing California’s clean energy goals, ensuring grid reliability, redressing longstanding environmental injustices, and minimizing ratepayer costs. However, CEERT strongly agrees with the Joint Parties’¹ observation in their Opening Comments:

“With all due respect, the Commission as of now is not managing this properly. The Commission’s current approach fails to ensure the construction of sufficient new clean resources to avoid increasing [greenhouse gas (GHG)] emissions, and to

¹ The Joint Parties include the Natural Resources Defense Council, the Union of Concerned Scientists, the California Environmental Justice Alliance, Defenders of Wildlife, Environmental Defense Fund, Friends of the Earth, Green Power Institute, and the Sierra Club.

avoid severe harm to disadvantaged communities where existing natural gas plants are located.”²

Rather than integrating the synergies between the State’s complimentary goals to reveal best fit solutions, the Commission’s attempt to meet these goals has been one that essentially pits these goals against each other. As a result, this misguided attempt could result in negative progress in meeting *all* of these goals. The Commission continues to rely on the use of the fragile, inefficient, expensive, and polluting natural gas fleet to “maintain reliability and ratepayer costs”, with the burden of this perpetual cycle falling squarely on the communities most impacted by the harmful effects of the gas fleet and often most vulnerable to the consequences of climate change.

Moreover, the Commission has paid scant attention to the impact of high and volatile burner tip gas costs, increased gas transmission and distribution investments required for safety and reliability, and exploding electric distribution cost on the electric rate base, as illustrated in its one-dimensional rate analysis at the recent En Banc.³ Furthermore, California’s climate change, clean energy, and environmental justice goals have been essentially ignored in the Commission’s recent Emergency Reliability procurement decision⁴; a pattern which has continued in this proposed Mid-Term “Reliability” Procurement by the complete disregard for energy related GHG and criteria pollutant emission considerations.

California’s goals for its electric system are not impossible, nor are they inherently in conflict, as demonstrated by the comprehensive 100% Clean Energy Study carried out by the

² Opening Comments of the Joint Parties, at p. 15.

³ *Utility Costs and Affordability of the Grid of the Future: An Evaluation of Electric Costs, Rates, and Equity Issues, Pursuant to P.U. Code Section 913.1*. CPUC. February 2021.

⁴ D.21-03-056, Decision Directing Pacific Gas and Electric Company, Southern California Edison Company, And San Diego Gas & Electric Company To Take Actions To Prepare For Potential Extreme Weather In The Summers of 2021 And 2022, issued March 26, 2021.

National Renewable Energy Laboratory (NREL) on behalf of the Los Angeles Department of Water and Power (LADWP)⁵, the Sacramento Municipal Utilities District's (SMUD's) 2030 Zero Carbon Plan⁶, and the California Energy Commission's (CEC's) recent SB 100 Report.⁷ If managed correctly, decisions made in this Mid-Term Reliability Procurement, overall long-term planning in this IRP proceeding, and issues within other Commission proceedings can serve to unlock progress on *all* of the State's goals simultaneously. However, the Commission must be willing to take a more holistic view of the problem, listen intently to external parties and stakeholders, and rely on the extensive evidentiary record housed in its many related dockets to truly develop "least regrets" solutions that do not advance one goal at the expense of the others. If California's energy transition is to succeed – and it must – all of California's electric system goals can and should be met simultaneously.

CEERT's greatest concerns in this Mid-Term Procurement are the lack of consideration of GHG emissions, the exclusive focus on capacity procurement with no consideration of energy need, and the inexplicable failure to address critical transmission and interconnection issues. If these concerns are not addressed, CEERT believes this procurement will result in similar resource portfolios to those ordered under Decision (D.) 21-03-056 in the Emergency Reliability proceeding (R.20-11-003), composed primarily of natural gas contracts, in addition to what was ordered by the Commission's last IRP emergency procurement that resulted largely in battery

⁵ Cochran, Jaquelin, and Paul Denholm, eds. 2021. The Los Angeles 100% Renewable Energy Study. Golden, CO: National Renewable Energy Laboratory. NREL/TP-6A20-79444.

<https://maps.nrel.gov/la100/>

⁶ <https://www.smud.org/-/media/Documents/Corporate/Environmental-Leadership/ZeroCarbon/2030-Zero-Carbon-Plan-Technical-Report.ashx>

⁷ SB 100 Joint Agency Report: Charting a path to a 100% Clean Energy Future. Found in CEC Docket Number 19-SB-100. <https://www.energy.ca.gov/sb100>

storage charged with existing gas.⁸ If this procurement amounts to little more than stray new investments in existing gas plants and 4-hour batteries with insufficient amounts of clean generation to charge them, CEERT fears that this procurement will result in additional new gas capacity and increased reliance on the aging, inefficient, and polluting fossil fleet to generate energy. Thus, the State will meet neither its clean energy nor greenhouse gas reduction goals and will continue to exacerbate the environmental injustices caused by continued heavy reliance on fossil fuel generation in disadvantaged communities.

