BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

FILED
07/15/25
04:59 PM
R2005003

Order Instituting Rulemaking to Continue Electric Integrated Resource Planning and Related Procurement Processes.	R.20-05-003 (Filed May 7, 2020)

COMMENTS OF ENVIRONMENTAL DEFENSE FUND ON THE STAFF PROPOSAL FOR THE RELIABLE AND CLEAN POWER PROCUREMENT PROGRAM

DATED: July 15, 2025

Michael Colvin
Director, California Energy Program
ENVIRONMENTAL DEFENSE FUND
(415) 293-6122
mcolvin@edf.org

Yochanan Zakai
Orran Balagopalan
SHUTE, MIHALY & WEINBERGER LLP
(415) 552-7272
yzakai@smwlaw.com
obalagopalan@smwlaw.com

Attorneys for Environmental Defense Fund

TABLE OF CONTENTS

Page

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Continue Electric Integrated Resource Planning and Related Procurement Processes.	R.20-05-003 (Filed May 7, 2020)

COMMENTS OF ENVIRONMENTAL DEFENSE FUND ON THE STAFF PROPOSAL FOR THE RELIABLE AND CLEAN POWER PROCUREMENT PROGRAM

I. Introduction

Environmental Defense Fund (EDF) respectfully submits these comments on the Staff Proposal for the Reliable and Clean Power Procurement Program (Staff Proposal), pursuant to the Administrative Law Judge's April 29, 2025 ruling seeking comments on the Staff Proposal, and the May 14, 2025 e-mail ruling providing that opening comments on the Staff Proposal are due July 15, 2025, followed by reply comments on August 5, 2025. EDF greatly appreciates the significant time and effort Commission staff has expended developing the Reliable and Clean Power Procurement Program (Program). EDF believes that the Program, if designed effectively, can be the primary means by which the State achieves its decarbonization and reliability goals in a cost-effective and timely manner. The Program should be designed to both fully decarbonize the system and maintain system reliability while resulting in just and reasonable rates. In evaluating if the Program design is effective, EDF suggests that the key metric by which the Program should be judged is whether it incents LSEs to develop sufficient new zero-carbon and clean firm resources to substantially reduce reliance on polluting gas plants and eventually facilitate their retirement. Unfortunately, EDF suggests that several major changes to the Program are required before this metric is satisfied.

EDF's core concern with the Staff Proposal is the lack of rigorous detail in the design of the Clean Energy Standard. The Staff Proposal contemplates substantially finalizing the design

of the Clean Energy Standard by early 2026; the Commission could then issue binding allocations on the load serving entities (LSEs) for the 2028-2030 timeframe. EDF does not believe this timeline is realistic, given the unresolved details in the Staff Proposal's design of the Clean Energy Standard and Staff's apparent willingness to continue considering alternatives to the Clean Energy Standard. Simply put, EDF thinks there are too many details to be sorted out to result in meaningful procurement in the 2028-30 timeframe.

In particular, EDF believes that the Commission needs more time to design the Program's GHG reduction component. EDF recommends the Commission first resolve the key design elements of the Program's reliability component, and then start a follow-up stakeholder process to finalize the design of the GHG reduction component.

EDF understands that delaying the implementation of the Program risks creating a gap in the development of new clean and zero-carbon resources in the period after LSEs' obligations under the Mid-Term Reliability Decision (D.21-06-035) are complete, but before the Program is implemented. However, EDF does not believe the solution to this problem is to hurriedly adopt an imprecise Program with the potential to threaten the State's decarbonization goals. EDF believes the better option is for the Commission to issue an interim procurement order to bridge this gap, and allow sufficient time to design the Program's GHG reduction component.

In these comments, EDF outlines a list of crucial first principles to guide the design of the Program's GHG reduction component. These include:

> **Establish a Regular Cadence.** A core aim of the Program should be to provide certainty to LSEs regarding their obligations by establishing a regular cadence for identifying individual LSE GHG reduction requirements, and providing LSEs sufficient lead time to meet those obligations. The Program is being created in a time of unprecedented uncertainty in the electric sector; it should alleviate, not exacerbate, this pre-existing uncertainty.

Guarantee New Steel in the Ground. One of the primary goals of the Program should be to incentivize significant new clean and zero-carbon resource development. As proposed, the Staff Proposal's design of the Clean Energy Standard would potentially allow for the use of unbundled Renewable Energy Credits (RECs) and Zero-Emission Energy Credits (ZECs), which have a *very* tenuous connection to new steel in the ground, and no particular connection to new steel in the ground *in California*. EDF suggests that the Program's GHG reduction component provide the necessary market signals to guarantee the development of the substantial amount of new clean electric generating resources needed to meet the State's decarbonization goals. EDF recommends the Commission explicitly recognize that a key goal of the Program is to develop sufficient resources such that the State no longer needs to rely on fossil resources.

Incentivize Development of Long-Lead Time Resources. Absent from the Staff Proposal are any design features intended to send a market signal to LSEs to develop critical long-lead time resources, such as clean firm power options and offshore wind. As previously submitted into the record of this docket, modeling conducted by EDF, state agencies, and various other parties demonstrates that a substantial investment in clean firm power and other long-lead time resources that can deliver electricity at times of peak demand are critical to achieving the State's decarbonization and reliability goals while containing systemwide costs. The Commission has placed a preliminary cap on the state's Department of Water Resources' (DWR) functioning as the central procurement entity of 10.6 GW. EDF suggests that the RCPPP should be the handoff for the *next* tranche of long-lead time resources. As is, there are insufficient market signals that would incent LSEs to develop clean firm power and other long-lead time resources.

Incorporate Local Procurement Requirements. EDF has long advocated for the Commission to comply with its statutory obligation[1] to identify and order the procurement of new clean resources that are necessary to substantially reduce reliance on polluting fossil resources in disadvantaged communities and capacity-constrained areas, and eventually facilitate their retirement. EDF understands that Staff have been developing a local area modeling tool to aid in such analysis. EDF reiterates its request for Commission staff to prioritize the development of this tool so that the Program may incorporate specific requirements for local procurement.

Address the Unprecedented Increase in Electricity Demand from Data Centers. Staff and stakeholders need sufficient time to ensure the Program's GHG reduction component adequately reflects the potential for unprecedented new electricity demand from data centers. Data centers, which are becoming increasingly common in California, present unique issues because their power usage is both high and constant. Data Centers often have different reliability requirements and standards compared to other high electric customers. To date, little discussion has been had in this docket regarding the particular planning and procurement needed to ensure the addition of data centers do not threaten the grid. More time is needed to incorporate these unique considerations into the Program.

[1] Pub. Util. Code § 454.57(e).

Safeguard Against Adverse Effects of Unbundled Credits. The Staff Proposal, as is, leaves the door open for the Commission to adopt a Clean Energy Standard that allows LSEs to meet their GHG reduction compliance by relying on unbundled energy credits. Unbundled energy credits present a significant risk to the State's decarbonization goals because, among other factors, they do not ensure new resource development (as discussed above) and require complex tracking mechanisms. Should the Commission intend to allow for the use of unbundled energy credits, EDF would advocate strongly for substantial work by staff and stakeholders to establish safeguards that reduce the negative impacts of such compliance instruments.

Integrate the Impending Western Regional Electricity Market. The Staff Proposal does not mention the Western regional electricity market that is being developed, following the launch of the West-Wide Governance Pathways Initiative. If implemented, this regional market could provide an additional viable option of how California LSEs' meet their compliance obligations under the Program. The Program must be designed intentionally to accommodate, and maximize the benefits of, this forthcoming regional market.