Additionally, the potential lack of timely transmission availability to facilitate a large amount of deliverable renewable buildout remains one of CEERT's top concerns. This is not a failure of transmission planning, but a failure by the Commission to approve and oversee the timely construction of planned, approved and financed improvements to the existing transmission infrastructure. Even if this procurement happens to result in a diverse resource portfolio – an outcome that CEERT sincerely hopes for – without ensuring that transmission is physically available to deliver clean energy to the customer, the State will ultimately fail to cost effectively achieve its grid decarbonization goals.

California's clean energy transition is not optional. The well-being of the citizens of California, especially our most vulnerable populations, and the urgency to demonstrate and sustain a pathway to 100% clean energy requires us to innovate and reimagine our siloed regulatory policies. Thus, given that this is likely the last large procurement effort for the next 5-7 years, CEERT strongly encourages the Commission to thoughtfully analyze the State's options, make informed and integrated decisions in this procurement, and beyond, with a focus on the

⁸ D.19-11-016, issued in R.16-02-007 (IRP) on November 13, 2019.

goals of Senate Bill (SB) 100, SB 350, and SB 1090,⁹ and use this opportunity to set California on a path to achieve a decarbonized economy.

As the California Independent System Operator (CAISO) noted at the beginning of its Opening Comments, “this procurement is for capacity and energy.”¹⁰ As Pacific Gas and Electric (PG&E) noted, the resource selection criteria for this procurement is that the resource must:

- 1.) Mitigate net peak
- 2.) Mitigate energy demand in all hours of the day
- 3.) Be dispatchable
- 4.) Have ramping characteristics to meet the sunset drop off in energy production
- 5.) Be a combination of the above¹¹

CEERT notes that this description of the “optimum resource” precisely matches the definition of a high inverter loading ratio DC coupled solar + storage hybrid that is presented to the grid through a single low cost energy bid as a completely dispatchable, zero Pmin, zero start time, extremely fast ramping, 7x12 strip of energy from 10am until 10pm.¹² Furthermore, PG&E’s resource selection criteria matches the description of a standard Levelized Cost of

⁹ SB 1090 (Monning), Diablo Nuclear Power Plant. Requires the Commission to: approve full funding for the community impact mitigation settlement and the employee retention program proposed in the initial application; ensure that integrated resource plans (IRPs) are designed to avoid any increase in emissions of greenhouse gas emissions as a result of the retirement of Diablo Canyon; establish an expedited advice letter process for approval and implementation the community impact mitigation settlement and the employee retention program; and, Makes findings and declarations regarding the joint proposal entered into between PG&E and interested parties concerning the retirement of Diablo Canyon, at the expiration of its current operating license period. Approved by the Governor, September 19, 2018.

https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB1090

¹⁰ Opening Comments of CAISO, p.1

¹¹ Opening Comments of PG&E, p.22

¹² See footnote 50 on page 20.

Energy (LCOE) based least cost/best fit criteria, as CEERT strongly recommends be used for this procurement.

PG&E goes on to note that because the 2021-2026 retirements that drive the need determination are weighted towards the South of Path (SP) 15 zone,¹³ the location of the replacement capacity is important to avoid peak hour North to South congestion on Path 26. What PG&E fails to note is that the North of Path (NP) 15 retirements are overwhelmingly the high capacity factor Diablo Canyon nuclear plant while the SP 15 retirements are predominately the old, inefficient, wheezing low capacity factor once-through-cooling (OTC) gas plants. Therefore, the energy deficit created by these retirements is roughly an order of magnitude higher in NP 15 than they are in SP 15. The predominate Path 26 flows created by locating the replacement capacity precisely at the site of the retiring capacity will be South to North. CEERT notes that, currently, Path 26 congestion is already South to North.¹⁴ Adding 17 TWH/yr to the NP 15 energy deficit will only increase South to North congestion. The impacts of the location, resource type and dispatch patterns of the replacement capacity simply cannot be divorced from the “pure capacity” accounting rule.