Prevent Resource Shuffling. The Staff Proposal is silent on the Legislature's clear prohibition[2] against causing an increase in GHG emissions in the Western region, despite leaving the door open for the Program's GHG reduction component to rely on unbundled energy credits. The risk of potential resource shuffling will only increase in the future, particularly due to the impending adoption of the Western regional energy market. Staff and stakeholders need sufficient time to develop safeguards that protect against the risk of resource shuffling.

Define Eligible Resources to Reflect State Policy and Science. The Staff Proposal suggests that the Program's GHG reduction component will make eligible all zero-carbon resources encompassed within SB 100, including nuclear and large hydropower resources that are currently excluded from eligibility under the Renewable Portfolio Standard (RPS). EDF opposes allowing LSEs to comply with their GHG reduction requirements by relying on electricity generated by Diablo Canyon power plant, a nuclear generating electric facility, given the clear state policy directing its retirement and replacement. EDF also cautions against authorizing LSEs to rely on legacy hydropower resources, given the scientific evidence indicating these resources' GHG impact can be akin to fossil resources. The Staff Proposal's discussion of resource eligibility requirements is cursory, and substantial time and effort must be dedicated to defining such requirements, as was demonstrated in the years-long process that culminated in the RPS' eligibility guidelines.

Require Long-Term Contracting. The Staff Proposal's discussion of the Clean Energy Standard omits any long-term contracting requirements. As demonstrated over the last 20+ years of power procurement policy in California, long-term contracting requirements are crucial to providing developers with the certainty necessary to cost-effectively

[2] Pub. Util. Code § 454.53(a).

develop new resources. Such requirements will particularly be necessary if unbundled energy credits are used as a compliance instrument, given the lack of any direct connection to new steel in the ground.

EDF expresses no preference on the key issues regarding the design of the Program's reliability components. However, EDF strongly opposes the 2.5% reliability procurement need "buffer" and the 1.5%-3% Collective Capacity Reserve requirement. The Commission has consistently adopted conservative planning standards, and there is no evidence demonstrating these buffers are necessary to ensure reliability. Neither proposed buffer is warranted, particularly in light of the State's severe affordability crisis—which the Program aims not to exacerbate.

II. Staff and Stakeholders Need More Time to Design the Program's GHG Reduction Component.

EDF cautions the Commission against adopting a Clean Energy Standard without substantial additional work by stakeholders and staff, for two reasons. First, the Staff Proposal's description of the Program's GHG reduction component lacks sufficient detail to be implemented at this time. It appears staff has not even determined at this point whether to adopt a Clean Energy Standard to guide GHG reduction. Second, the GHG reduction component should be designed to complement the Program's reliability component, and thus should not be finalized until the Commission resolves the two core reliability design issues (Slice-of-Day v. Marginal ELCC and Option I v. Option II). EDF recommends the Commission first adopt, or substantially adopt, the Program's reliability component, and then move forward with a process for developing the Program's GHG reduction component, including holding additional GHG-specific workshops and soliciting additional record development. EDF recognizes that this will take time and resources, and could cause a delay in the Program's design until after LSEs have completed their Mid-Term Reliability (D.21-06-035) obligations. **Therefore, EDF suggests that**

the Commission issue a new interim procurement order to ensure continued new clean resource development while the Program's design is finalized.

The Staff Proposal envisions that "[s]taff would complete a stakeholder process to determine the zero-carbon resources eligible for the CES, which would include consideration of currently non-RPS-eligible resources,"[3] closely followed by self-imposed deadlines of spring 2026 for staff to "publish a RCPPP citation program resolution consistent with this proposal to establish compliance rules for the CES,"[4] including penalties for administrative errors; and staff to "provide LSEs binding CES annual allocations for [compliance period] 6, spanning 2028-2030"[5]. EDF does not believe the Staff Proposal's timeline for adoption and implementation of the Clean Energy Standard is realistic, for numerous reasons.

For one, staff does not appear to have determined that the Program's GHG reduction component will ultimately be based on a Clean Energy Standard. At the June 25-26 workshop, numerous parties express their dissatisfaction with the Clean Energy Standard, and advocated for the adoption of a Mass-Based GHG Standard. At the workshop, Commission staff expressed interest in parties' Mass-Based proposals, and welcomed comments from parties illustrating the magnitude of the issues with the Clean Energy Standard. EDF thus suspects that staff is far from finalizing the GHG reduction component of the Program, whether based on a Clean Energy Standard or Mass-Based GHG Standard.

Even if the Commission were to ignore the Mass-Based GHG Standard proposals and move forward with the Clean Energy Standard, it is unlikely staff and stakeholders could

[3] Staff Proposal, at 47.

[4] Staff Proposal, at 48.

[5] Staff Proposal, at 48.

complete the substantial additional work necessary to finalize the Clean Energy Standard's design in the proposed time. The Staff Proposal's description of the Clean Energy Standard lacks significant detail regarding: whether ZECs will be unbundled or bundled; which resources will be eligible to create ZECs; guardrails to ensure the Program does not violate the statutory prohibition on resource shuffling[6]; design features to guarantee significant new resource development; long-term contracting requirements additional to those that exist in the RPS; and design features to incent development of long-lead time resources. EDF discusses each of these crucial design elements, among others, in greater detail below.

The 2026 deadlines are overly ambitious considering that stakeholder processes to define eligible resources, establish program rules, and develop a tracking system cannot even start until the Commission considers comments and alternatives to the existing proposal. In order for staff to provide binding annual allocations for 2028 through 2030, the Commission will need—at minimum—to formally adopt a definition of eligible resources, develop and adopt program rules, and ensure the existence of a stable and accurate tracking system. The development of Western Renewable Energy Generation Information System (WREGIS) to track Renewable Energy Credits took several years (from the Renewable Portfolio Standard passage in 2002 until 2007 and its required use by the Energy Commission in 2008).[7] EDF does not believe it is feasible to complete this significant work within the timeline delineated in the Staff Proposal. Defining the credit and ensuring that there is a robust system in place for tracking those credits are critical steps to ensure program integrity and viability that should not be rushed.

---

[6] Pub. Util. Code § 454.53(a) (The achievement of the State's GHG reduction goals "shall not increase carbon emissions elsewhere in the western grid and shall not allow resource shuffling").

[7] California Energy Commission, "Informational Item – Western Renewable Energy Generation Information System (WREGIS), at 3 (May 8, 2024), https://www.energy.ca.gov/filebrowser/download/6345?fid=6345.

EDF also believes it is prudent to dedicate more time to the development of the GHG reduction component of the Program to ensure it complements the particular design of the reliability component the Commission ultimately adopts. It appears from the Staff Proposal and staff workshops that the Commission is considering the design of these components on independent, parallel tracks. EDF does not believe that these two components can be designed independently of one another. The reliability component's design hinges substantially on whether the Commission adopts one of two options presented in the Staff Proposal. Whether the reliability component of the Program is designed pursuant to Option I or Option II will significantly impact the necessary design features of the GHG reduction component.

For example, under Option I, LSEs would be permitted to meet their individual allocated reliability need through contracts with existing and new resources; LSEs would not have any specific obligation to procure new resources.[8] Under Option II, however, LSEs would be required to meet their allocated reliability need solely through contracting with "New Vintaged Resources," as defined in the Staff Proposal.[9] The reliability component of the Program under Option II would thus generally function as a vehicle for issuing new resource procurement orders similar to those the Commission has issued in the IRP proceeding, but on a consistent basis.