Capacity has no associated emissions, only the energy produced by that capacity. Environmental justice parties protest pollution in disadvantaged communities and are told not to worry because the annual criteria pollutant emissions from the low capacity factor fossil plants are low. This ignores the fact that it is during an August heat storm –when outside temperatures

¹³ NP 15 retirements over this period in the stack analysis are 2,473 MW and SP 15 retirements are 4,095 MW, Opening Comments of PG&E, Summary Table of Stack Analysis in Appendix A, p. A-1. Retirements were calculated by taking the difference of the Existing Resource Total (NQC) between 2021 and 2026, for North and South respectively.

¹⁴ See, e.g., 2021-03-Presentation-California_ISO_Annual_Interregional_Information_Mar_30_2021.pdf <https://northwestpowerpoolcorp.my.webex.com/northwestpowerpoolcorp.my/j.php?MTID=m11061607a45401c45640736be0bf9b9c>

are unbearable and cooling, dispersing winds are absent – that these old inefficient plants are cranked up to generate energy to be transmitted by wire to affluent communities whose air conditioners are cranked up to condition their living space, and the pall of pollution from these plants hangs over the sweltering low income communities where the plants are located. If and when, as a last resort, there is an involuntary load shed to maintain system balance, it is energy flow to consumers of all income brackets, not capacity, that is interrupted. The new resources procured here will be with us on a daily basis for the next forty years, not simply for forty months to be used for a few stress hours to get us through this rough patch of tight supply/demand balance.

The attempt to “busbar map” precise locations of new resources to minimize transmission costs using the crude tool of the RESOLVE/SERVM modeling platform is akin to attempting calligraphy while wearing boxing gloves. At this point, the CAISO Interconnection Queue itself represents the simplest, quickest, least cost, most efficient “busbar mapping tool” available. The fifteen year old¹⁵ queue process is specifically designed for this task. There are currently over 120,000 MW of potential projects in the total queue that will be vying to be among the up to roughly 18,000 MW of resources chosen.¹⁶ It is easy and low cost to enter the queue; however, as the study process that is fully funded by participants proceeds, the stakes quickly escalate, and weaker projects withdraw to avoid the next larger cash deposit.

Any transmission required to make a project fully deliverable must be financed by the project itself. By the time a project has reached the finish line with a signed “Interconnection Agreement,”

¹⁵ This year’s queue is termed Queue Cluster #14. The first such cluster was termed the “Transition Cluster” followed by Queue Cluster #1

¹⁶ The queue is overwhelmingly composed of solar with a qualifying capacity (QC) of roughly 10% of nameplate capacity and battery storage with a QC equal to its nameplate capacity. Therefore the mean of the queue would require roughly 18,000 MW nameplate capacity that is fully deliverable to achieve a target 10 GW of resource adequacy (RA) net qualifying capacity (NQC).

the developer has paid literally millions of dollars just for the right to bid in the IRP procurement before one spade of dirt has been turned on either the project itself or the incremental transmission. Any reimbursement of those expenses, including the transmission upgrades required for deliverability, must come from proceeds of actual operation and production of energy. There is thus a very strong and direct incentive to only present the best of a least cost/best fit suite of projects with the best busbar mapping to the least cost location.

The procurement will be deemed competitive if the “bid coverage ratio” is significantly above 1.0. That is, roughly 30,000 MW of the best projects will be bidding for that 18,000 MW chosen for construction. Only the development costs of the 18,000 MW chosen will impact customer rates. In today’s environment where cost of new generation is often lower than current system average costs, this rate pressure is often downward – even in the short term.

II. TIMELINE OF ADDRESSING, PLANNING, AND PROCURING FOR KNOWN RETIREMENTS

CEERT appreciates the Commission’s attention in the ALJ Ruling on replacement capacity in anticipation of the retirements of Diablo Canyon and once-through cooling (OTC) generation facilities. However, CEERT agrees with parties such as the California Community Choice Association (CalCCA)¹⁷ and the California Energy Storage Alliance (CESA) that this time crunch on need analysis and associated procurement could and should have been easily avoided had the Commission undertaken “sufficient forward planning and timely least-regrets procurement orders.”¹⁸ As a not unexpected result of the Commission’s procrastination on planning and procurement, the Statewide Advisory Committee on Cooling Water Intake Structures (SACCWIS) voted on March 26th 2021, to recommend another extension of the

¹⁷ Opening Comments of CalCCA, at pp. 1-2.

¹⁸ Opening Comments of CESA, at p. 1.

Redondo Beach OTC plant for an additional 2 years – from its current extended retirement date of December 31, 2021 to December 31, 2023. Coincidentally, this affirmative SACCWIS vote took place as parties in this IRP proceeding filed their Opening Comments on the ALJ Ruling.