If Option II is selected and the Program includes routine procurement orders requiring contracting with new resources, it *may* be feasible to design the GHG reduction component to rely on energy credits as a compliance instrument while still incentivizing the development of substantial new clean energy resources. However, if Option I is selected, and there are no specific new build requirements, it would likely be necessary to incorporate substantial design

[8] Staff Proposal, at 19.

[9] Staff Proposal, at 19.

features into the Program's GHG reduction component to ensure LSEs develop substantial new resources (e.g., under a Clean Energy Standard, requiring that a certain percentage of credits LSEs must retire for a compliance period be from new vintaged resources located in California).

After reviewing the Staff Proposal and attending the multiple workshops, EDF's assessment is that the development of the Program's reliability component is much further along than the design of the GHG reduction component. EDF thus recommends that the Commission first resolve the key reliability issues, and then move forward with a record development process for designing the GHG reduction component of the Program.

EDF is greatly concerned that the adoption of a hastily-designed GHG reduction component could lock the State into decades of suboptimal outcomes that jeopardize the State's aggressive decarbonization goals and exacerbate existing energy affordability concerns. EDF does not believe it is prudent to simply adopt an imprecise and ineffective Program on the grounds that LSEs' Mid-Term Reliability Decision obligations are nearly complete. If necessary, EDF would instead support an interim procurement order to bridge the gap between the completion of LSEs' Mid-Term Reliability Decision obligations and the implementation of the Program, while maximizing soon-to-disappear federal tax benefits[10]. EDF recognizes both the substantial amount of staff time that goes into procurement orders, and that this Program is specifically intended to forego the need for such ad hoc procurement orders. However, EDF strongly believes that the adoption of a rushed Program design is a much worse outcome than the issuance of another interim procurement order while staff and stakeholders deliberate on the Program's design.

[10] *See* Section III.A, *supra*.

III. Principles for Effective Design of the Program's GHG Reduction Component.

The Staff Proposal's design of the Clean Energy Standard lacks the rigorous detail needed to ensure that the Program will set the State on the path to meeting its aggressive decarbonization goals. To effectively design the Program's GHG reduction component, EDF believes it is necessary to first identify a set of principles to guide staff and stakeholders as they work through program design. Here, EDF offers a set of the core goals for the Program's GHG reduction component, explains why the Staff Proposal's current design of the Clean Energy Standard will not achieve these goals, and articulates potential design features for consideration as staff and stakeholders move forward.

A. Establish a Regular Cadence.

The Program will begin its implementation in a time of unprecedented uncertainty in the electric sector. Tariffs imposed by the federal government threaten every aspect of clean energy production, raising costs for both the raw materials and finished components required for new clean energy resources.[11] In addition to tariffs, the federal government has taken numerous actions to slow down the country's clean energy transition in ways that will significantly impact California, including withdrawing all areas on the Outer Continental Shelf from offshore wind leasing and review,[12] and winding down the substantial financial incentives provided to clean

---

[11] *See* Exec. Order, Regulating Imports with a Reciprocal Tariff to Rectify Trade Practices that Contribute to Large and Persistent Annual United States Goods Trade Deficits (April 2, 2025), https://www.whitehouse.gov/presidential-actions/2025/04/regulating-imports-with-a-reciprocal-tariff-to-rectify-trade-practices-that-contribute-to-large-and-persistent-annual-united-states-goods-trade-deficits/; *Time*, "The Biggest Clean Energy Impacts from Trump's Tariffs," (April 8, 2025), https://time.com/7275714/trump-tariffs-biggest-clean-energy-impacts/; *Center for Strategic and International Studies*, "The Impacts of Tariffs on Clean Energy Technologies," (April 10, 2025), https://www.csis.org/analysis/impacts-tariffs-clean-energy-technologies.

[12] Exec. Order, Temporary Withdrawal of All Areas on the Outer Continental Shelf from Offshore Wind Leasing and Review of the Federal Government's Leasing and Permitting
(footnote continued on next page)

energy projects under the Inflation Reduction Act[13]. The State is undergoing significant changes that could drastically alter the viability of rooftop solar, potentially requiring even more reliance on utility-scale solar and wind to meet demand than previously considered.[14] All of these changes are occurring while demand increases, due primarily to electric vehicles being added to the grid and the decarbonization of buildings.[15]

In this context, a core aim of the Commission should be to ensure the Program is a bellwether of certainty for LSEs. That certainty can reduce risk which lowers interest rates and speculation that go along with it. EDF observes that procurement of new clean generating resources requires long lead times. Providing stability and predictability in the timing of procurement decisions sends the market a signal to expect expansion and additional investments

---

Practices for Wind Projects (Jan. 20, 2025), https://www.whitehouse.gov/presidentialactions/2025/01/temporary-withdrawal-of-all-areas-on-the-outer-continental-shelf-fromoffshore-wind-leasing-and-review-of-the-federal-governments-leasing-and-permitting-practicesfor-wind-projects/.

[13] *See* Yale Environment 360, "With 'Big Beautiful Bill,' U.S. to Reverse Course on Clean Energy," (July 7, 2025), https://e360.yale.edu/digest/big-beautiful-bill-renewable-energy-china; White House Executive Order, "Ending Market Distorting Subsidies for Unreliable, Foreign Controlled Energy Sources," (July 7, 2025), https://www.whitehouse.gov/presidential-actions/2025/07/ending-market-distorting-subsidies-for-unreliable-foreign%e2%80%91controlled-energy-sources/; Diani DiGangi, "Trump Seeks Tighter Restrictions on Wind and Solar with Executive Order," (July 9, 2025), https://www.utilitydive.com/news/trump-executive-order-obbba-wind-solar-48e-45y-tax-credits/752559/.

[14] *See, e.g.,* California Public Advocates' Office, "The Rooftop Solar Dilemma: Rising Electricity Rates and the Diminishing Value of Rooftop Solar," (December 16, 2024), https://www.publicadvocates.cpuc.ca.gov/press-room/reports-and-analyses/the-rooftop-solar-dilemma---nem-history-fact-sheet; *Utility Dive*, "California rooftop solar had a tough year following NEM 3.0. Can the industry bounce back?" (January 2, 2024), https://www.utilitydive.com/news/california-rooftop-solar-nem-30-outlook/702498/; Office of Assembly Member Lisa Calderon, "AB 942 Passes the Assembly Committee on Utilities and Energy," (May 2, 2025), https://a56.asmdc.org/press-releases/20250502-ab-942-passes-assembly-committee-utilities-and-energy.

[15] California Air Resources Board, 2022 Scoping Plan for Achieving Carbon Neutrality, at 202 (November 16, 2022), https://ww2.arb.ca.gov/sites/default/files/2022-11/2022-sp.pdf.

in clean resources. Such a signal will foster a robust market for clean resources that will enable California to meet its decarbonization goals in a cost-effective manner. A regular cadence for establishing GHG-reduction requirements and sufficient lead time for LSEs to plan to comply with those obligations is thus critical to the Program's success.

The Staff Proposal provides that the Commission will issue binding percentages for LSEs three years in advance of a compliance period. However, without more detail on the design of the CES, it is difficult to determine whether this provides sufficient lead time to LSEs. Failing to provide sufficient lead time to make procurement decisions risks exposing ratepayers to unnecessarily high costs. Shorter lead times provide sellers more leverage in negotiations, and ultimately do not protect ratepayer interests – it forces the load serving entities as the buyers into a "must take" situation. Near-term procurement also requires extremely tight timelines and thus is more likely to see delays, which could undermine the reliability portion of the Program. As we have seen too often in the IRP proceeding, developers often miss commercial operation dates due to the short lead time and delays typical to construction projects. Both delays and unfavorable bargaining power are significant cost drivers that can be avoided if the Program's GHG reduction component is designed in a manner that provides LSEs with sufficient certainty regarding their future obligations to facilitate long-term planning.

B. Guarantee New Steel in the Ground.

Another fundamental guiding principle for the design of the Program's GHG reduction component should be to ensure new capacity is actually added, i.e., incent new steel in the ground. Throughout the duration of the IRP proceeding, the Commission has consistently emphasized the substantial amount of new resources needed to achieve the State's decarbonization goals. For example, the 2021 Preferred System Plan (PSP) adopted in D.22-02-004 showed the need for approximately 35 GW of nameplate of new resources on the electric

system by 2030 to achieve the State's decarbonization and reliability goals.[16] The 2023 PSP adopted in D.24-02-047, which was derived from LSEs' IRP filings, showed the need for approximately 60 GW of nameplate of new resources to meet the State's goals.[17] The SB 100 Joint Agency Report determined that approximately 6 GW of new solar, wind, and battery storage resources must be built annually to meet the goal of decarbonization by 2045.[18] Similarly, EDF's modeling efforts (previously submitted into the record of this docket) found that at least 20-25 GW of new wind and solar resources, and 30 GW of new clean firm power is needed by 2045 to meet the State's reliability and decarbonization goals.[19] EDF's modeling found that 470 GW of new wind and solar resources would be necessary without sufficient clean firm power resources.

In order to satisfy the "C" of the RCPPP, the Program must be designed to develop sufficient new clean and zero-carbon resources such that the State can substantially reduce reliance on polluting fossil resources, starting with the most imprudent and inefficient polluting resources. For example, in response to the State's severe rolling blackouts in August 2020, the

---

[16] *See* D.23-02-040, 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, at 8 (February 28, 2023).

[17] D.24-02-047, Decision Adopting 2023 Preferred System Plan and Related Matters, and Addressing Two Petitions for Modification, at 67 (February 20, 2024).

[18] California Energy Commission, California Public Utilities Commission, California Air Resources Board, "2021 SB 100 Joint Agency Report Summary: Achieving 100% Clean Electricity in California, An Initial Assessment," at 11 (March 2021).

[19] Long, Jane C.S., Ejeong Baik, Jesse D. Jenkins, Clea Kolster, Kiran Chawla, Arne Olson, Armond Cohen, Michael Colvin, Sally M. Benson, Robert B. Jackson, David G. Victor, and Steven P. Hamburg, Clean Firm Power is the Key to California's Carbon-Free Energy Future, Issues in Science and Technology (March 24, 2021), https://issues.org/californiadecarbonizingpower-wind-solar-nuclear-gas/. This study is in the record of this proceeding. Reply Comments of Environmental Defense Fund on Mid-Term Reliability Analysis and Proposed Procurement, Attachment 1 (April 9, 2021).

Legislature created the Strategic Reliability Reserve to, in part, "provide[] funding to secure conventional generation [and] efficiency upgrades at existing natural gas plants."[20] Additionally, the State has repeatedly extended the life of numerous once-through-cooling plants due to the lack of adequate clean and zero-carbon resources with the same reliability attributes as those plants.[21] Similarly, the State has extended the life of the nuclear Diablo Canyon power plant at great cost to the State's ratepayers, in response to concerns about maintaining system reliability.[22] The Program should ensure the procurement of sufficient new clean and zero-carbon resources to obviate the need for the State to needlessly spend millions of dollars extending the lives of fossil and other inefficient, expensive resources.

The Staff Proposal would have LSEs demonstrate their compliance with their GHG-reduction requirements by retiring sufficient energy credits to match their share of need in megawatt hours. Relying on this compliance instrument, instead of an instrument with a more direct connection to new steel in the ground—like capacity contracts—raises the risk that the Clean Energy Standard will not incentivize the volume of new resource development needed to meet the State's system-wide goals. The Staff Proposal, however, does not incorporate *any* design features that would ensure the Clean Energy Standard furthers the foundational goal to ensure the development of substantial volumes of new resources (e.g., requiring a certain

---

[20] California Energy Commission, Strategic Reliability Reserve, https://www.energy.ca.gov/data-reports/california-energy-planning-library/reliability/strategic-reliability-reserve.

[21] State Water Resources Control Board, "Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling," (December 5, 2023), https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/docs/otc-policy-2023/otc-policy-2023.pdf.

[22] Noah Haggerty, "CPUC Approves $723 Million in Ratepayer Costs to Extend Life of Diablo Canyon Nuclear Plant," *Los Angeles Times* (Dec. 19, 2024), https://www.latimes.com/environment/story/2024-12-19/cpuc-approves-723-million-dollars-to-extend-life-of-nuclear-plant;

percentage of credits LSEs must retire within a compliance period to be from new vintaged resources located in California).

While it is *possible* that the design of the Program's reliability component will incent substantial new resource development, that is far from guaranteed. Once the design of the reliability component is largely determined, EDF recommends the Commission solicit stakeholder input on design features for the GHG reduction component that will ensure the Program facilitates the new resource development the State requires.

C. Incentivize Development of Long-Lead Time Resources.

Throughout the IRP Proceeding, EDF has consistently advocated for the Commission to prioritize the development of long-lead time resources, including clean firm power resources and offshore wind. EDF's Clean Firm Power Modeling demonstrated that an ambitious investment in clean firm power, with a capacity similar in magnitude to California's existing gas fleet—roughly 25-40 gigawatts—could eliminate the need for ten times that amount of solar and wind capacity, and thus preclude substantial rate increases. Offshore wind also has the potential to provide great reliability benefits and contain systemwide costs, as these resources typically generate power at times when on-shore wind and solar do not.

However, a significant tension exists between LSEs' individual incentive to procure resources like solar, that are relatively cheap on a per unit basis, and the *systemwide* need to procure clean firm power and other long-lead time resources, which are more expensive on a per unit cost basis but reduce overall electric portoflio costs. EDF has strongly advocated for the Commission to use its authority to bridge the gap between LSEs' individual incentive and the systemwide need.

EDF lauds the significant actions the Commission has taken thus far to promote the development of these resources, including specifically requiring the development of clean firm

power resources in the Mid-Term Reliability Decision[23], and authorizing the Department of Water Resources to exercise its centralized procurement authority to procure up to 7.6 GW of offshore wind, 1 GW of geothermal, 1 GW of multi-day long-duration energy storage, and 1 GW of long-duration energy storage with at least a 12-hour discharge period[24]. While these actions are a great start, more must be done to ensure these critical resources are developed in the volume necessary to contain systemwide costs and promote reliability.

The Staff Proposal, however, is largely silent on the extent to which the Program will specifically promote the development of additional long-lead time resources such as clean firm power and offshore wind. Besides discussing how centrally procured resources will be treated for the purpose of allocating individual need to LSEs, the Staff Proposal does not address the procurement of long-lead time resources like clean firm power and offshore wind. It thus appears that staff believes that the Program's reliability component and/or DWR's centralized procurement will ensure development of a sufficient volume of these resources.