Akin to the previous emergency procurements ordered by D.19-11-016 and D. 21-03-056, the procurement initiated by the ALJ Ruling presents another “just-in-time” procurement order. CEERT agrees with the California Independent System Operator (CAISO), CESA, the Green Power Institute (GPI), and Form Energy, Inc. (Form Energy) that the Commission must move expeditiously away from this just-in-time procurement pattern,¹⁹ especially as the State faces increasingly variable, extreme weather and future reliability issues.

Along this line, in its Opening Comments Golden State Clean Energy (GSCE) correctly states:

“Urgent procurement is more expensive, does not create longer-term incentives for new build of needed resources, and jeopardizes California’s carbon-reduction goals. We need to ensure our long-term planning efforts lead to sufficient procurement within the structured IRP cycles so [load serving entities (LSEs)] can sign long-term [power purchase agreements (PPAs)] for clean, new-build resources, which also makes long-lead time projects possible.”²⁰

Much of the delay on procurement implementation is due to the apparent “analysis paralysis” by the Commission. Thus, CEERT also agrees with CESA that

“The focus of the IRP process to date has more heavily focused on calibrating the IRP process itself and in improving modeling design, assumptions, and outcomes, which in many ways is important and necessary, but at this point, CESA believes that the IRP proceeding must be re-balanced to focus on procurement and infrastructure development, as informed by the modeling results and sensitivities, to get the state out of this perpetual cycle of just-in-time procurement.”²¹

¹⁹ Opening Comments of CAISO, at p. 13; Opening Comments of CESA, at p. 2; Opening Comments of GPI, at p. 4; and Opening Comments of Form Energy, at p. 16.

²⁰ Opening Comments of GSCE, at p. 5.

²¹ Opening Comments of CESA, at p. 3.

Going forward, if the State is to have any chance of meeting its climate and clean energy goals, the Commission must break this perpetual cycle of procrastination to implement the terms of SB 100.

III. ACCELERATED PROCUREMENT TIMEFRAME AND GREENHOUSE GAS CONSIDERATIONS

CEERT agrees with the CAISO and Form Energy that an accelerated procurement timeframe is prudent²² given the effects from years of delay on analyzing need and finding replacement capacity for Diablo Canyon and other mid-term retirements. However, CEERT also understands GPI's concern that "...a compression of time to meet the identified need...may affect the ability for new renewable resources, especially large, long-lead time resources to meet the accelerated procurement deadlines."²³ As such, CEERT believes a critical balance must be made between precision in designing an "optimum portfolio" in an accelerated timeframe and accuracy in achieving long term goals. The Commission must avoid pushing large amounts of low cost, clean resource procurement to the end of the decade, and ensure that a robust diversity of technology and resource types will be eligible for this "Mid Term" procurement.

Furthermore, CEERT strongly believes that an accelerated timeframe must be met with a stringent GHG standard in line with SB 1090. CEERT concurs with the concerns of the Natural Resources Defense Council (NRDC), the California Environmental Justice Alliance (CEJA) and the Sierra Club, Environmental Defense Fund (EDF), Union of Concerned Scientists (UCS), the Public Advocates Office (Cal Advocates) and GSCE that the ALJ Ruling focuses exclusively on reliability and fails to consider GHG emissions reductions in the procurement criteria.²⁴ Beyond its requirement

²² Opening Comments of CAISO, at pp. 8-9 and Opening Comments of Form Energy, at p. 15.

²³ Opening Comments of GPI, at p. 11.

²⁴ Opening Comments of NRDC, at p. 1; Opening Comments of CEJA and Sierra Club, at p. 1; Opening Comments of EDF, at p. 1; Opening Comments of UCS, at p. 1; Opening Comments of Cal Advocates, at p. 33; and Opening Comments of GSCE, at p. 3.

under statute, explicitly including GHG parameters in this procurement will ensure that this effort does not unnecessarily default to fossil fuel procurement to meet the accelerated timeframe.

CEERT supports the Joint Parties' analysis in their Opening Comments on the Commission's legal obligation under the June 2016 "Joint Proposal", SB 1090, and SB 350 to ensure that the closure of Diablo Canyon not result in any GHG emissions increase.²⁵ This obligation includes but is not limited to cumulative emissions, as explained in the Joint Parties' Opening Comments:

"SB 1090's legal mandate has a direct impact on the actions the Commission is required to take in this IRP Proceeding. Instead of focusing solely on achieving reductions in GHG emissions by the year 2030 for the purposes of SB 350 compliance, it is incumbent upon the Commission to prevent any increase in GHG emissions attributable to the retirement of the Diablo Canyon generating units between now and the year 2030. Thus, the Commission must consider and address cumulative GHG emissions to ensure that Diablo Canyon's retirement does not lead to any increase in GHG emissions during the years leading up to 2030."²⁶

As such, CEERT supports the Joint Parties' request to enter UCS' recent analysis, "*Countdown to Shutdown: California's Clean Energy Future After Diablo Canyon Closes*" into the record of this proceeding.²⁷

IV. ENERGY NEED AND TRANSMISSION AVAILABILITY

As mentioned above, one of CEERT'S greatest concerns with the procurement outlined in the ALJ Ruling is the lack of attention to the energy needs of the grid, demonstrated by its exclusive focus on capacity procurement. NRDC correctly summarizes this notion in its Opening Comments:

"Solely requiring [LSEs] to procure net qualifying capacity (NQC) won't ensure that both GHG reduction goals as well as reliability goals will be met. For example, if LSEs don't acquire the right mix of clean generation and storage, and instead procure too much storage without enough new clean generation, then that new storage will likely be charged through fossil resources. This will result in increased emissions and is counter to this proceeding's GHG reduction requirements. The

²⁵ Opening Comments of the Joint Parties, at p.10.

²⁶ *Id.*, at p. 11.

²⁷ *Id.*, at p. 2.

Commission should require LSEs to procure enough clean generation to comply with California’s reliability needs, GHG reduction goals, and SB1090’s mandate of replacing Diablo Canyon Nuclear Plant without increasing GHG emissions.”²⁸

Numerous other parties, including the Long-Duration Energy Storage Association of California (LDESAC), CalCCA, GSCE and GPI express similar concerns in their Opening Comments.²⁹

Even if sufficient resources are procured to meet both capacity *and* energy need, without an avenue to deliver said energy to customers, this effort is futile. Therefore, a similar issue of equal or greater concern to CEERT is actual transmission availability. As the Solar Energy Industries Association, the Large Scale Solar Association, and Vote Solar (together the Joint Solar Parties) correctly observe, “the principal risk facing the proposed procurement need is the availability of firm transmission to assure deliverability of the selected resources.”³⁰ This phenomenon is already manifesting in significant interconnection delays. CEERT shares American Clean Power-California’s (ACP-CA’s) concern about

“...the presumption that all resources that are under contract will meet their projected [commercial operation dates (CODs)], and recommends that the Commission continue to investigate delays in interconnection and transmission upgrades to factor commercial timelines into procurement timelines associated with system reliability.”³¹

The need for robust transmission planning and *completed* transmission projects is supported by CEERT and numerous other parties’ long-standing argument in this proceeding for a lower GHG target. The 46 million metric ton (MMT) GHG emission target used in the most recent Reference System Plan (RSP) and transmitted to the CAISO for use in its Transmission Planning Process does not accurately capture the amount of buildout necessary to replace Diablo Canyon and other

²⁸ Opening Comments of NRDC, at p. 4.

²⁹ Opening Comments of LDESAC, at pp. 3-4; Opening Comments of CalCCA, at p. 4; Opening Comments of GSCE, at p. 3; and Opening Comments of GPI, at p. 24.

³⁰ Opening Comments of the Joint Solar Parties, at p.

³¹ Opening Comments of ACP-CA, at p. 3.

retiring resources while meeting the State’s SB 100 goals. A lower GHG target would result in necessary but modest transmission upgrades in the Transmission Planning Process (TPP) modeling and ultimately send the correct market signals to spur critical clean energy development. Thus, CEERT supports the Joint Parties’ following recommendations to the Commission: 1) Adjust the procurement requirement in a revision to the February 22 Ruling to align with the identified need in the 38 MMT target; 2) Adopt the 38 MMT GHG target in the Preferred System Plan via a new, revised version of the February 22 Ruling, and in a subsequent Commission decision, and; 3) Adopt the 30 MMT GHG target in the Reference System Plan in the next planning cycle.³²

Along this line, CEERT also believes data transparency must be a standard going forward, and urges the Commission to “ensure that as much information as possible is public.”³³ CEERT agrees with SCE that

“[s]ince the baseline generator list provides a limited set of information such as facility name, nameplate capacity, in-service date, and other high-level information, [there is no] need to keep any information confidential when staff updates the baseline generator list with new in development resources from LSEs’ Resource Data Templates....”³⁴

CEERT sees data transparency and the ability for stakeholders to be as engaged as much as possible, especially on issues such as transmission and distribution cost, as key to ensuring this procurement is successful and in line with California’s policy goals. On March 29, CEERT filed a protest to the string of Advice Letters by all three investor-owned utilities (IOUs) to replace the long standing public disclosure of the status of transmission construction of specific projects to allow interconnection and deliverability of new resources in the “AB 970 Reports”

³² Opening Comments of the Joint Parties, at p. 3.