EDF cautions against assuming that either the reliability component of the Program, or DWR's centralized procurement, will ensure sufficient development of long-lead time resources. The Staff Proposal contemplates the Program's reliability component relying on Marginal ELCC to value resources' reliability contributions. Marginal ELCC greatly favors resources, like clean firm power, that can deliver electricity at times of peak demand when the system would otherwise rely on gas plants. It is thus possible—but far from guaranteed—that the design of the reliability component will incentivize sufficient development of clean firm power and other long-

[23] D.21-06-035, Decision Requiring Procurement to Address Mid-Term Reliability (2023-2026), at 91 (June 30, 2021).

[24] D.24-08-064, Decision Determining Need for Centralized Procurement of Long Lead-Time Resources, at 86 (August 29, 2024).

lead time resources. Similarly, the development of the long-lead time resources DWR is currently authorized—but not required—to procure is far from certain.

EDF does not believe it is prudent to omit any design features from the Program's GHG reduction component aimed at incentivizing clean firm power resources on the hopes that the reliability component and DWR centralized procurement will provide sufficient incentive. Once the reliability component of the Program is substantially defined, the Commission should consider whether specific design features should be incorporated into the Program's GHG reduction component to facilitate the development of clean firm power resources. For example, under a Clean Energy Standard, it may make sense to require that a certain percentage of credits come from resources providing clean firm attributes. Or, the Clean Energy Standard could be designed to provide a credit multiplier for electricity generated by clean firm power (e.g., 3 ZECs/RECs per MWh), to properly value how clean firm power displaces the State's reliance on gas plants at times of peak demand.

D. Incorporate Local Procurement Requirements.

EDF has long advocated for the Commission to determine precisely where new clean energy resources are needed to facilitate the retirement of fossil gas plants, and order the procurement of those resources, beginning with disadvantaged communities and capacity-constrained areas. The Legislature has required the Commission to model the addition of non-emitting resources in local capacity areas and "transmission capacity expansions, [that] are expected to substantially reduce, no later than 2035, the need to rely on nonpreferred resources in local capacity areas."[25] To date, however, the Commission has not conducted any such localized planning, much less actually ordered LSEs to procure new resources in the specific areas where

[25] Pub. Util. Code § 454.57(e).

they are needed to substantially reduce reliance on fossil resources. Instead, the Commission's GHG reduction modeling continues to be done solely on a systemwide basis.

As EDF has articulated repeatedly in the IRP proceeding, the Commission has been developing a local area modeling tool that will function as an add-on to RESOLVE for over two years, which was supposed to be completed by Fall of 2023.[26] Commission staff indicated they finished developing the tool and scheduled a workshop in March 2025, which was subsequently cancelled due to "unresolved issues with the model."[27]

While EDF does not know the precise status of the local area modeling tool, Commission staff appear to be closing in on its development. The Program thus presents a great opportunity for the Commission to take the local gas plant retirement analysis staff ultimately produces and transform it into meaningful requirements. As the implementation of the Program is delayed and the local area modeling tool is refined, the Commission and stakeholders should consider

[26] Administrative Law Judge's Ruling Seeking Comment on Proposed 2023 Preferred System Plan and Transmission Planning Process Portfolios, at 39 (October 5, 2023); IRP Modeling Advisory Group (MAG) on Draft 2025 Inputs and Assumptions (I&A) for the 2024-2026 IRP Cycle, at 4 (February 27, 2025) ("February 2025 MAG") (https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/2024-2026-irp-cycle-events-and-materials/202502272025draftiamagqa.pdf); Comments of Environmental Defense Fund on the Administrative Law Judge's Ruling Seeking Comments on Busbar Mapping of Electricity Resource Portfolios for 2025-2026 Transmission Planning Process, at 6-8 (November 19, 2024); Comments of Environmental Defense Fund on the Administrative Law Judge's Ruling Seeking Comments on Electricity Resource Portfolios for 2025-2026 Transmission Planning Process, at 7-8 (September 30, 2024); Q&A Session for MAG Webinar – Busbar Mapping Results for the Proposed 2024-2025 TPP Portfolios, at 27 (December 8, 2023) (https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/2023-irp-cycle-events-and-materials/assumptions-for-the-2024-2025-tpp/busbar_webinar_12-08-23_qandas.pdf); Comments of Environmental Defense Fund on the Administrative Law Judge's Ruling Proposing the 2023 Preferred System Plan and Transmission Planning Process Portfolios, at 5-7 (November 13, 2023).

[27] E-mail from Brendan Burns to IRP Proceeding Service List (March 21, 2025).

whether local area modeling and procurement should be integrated into the Program or implemented through another track in the IRP proceeding.

EDF would support incorporating design features into the Program's GHG reduction component that are specifically aimed at incentivizing LSEs to contract with new clean energy resources identified as necessary to facilitate the retirement of gas plants in DACs and local capacity areas. For example, EDF would support requiring a certain percentage of credits an LSE must retire in a compliance period to be from contracts with such resources. Or, perhaps LSEs could be awarded a credit multiplier for contracting with resources that facilitate the retirement of gas plants in disadvantaged communities or local capacity-constrained area (e.g., 1 MWh of electricity from a new resource that facilitated the retirement of a gas plant counts generates 3+ RECs/ZECs). EDF also supports development of transmission resources as a viable alternative to retiring natural gas plants in local capacity-constrained areas.

None of this will be possible, however, until the Commission develops the capabilities needed to conduct the localized gas plant retirement analysis. EDF reiterates its request that the Commission expressly acknowledge that it currently lacks the capability to conduct granular analysis of gas plant reliance in local capacity areas and set a firm deadline by which Commission staff must finalize the development of its local area modeling tool. The need to finalize this local area modeling tool provides yet another reason to give staff and stakeholders more time to work out the design of the Program's GHG reduction component.

E. Address the Unprecedented Increase in Loads from Data Centers.

The Integrated Energy Policy Report demonstrates that electricity demand will increase substantially in the coming decades, particularly because of building decarbonization and

transportation electrification.[28] However, the state has not yet adequately grappled with the large potential electric demand increase from data centers, which could hinder the State's decarbonization efforts if not managed effectively.

In December 2024, the U.S. Department of Energy released a report prepared by the Lawrence Berkeley National Laboratory that estimated data center load growth has tripled over the past decade and is projected to double or triple by 2028.[29] In California, that increase will likely exceed the average, given the State is home to a disproportionate amount of the technology and artificial intelligence industry. California currently has more than 270 data centers; in the city of Santa Clara, data centers alone consume 60% of the city's electricity.[30] Pacific Gas & Electric's reported that the requests it received to connect data centers increased by more than 40% in 2025.[31]

Data centers are unique form of load. Demand created by electric vehicles and buildings, for example, varies greatly throughout the day; power usage from these sources is far from constant. Data centers, however, however are high load factor facilities, meaning their power

[28] California Energy Commission, "2023 Integrated Energy Policy Report Highlights," https://www.energy.ca.gov/sites/default/files/2024-05/2023_Integrated_Energy_Policy_Report_Highlights_ADA.pdf.