³³ Opening Comments of CEJA and the Sierra Club, at p. 37.

³⁴ Opening Comments of SCE, at p. 41.

with an opaque, complicated, confidentiality ridden process (at least by PG&E, the first of the 3 IOUs to roll out the new reporting process) designed to allow select interested parties to adjudicate changes in transmission rate base before the Federal Energy Regulatory Commission (FERC).³⁵

CEERT notes that AB 970 was passed by the legislature in 2000 during a time, not unlike today, when there was a rush to construct new resources to mitigate the consequences of the 2000-2002 Energy Crisis. That crisis was a primary factor in the only recall of a sitting Governor in the history of California and resulted partly from a lack of transmission capacity to ensure deliverability of new generation. That “just in time procurement” and enlistment of the Department of Water Resources to enter into long term contracts with both new and existing gas fired resources has essentially defined the California generation fleet ever since. We are at another defining moment in history.

As mentioned in its Opening Comments, due to the legitimate concern of the effect of this procurement on customer rates, CEERT urges the Commission to undertake a transparent and thorough analysis of the impact of energy costs, including fossil fuel purchases, investments required to reliably and safely deliver those fossil fuels to the electric generator burner tip, and electric distribution costs – rather than simply a relatively small subset of transmission costs. CEERT recommends the Commission model and comprehensively analyze distribution costs and its effects on ratepayer costs through a similar method to LADWP’s recent LA 100 study.³⁶ This

³⁵ Response of the Center for Energy Efficiency and Renewable Technologies to San Diego Gas and Electric Company’s Petition to Modify D.06-09-003 to Suspend Reporting Requirements, filed in I.00-11-001 on March 26, 2021.

³⁶ Palmintier, Bryan, Meghan Mooney, Kelsey Horowitz, Sherin Abraham, Tarek Elgindy, Kwami Sedzro, Ben Sigrin, Jane Lockshin, Brady Cowiestoll, and Paul Denholm. 2021. “Chapter 7: Distribution System Analysis.” In *The Los Angeles 100% Renewable Energy Study*, edited by Jaquelin Cochran and Paul Denholm. Golden, CO: National Renewable Energy Laboratory. NREL/TP-6A20-79444-7. <https://www.nrel.gov/docs/fy21osti/79444-7.pdf>.

cost analysis must also encompass energy bills paid to not only the LSE electricity provider, but also the natural gas provider and the gasoline and diesel provider, as well as the cost to the health provider of fossil pollution costs and the costs to society of greenhouse gas emissions.

V. RESOURCE TYPE ELIGIBILITY

In line with ensuring that GHG considerations are taken into account, energy need is quantified and addressed, and sufficient transmission is available to deliver renewable energy to the customer, CEERT strongly agrees with ACP-CA, EDF, UCS, and the CAISO that a focus on resource diversity is essential³⁷ and must be a guiding principle in this procurement. As such, CEERT believes that the focus on a “set aside” for geothermal and long-duration storage is warranted,³⁸ especially considering these resources are not well represented by the RESOLVE model. Furthermore, comments by The Utility Reform Network (TURN), Pacific Gas & Electric (PG&E), San Diego Gas and Electric (SDG&E), GSCE, and Ormat Technologies, Inc. (Ormat) reflect CEERT’s view that imports must be allowed to count as incremental capacity in this procurement.³⁹

CEERT is vehemently opposed to any additional gas capacity procurement. CEERT agrees with CEJA and the Sierra Club, EDF, TURN, UCS, GSCE, Protect Our Communities Foundation (PCF), CESA, and GPI that fossil-fueled resources should not be eligible in this Mid-Term Reliability Procurement.⁴⁰ Procuring additional natural gas generation to meet capacity

³⁷ Opening Comments of ACP-CA, at p. 8; Opening Comments of EDF, at p. 7; Opening Comments of UCS, at p. 7; and Opening Comments of CAISO, at p. 10.

³⁸ Reflected in Opening Comments of EDF, at pp. 6-7 and Opening Comments of The Utility Reform Network, at p. 9.

³⁹ Opening Comments of TURN, at p. 16; Opening Comments of PG&E, at p. 25; Opening Comments of SDG&E, at p. 14; Opening Comments of GSCE, at p. 10; and Opening Comments of Ormat, at p. 7.

⁴⁰ Opening Comments of CEJA and the Sierra Club, at p. 7; Opening Comments of EDF, at p. 2; Opening Comments of TURN, at p. 15; Opening Comments of UCS, at p. 8; Opening Comments of GSCE, at p. 9;

need largely attributed to the retirement of Diablo Canyon is entirely contrary to the terms of Diablo Canyon’s closure outlined in SB 1090 and the goals of the State per SB 100 and SB 350. Thus, CEERT agrees with EDF that “[r]atepayers should not support short-term investments in new fossil resources when they could instead make long-term investments in clean firm resources that better support decarbonization.”⁴¹ Instead, the Commission must seize this opportunity and target its procurement efforts to facilitate the orderly transition away from dependence on the natural gas system.

VI. THE COMMISSION’S MODELING IN THE IRP PROCESS MUST BE ADJUSTED, AND EVENTUALLY COMPLETELY OVERHAULED

CEERT strongly believes that key changes in the ALJ Ruling’s procurement modeling must be made to ensure the correct portfolio of resources is procured. Namely, the blunt addition to the planning reserve margin (PRM) in the ALJ Ruling does not take uncertainty directly into account or with sufficient granularity to address the changing grid landscape and the effects of climate change. CEERT agrees with GPI that the “...PRM in the ALJ Ruling is not adequately justified based on updated, quantitative planning standards including an agreed upon [loss of load expectation (LOLE)], nor is it based on updated weather patterns that reflect the current or anticipated impacts of climate change.”⁴² CEERT aligns with numerous parties including NRDC, CEJA and Sierra Club, EDF, TURN, UCS, Southern California Edison (SCE), PG&E, Cal Advocates, and GPI that believe the 20.7% PRM in the ALJ Ruling does not sufficiently represent the needs of the grid.⁴³

Opening Comments of PCF, at p. 2; Opening Comments of CESA, at p. 26; and Opening Comments of GPI, at p. 17.

⁴¹ Opening Comments of EDF, at p. 9.

⁴² Opening Comments of GPI, at p. 6.

⁴³ Opening Comments of NRDC, at p. 2; Opening Comments of CEJA and the Sierra Club, at p. 17; Opening Comments of EDF, at p. 3; Opening Comments of TURN, at p. 1; Opening Comments of UCS,

Furthermore, CEERT believes that the calculation of the PRM must include a more stringent weather forecast than the current 1-in-2 standard. In its Opening Comments, CESA correctly states:

“The Commission should begin to utilize more strict forecasts (*i.e.*, 1-in-10) for the purposes of the IRP planning track to reflect the increased likelihood of extreme weather events. The August and September heat wave events of 2020 and, to some degree, the energy crisis related to the Texas and Southern USA polar vortex in February 2021, demonstrate the relevance of accounting for extreme weather condition when planning for a reliable and resilient electric system.” (CESA, at p. 7)

CEERT believes the biggest unknown to the grid in addition to climate variability is the volatile load growth on a year-to-year basis associated with evolving energy demand, such as from electrification of other sectors and development and maintenance of massive data centers. In a recent letter to the CAISO Board of Governors, Silicon Valley Power⁴⁴ noted that the Santa Clara County Planning Commission alone has granted building permits to enough data centers whose load is not accounted for in the Baseline CEC forecast used to establish need in this procurement equivalent to almost one quarter of the energy production of Diablo Canyon. CEERT strongly believes these unknowns must be accounted for directly in the calculation of a PRM through the use of a 1-in-10 weather forecast and unforced capacity (UCAP) mechanism, which could capture variability from both climate change, individual resource reliability, and load growth fluctuations. CEERT also agrees with SCE and the CAISO that recalibrating the PRM frequently is necessary as the grid composition changes more rapidly, load fluctuates with evolving energy use profiles, and to account for the ongoing impacts of climate change.⁴⁵

at p. 6; Opening Comments of SCE, at pp. 4-5; Opening Comments of PG&E, at p. 2; Opening Comments of Cal Advocates, at p. 2; and Opening Comments of GPI, at p. 2

⁴⁴ Silicon Valley Power’s Letter to the CAISO, Subject: Silicon Valley Power’s Rapid Load Growth and Urgent Need to Plan for Capacity Increases in South Bay, sent March 22, 2021.

⁴⁵ Opening Comments of SCE, at p. 16 and Opening Comments of CAISO, at p. 2.