[29] Arman Shehabi, Sarah J. Smith, Alex Hubbard, Alex Newkirk, Nuoa Lei, Md Abu Bakar Siddik, Billie Holecek, Jonathan Koomey, Eric Masanet, and Dale Sartor, "2024 United States Data Center Energy Usage Report," *Energy Analysis and Environmental Impacts Division, Lawrence Berkeley National Laboratory*, at 5-7. (December 2024)

[30] Melody Petersen, "Power-hungry AI Data Centers are Raising Electric Bills and Blackout Risk," *Los Angeles Times* (August 12, 2024), https://www.latimes.com/environment/story/2024-08-12/california-data-centers-could-derail-clean-energy-goals;

[31] Laila Kearney, "Biggest California Utility Sees More than 40% Jump In Data Center Interest, Executive Says," *Reuters* (May 28, 2025), https://www.reuters.com/business/energy/biggest-california-utility-sees-more-than-40-jump-data-center-interest-executive-2025-05-27/.

usage is relatively constant and high.[32] The need for consistent power at all times of the day—including when solar and wind energy production are at their lowest—presents challenges for a grid that is increasingly reliant on intermittent resources. A data center has higher reliability requirements, since a loss of power event results in several days for normal operations to resume—a significantly longer time frame than almost all other major sources of electricity.

In May 2025, the California State Senate passed Senate Bill 57—the Ratepayer and Technological Innovation Protection Act—which is intended to protect ratepayers from the costs associated with data centers by requiring the Commission to establish a special tariff for data centers.[33] The Commission is yet to identify a specific docket where issues unique to data center demand can be addressed. EDF would support designing the Program's GHG reduction component to appropriately incent LSEs serving new data center loads to procure new resources that can match the load profile of the new data centers, particularly clean firm power. The special tariffs adopted per Senate Bill 57 should directly require data centers to pay for the procurement of sufficient clean firm resources to accommodate their loads.

F. Safeguard Against Adverse Effects of Unbundled Credits.

Under the Staff Proposal, compliance with the Clean Energy Standard would be demonstrated through the retirement of energy credits (RECs and ZECs). The Staff Proposal is silent on whether those credits would be unbundled, leaving the door open for the Clean Energy Standard's design to allow for LSEs to demonstrate compliance via unbundled energy credits.

---

[32] I. Riu, D. Smiley, S. Bessasparis, K. Patel, "Load Growth Is Here to Stay, but Are Data Centers?: Strategically Managing the Challenges and Opportunities of Load Growth," at 8, *Energy and Environmental Economics, Inc*. (July 2024), https://www.ethree.com/wp-content/uploads/2024/07/E3-White-Paper-2024-Load-Growth-Is-Here-to-Stay-but-Are-Data-Centers-2.pdf.

[33] Senate Bill 57 (Introduced 2025-2026).

Unbundled energy credits *may* be a useful accounting mechanism for LSE compliance with a Clean Energy Standard. However, unbundled energy credits are a complicated compliance instrument that must be carefully designed to ensure the Clean Energy Standard achieves its core goal of facilitating substantial GHG reductions. RECs, a type of unbundled energy credit, have historically been used as a compliance instrument in the RPS, providing significant insight into potential issues with usage of such credits as the Clean Energy Standard's compliance instrument.

1. Complex Reporting Mechanisms Required.

Relying on unbundled energy credits to assess LSE compliance requires complicated reporting and tracking of energy generation and credit transactions among market participants, as well as independent auditing to ensure the accuracy of self-reports of the sources and amounts of clean energy generation. This necessitates the existence and maintenance of a comprehensive and stable central platform for tracking all relevant generation, market transactions, and credit retirements, as well as determining compliance with specific obligations.

California's REC system relies on the Western Renewable Energy Generation Information System (WREGIS) to track RECs from the time of their creation until they are retired by an entity to meet RPS requirements. However, WREGIS relies on generators and other market participants to accurately report the number of RECs produced by eligible generation facilities and subsequently sold in the market. Without adequate tracking, it is possible for a market participants to misrepresent the amount of energy produced using REC-eligible facilities. This is harder to do when bundled RECs are involved, because the purchaser receives the energy along with the RECs and can ensure the amounts received match. Unbundled RECs do not include this safeguard. Sadly, there are even fewer safeguards against non-carbon non-renewable

resources. Ratepayer value is maximized when there is high confidence in these tracking protocols.

2. No Direct Guarantee of GHG Reductions.

Unbundled energy credits do not guarantee lower GHG emissions and improved environmental outcomes within a particular region. Because unbundled energy credits are detached from the underlying energy they represent, there is no guarantee that the energy represented by a credit is displacing GHG-emitting generation in the relevant geographic region. The Commission attempted to address this issue in the RPS context through D.10-03-021. With that decision, the Commission required that RECs could only count towards RPS requirements if the associated energy the credit represents enter the electric grid in the same region where it is used to meet those requirements. Despite this decision, it remains difficult to trace the relationship between the RECs and the energy they represent, complicating accounting and raising questions about whether the electricity was delivered and used, and under what circumstances.

3. Significant Risk of Resource Shuffling.

Buyers and/or sellers of RECs may engage in "resource shuffling," in which RECs for lower emitting resources are reported while the same amount of energy from higher GHG-emitting generation is delivered to the grid. Similarly, sellers in other states may sell RECs to California buyers, while increasing their own reliance on GHG-emitting resources beyond what they would have used in the absence of selling those RECs. These actions are specifically prohibited in California. However, due to the unbundled nature of RECs, it is difficult to verify the actual sources of unbundled RECs, and nearly impossible to ensure that unbundled RECs sold in California are not encouraging the use of GHG-emitting generation on the part of the sellers or utilities in other areas of the country.

4. No Direct Connection to New Steel in the Ground.

Using unbundled energy credits as a compliance instrument, instead of an instrument with a closer connection to new resource development—like capacity contracts—risks failing to incentivize sufficient new resource development. If the unbundled energy credits are not priced to reflect the cost of generating the underlying renewable energy, LSEs may choose to meet their requirements by buying unbundled RECs rather than building new generation. As a result, RECs may not achieve their purpose of promoting the development and procurement of renewable energy and energy that reduces GHGs. Participation of sellers in multiple geographic regions, any inconsistencies in the definition of a REC, and failure to validate the delivery and use of the underlying energy, increase these risks.

5. More Work is Needed to Safeguard Against the Adverse Impacts of Unbundled Energy Credits.

A combination of these and other inherent issues with the use of unbundled energy credits make them a work-intensive and imperfect tool for motivating the development and implementation of new renewable and non-GHG-emitting generation. For these reasons, EDF strongly cautions against creation of a new system that relies on unbundled credits in the absence of a very clear definition of what sources do and do not qualify for the new credit type. If the Commission chooses to create a new credit system, EDF strongly recommends engaging in a stakeholder process to develop definitions and rules of eligible resources in order to ensure that the new credits are appropriate and meaningful. Safeguards must ensure that unbundled energy credit accounting accurately captures eligible generation (and nothing else), and provides incentives for the development of new renewable or non-GHG emitting energy. Otherwise, the Clean Energy Standard system may not yield the intended environmental benefits.

The Proposal states that "unlike a mass-based approach, [a CES system] leverages the existing RPS compliance framework, uses standardized tradeable compliance instruments, is relatively easier to administer, more precise on a forward basis, more adaptable to diverse operational scenarios, and minimizes the risk of inconsistency and duplication with existing mass-based GHG regulations under the California Air Resources Board's… cap-and-trade program."[34] Most of these positive attributes claimed in the proposal are not supported by analysis. The proposal also does not articulate the details of the proposed credits.