Finally, CEERT continues to maintain that a complete overhaul of the IRP modeling, which relies heavily on RESOLVE and SERVM, is warranted in the near future given the failure of these models to accurately account for and include important clean resources such as geothermal and hybrid solar + storage. The fundamental architecture of these models is simply incapable of dealing with the range of new resources available to be procured. As the State's grid evolves, it only makes sense that its analytical tools follow suit to ensure accuracy to the greatest extent possible and reduce the chance of obfuscating vital market signals. We strongly encourage the PUC to work collaboratively with the California Energy Commission, CAISO, Publicly Owned Utilities and stakeholders to develop more accurate, transparent, and appropriate modeling tools, assumptions, and scenarios that will enable California's resource planning to be truly integrated.

VII. THE COMMISSION SHOULD RECOMMEND THE HIGH PROCUREMENT NEED TO ENSURE RELIABILITY AND MORE ACCURATELY REFLECT MANDATED CLEAN ENERGY REQUIREMENTS

CEERT concurs with numerous party recommendations that the Commission adopt the High-Need scenario, including the Joint Solar Parties, ACP-CA, UCS, LDESAC, CAISO, CESA, and Form Energy.⁴⁶ ACP-CA correctly states that the 10.4 gigawatts (GW) included in the High-Need Scenario “is only a fraction of the total system need identified in the longer term by both the Reference System Plan for the 2019-21 IRP Cycle and the Final SB 100 Report. Again, this is an additional rationale for why the Commission should err on the upper end of its proposed procurement requirement.”⁴⁷ A higher level of procurement is more realistic in

⁴⁶ Opening Comments of the Joint Solar Parties, at p. 2; Opening Comments of ACP-CA, at p. 4; Opening Comments of UCS, at p. 5; Opening Comments of CAISO, at p. 5; Opening Comments of CESA, at p. 3; Opening Comments of Form Energy, at p. 13.

⁴⁷ Opening Comments of ACP-CA, at p. 4.

addressing load growth and is necessary to rectify the slow rate of renewable development to date, so as to not backload procurement into the end of the decade to meet SB 100. As EDF correctly states in its Opening Comments, “...there is very little ratepayer risk in requiring additional procurement today, but a large risk in delaying procurement to future years.”⁴⁸

In terms of procurement mechanisms, CEERT believes that for all the reasons stated above, a least cost/best fit approach, using LCOE rather than resource net qualifying capacity (RA-NQC), is critical. That is not to say that the procurement quantity cannot be delineated by the total portfolio RA NQC. Additionally, CEERT strongly believes this procurement should employ a bottoms-up approach, so that each LSE procures its share with backstop central procurement occurring as a last resort option.

VIII. NECESSARY CLOSE COORDINATION BETWEEN THE IRP AND RESOURCE ADEQUACY PROCEEDINGS

CEERT strongly agrees with parties including the Joint Solar Parties, ACP-CA, TURN, PG&E, and SDG&E that close coordination between this IRP proceeding and the Resource Adequacy (RA) proceeding (R.19-11-009) is imperative⁴⁹ as critical refinements to RA counting methodologies continue in the RA proceeding. This is especially relevant for hybrid solar + storage resources, which can provide invaluable benefits to the grid and help meet capacity needs. CEERT has made an easily implementable, no new policy proposal for changing the counting rules for these new hybrid resources in Track 3.B.1 of the RA proceeding.⁵⁰ CEERT urges that this simple but critical modification be adopted here. These resources must be able to

⁴⁸ Opening Comments of EDF, at pp. 5-6.

⁴⁹ Opening Comments of the Joint Solar Parties, at p. 6; Opening Comments of ACP-CA, at p. 4; Opening Comments of TURN, at p. 23; Opening Comments of PG&E, at pp. 43-44; Opening Comments of SDG&E, at p. 14.

⁵⁰ Track 3B.1 Proposal of the Center for Energy Efficiency and Renewable Technologies, filed in R.19-11-009 (RA) on January 28, 2021.

get appropriately counted and compensated for these incremental grid benefits, and as a result, have the ability to compete on a level playing field with conventional resources.

XI. CONCLUSION

CEERT appreciates the opportunity to comment on the ALJ Ruling. Overall, CEERT believes that this procurement represents a critical turning point in California's clean energy transition. As such, CEERT encourages the Commission to comprehensively take into account not only the procurement criteria proposed and analyzed by parties and stakeholders in this proceeding, but also critical factors, such as transmission availability, that will ultimately affect the ability of this procurement to add essential clean energy resources to the grid. California can reach its clean energy goals equitably while maintaining reliability and cost-effectiveness, but it will require the Commission to step up, facilitate and engage in a transparent stakeholder process, and ultimately make decisions based on the evidentiary record and synergies between the State's complementary goals.

Respectfully submitted,

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