For example, the proposal does not offer a specific definition or eligibility criteria for a ZEC, beyond that it would include all RPS-eligible resources and something more. The Staff Proposal does not identify an obvious system or entity to certify whether specific resources that are not REC eligible would still be eligible for ZECs. There is no obvious proposal for independent auditing to ensure accuracy of reporting. The Staff Proposal does not describe a tracking or accounting system beyond stating it would be based in WREGIS. Lastly, the Staff Proposal includes a blanket penalty for noncompliance of $50/MWh, without any supporting analysis to ensure that penalty level will incent the substantial clean procurement needed to achieve the State's decarbonization goals.

EDF objects to the use of unbundled energy credits for the Program's GHG reduction component. If the Commission chooses to ultimately adopt the Clean Energy Standard and allow LSEs to demonstrate compliance by relying on unbundled credits, significant more work must be done to ensure the use of unbundled credits does not jeopardize the State's decarbonization goals. The ambiguity in the Staff Proposal regarding the use of unbundled v. bundled energy

[34] Staff report at 42.

credits is a key reason why both staff and stakeholders need more time to work out the design of the Program's GHG Reduction Standard.

G. Integrate the Impending Western Regional Energy Market.

Absent from the Staff Proposal is any discussion of the impending Western regional electricity market, emerging out of the West-Wide Governance Pathways Initiative (Pathways Initiative).[35] The Pathways Initiative was launched by a coalition of utility regulators from numerous western states with the aim of establishing an independently-governed organization to assume control over the CAISO-run Western Energy Imbalance Market and the Extended Day Ahead Market and provide a full range of regional transmission operator services.[36] In February 2025, State Senator Josh Becker introduced Senate Bill 540, which would authorize CAISO and the State's LSEs to participate in the Western regional electricity market governed by a new independent organization.[37] While this legislation is not yet finalized at the top of this submittal, EDF is concerned that there is insufficient linkage between how the RCPPP and the new western market could interact. The market opens up a larger pool of potential resources and new buyers of existing resources.

---

[35] *See, e.g.*, Western Interstate Energy Board, "West-Wide Governance Pathways Initiative," https://www.westernenergyboard.org/wwgpi/; California Independent System Operation, "Initiative: West-Wide Governance Pathways – Step 1," https://stakeholdercenter.caiso.com/StakeholderInitiatives/west-wide-governance-pathways-step-1; Michael Colvin, "California is on the Path to A Regional Electricity Market," *Environmental Defense Fund* (February 24, 2025), https://blogs.edf.org/climate411/2025/02/24/california-is-on-the-path-to-a-regional-electricity-market/; Mark Specht, "Western Energy markets Could Soon Be Governed Differently. Here's Why that Matters," *Union of Concerned Scientists*, (November 22, 2024), https://blog.ucs.org/mark-specht/western-energy-markets-could-soon-be-governed-differently-heres-why-that-matters/.

[36]

[37] Senate Bill 540 (Becker, introduced 2025-2026).

More work must be done to ensure that the Program adequately integrates the forthcoming Western regional electricity market. It is critical to determine how additional procurement secured through the regional electricity market will be accounted for in the Program (e.g., will this procurement be assumed in the need determination, or will it be treated no differently than typical resource procurement). Significant more collaboration must be done to ensure the Program can accommodate, and maximize the benefits of, the imminent Western regional electricity market.

H. Prevent Resource Shuffling.

To effectively design the Program's GHG reduction component, the Commission must balance two competing considerations. On one hand, expanding the geographic scope of the sources of California's carbon-free power is an essential part of the transition to 100% clean power. On the other, the Legislature has expressly provided that achieving the State's decarbonization goals "shall not increase carbon emissions elsewhere in the western grid and shall not allow resource shuffling."[38] Balancing these two considerations will require careful and intentional planning that must precede the implementation of the Program.

Under the Staff Proposal, compliance with the Clean Energy Standard would potentially be achieved through the retirement of unbundled energy credits, allowing LSEs great flexibility to comply with their obligations by relying on out-of-state resources. However, the Staff proposal does not acknowledge the possibility that an LSE contracting with zero-emission resources from another state may cause that state to rely on fossil-fueled generation, when it otherwise would not have. Nor does the Staff Proposal provide any design features that would mitigate the risk of increasing GHG emissions in the western grid.

[38] Pub. Util. Code § 454.53(a).

Designing the Program to avoid increasing GHG emissions in the western grid is particularly critical because the State is moving closer to establishing a Western regional electricity market, as discussed above. A regional electricity market would bring great potential for the State to achieve its decarbonization and reliability goals while limiting ratepayer costs, but would also necessitate careful planning to avoid increases in regional GHG emissions. As is, the Staff Proposal lacks any design features to ensure the Clean Energy Standard would comply with the Legislature's prohibition on resource shuffling. More work by staff and stakeholders is necessary to guarantee the Program's implementation will not inadvertently cause an increase in emissions across the Western region.

I. Define Eligible Resources to Reflect State Policy and Science.

Crafting resource eligibility requirements that provide sufficient certainty to developers and LSEs, while limiting which resources generate ZECs to those that are truly necessary to achieving the State's decarbonization goals, is a crucial element of the Program's GHG reduction component. The Staff Proposal briefly addresses resource eligibility requirements, indicating the scope of eligible resources will include RPS-eligible resources in addition to those non-RPS-eligible resources identified in Senate Bill 100 (i.e., nuclear and hydropower). However, just because the Legislature has permitted the Commission to widen the scope of eligible resources does not necessarily mean it is prudent to allow all identified resources to generate ZECs. For the last twenty years, state policy has been to not incent new large hydro or nuclear facilities, but the open ended nature of a ZEC could undo that balance.

EDF strongly opposes authorizing LSEs to contract with Diablo Canyon to satisfy their GHG reduction obligations. State policy is to retire Diablo Canyon as soon as feasible and replace it with new clean firm power resources that provide the same reliability attributes and

ensure Diablo Canyon's retirement will not cause an increase in GHGs.[39] Electricity generated by Diablo Canyon thus should not generate ZECs under the Program.

EDF would support crafting the Clean Energy Standard's resource eligibility requirements to either explicitly exclude Diablo Canyon, or drafting them in such a way that is facially neutral but necessarily excludes Diablo Canyon (e.g., only electricity from new or new vintaged nuclear resources generate ZECs). The Commission has experience with the latter; the Mid-Term Reliability Decision effectively carved-out a procurement obligation for 1 GW of geothermal resources by establishing requirements that were technology-neutral, but could only be satisfied by geothermal (i.e., 80% capacity factor, no on-site emissions, RPS-eligible).[40] The Commission could craft similar eligibility requirements for ZECs.

EDF also cautions against allowing electricity generated by hydropower to generate ZECs, without more stakeholder input on this issue. Staff scientists at EDF published a report in the journal *Environmental Science & Technology* that demonstrated some hydropower facilities emit GHGs on a volume similar to fossil resources like natural gas power plants.[41] Serious consideration must be given to how to craft eligibility requirements to ensure that LSEs are not relying on GHG-emitting resources to satisfy their GHG reduction obligations. EDF is very concerned that the lack of clear definitions could claim environmental credit on paper that would not be realized in reality.

---

[39] D.21-06-035, Decision Requiring Procurement to Address Mid-Term Reliability (2023-2026), at 44-45 (June 30, 2021).

[40] D.21-06-035, Decision Requiring Procurement to Address Mid-Term Reliability (2023-2026), at 91 (June 30, 2021).

[41] Ilissa B. Ocko and Steven P. Hamburg, "Climate Impacts of Hydropower: Enormous Differences Among Facilities and Over Time," *Environ. Sci. Technol.* (November 2019), https://doi.org/10.1021/acs.est.9b05083.

EDF notes that the Staff Proposal is largely silent on demand response and distributed energy resources, both of which are critical to the State's decarbonization efforts. The only question in the proposal that focuses specifically demand response solicits comment on whether "Demand Response should count towards RCPPP compliance? If so, should it be included in Option I, Option II, or both?"[42] This question fails to capture the variety of demand response and other demand-side resources, and overlooks important differences in the specific rules of these programs, including their use of different participant eligibility criteria, incentive structures, and event triggers. EDF strongly recommends that the Commission further engage with stakeholders to identify the variety of demand response programs and demand-side resources that are currently available, to develop specific eligibility criteria for determining the circumstances under which these programs should count towards RCPPP compliance, and in particular whether and how demand response may be tracked and quantified in a meaningful way for RCPPP purposes.

Developing a workable standard to determine resource eligibility in the RPS Proceeding took years, ultimately culminating in the detailed Guidebook that is periodically updated.[43] EDF does not believe it is realistic to develop resource eligibility guidelines for the Program on the accelerated timeline delineated in the Staff Proposal, particularly given the other major gaps in the Staff Proposal's design of the Clean Energy Standard. Significant more staff and stakeholder input must be considered before the Commission can adopt effective, detailed resource eligibility requirements.

---

[42] Staff Proposal at 52.

[43] *See* California Energy Commission, "Commission Guidebook: Renewables Portfolio Standard Eligibility," (January 2017), available at https://www.energy.ca.gov/programs-and-topics/programs/renewables-portfolio-standard.

J. Require Long-Term Contracting.

Another critical piece to resolve before Program implementation is the issue of long-term contracting requirements. The Staff Proposal does not include any long-term contracting requirements for either the reliability or GHG-reduction component, and instead appears to rely on the RPS' existing long-term contract requirements. Long-term contracts are needed to provide developers the certainty necessary to access capital markets, obtain financing, and ultimately get projects built. Long-term contracts are particularly critical if the Program's GHG reduction component relies on unbundled energy credits to demonstrate compliance, since there is a very tenuous connection between unbundled credits and new steel in the ground.

EDF understands that many parties intend to advocate for the incorporation of long-term contracting requirements into the reliability component of the Program. If the reliability component were to incorporate such long-term requirements, it may obviate the need for such requirements in the GHG reduction component. EDF reiterates that it is crucial to first substantially finalize the design of the Program's reliability component before the Program's GHG reduction component can be effectively designed.

IV. Responses to Specific Questions

A. Reliability Options

1. Which Reliability Option (I.E., Option I or Option II) Should the CPUC Adopt? Please Explain the Justification for the Recommended Option in Detail.

EDF does not express a preference between the two Options presented in the Staff Proposal. Nor does EDF express a preference for the use of either Slice-of-Day or Marginal ELCC as the resource accounting metric. However, EDF reiterates its belief that the Program's reliability component and GHG reduction component are interrelated and should be intentionally designed to complement one another. Once the Commission adopts, or substantially adopts, the

Program's reliability component, EDF recommends the Commission move forward with a stakeholder process to develop the GHG reduction component in a manner that complements the adopted reliability requirements.

B. Alternate Timelines for Reliability Procurement

7. Should Compliance Filings Occur Once Or Twice A Year?

EDF does not believe it is necessary for LSEs to submit a non-binding compliance filing. LSEs are subject to extensive filing requirements across distinct proceedings and programs, including RA, IRP, and RPS. The Program should minimize, to the greatest extent practical, LSEs' additional procedural requirements. A single, binding compliance filing submitted annually is sufficient for LSEs to demonstrate their efforts towards complying with the Program's requirements.

C. Buffer Percentage/CCR Percentage

13. How Much More Reliable Should the System Be Compared to the 1-Day-in-10-Year LOLE? Is a buffer of 2.5% a Reasonable Value? If Not, What is an Appropriate Percentage Value for the Buffer? / 14. How should the Affordability Impact of the Buffer Be Weighed Against its Reliability Benefit? / 17. At What Percentage Should the CCR Be Set?

The reliability component of the Staff Proposal includes two distinct buffers that would increase the volume of required procurement beyond the "initial need determination." Staff recommends adding a 2.5% buffer to its initial system-level reliability procurement need determination, before need is allocated to individual LSEs.[44] And, once procurement need is allocated to individual LSEs, staff proposes a separate "Collective Capacity Reserve" of somewhere between 1.5% to 3% to be centrally procured by the State's investor-owned utilities,

[44] Staff Proposal, at 18.

with costs allocated to all LSEs pursuant to the Cost Allocation Mechanism.[45] EDF does not support either proposed buffer in light of the State's affordability crisis and the Commission's consistent adoption of more conservative planning standards in recent years.

The Staff Proposal expects the Program's reliability need determinations to "be set using forecasted plus a planning reserve margin that ensures a 0.1 LOLE."[46] In the Mid-Term Reliability Decision, the Commission chose a Planning Reserve Margin of 20.7%, which the Commission indicated was "a reasonable proxy" for anticipated future changes to "LOLE standards."[47] Need determinations under the Program are likely to be as conservative as that used in the Mid-Term Reliability Decision, which increased the Planning Reserve Margin from the typical 15%-17%, to 20.7%. Commission staff has not provided support for its apparent assumption that these conservative planning standards will not ensure sufficient procurement.

The Staff Proposal's inclusion of two buffers is unwarranted for the additional reason that the State has a set of programs referred to as the Strategic Reliability Reserve (SRR), which the CEC describes as "an insurance policy when the power grid is strained during extreme events when demand is high."[48] CEC's SRR programs consist of the Distributed Electricity Backup Assets program and the Demand Side Grid Support (DSGS) program. The DSGS in particular provides the potential for significant load reduction during grid emergencies. Through this program, the CEC "offer[s] incentives to electric customers that provide load reduction and

[45] Staff Proposal, at 20.

[46] Staff Proposal, at 18.

[47] D.21-06-035, Decision Requiring Procurement to Address Mid-Term Reliability (2023-2026), at 6-12 (June 30, 2021).

[48] CEC News Release, "California's Demand Side Grid Support Program Grows to 500 MW of Capacity." https://www.energy.ca.gov/news/2024-10/californias-demand-side-grid-support-program-grows-500-megawatts-capacity.

backup generation to support the state's electrical grid during extreme events, reducing the risk of blackouts."[49] Much of the reliability support provided through DSGS is incremental to existing Resource Adequacy requirements and the 20.7% planning reserve margin, and the program prioritizes demand response and efficiency measures, as well as clean energy. For example, the current DSGS Guidelines provide that participants in program's Incentive Option 2 will receive "incentive payments… based on demonstrated capacity in excess of resource adequacy (RA) capacity commitments."[50] The Staff Proposal fails to explain why two additional buffers are necessary to ensure system reliability, in light of the SRR and the Commission's recent adoption of more conservative planning standards.

EDF suspects that the proposed buffers reflect staff concerns regarding under-procurement in light of the increasing number of LSEs—particularly CCAs—serving load in the State. However, it should be the LSEs, not the State's ratepayers, who bear the risk of non-compliance and under-procurement. The administrative penalty and decertification process are the vehicles for dealing with non-complying CCAs. A blanket increase in ratepayer costs is not justified at this time, particularly given the Program's commitment to avoid exacerbating the State's severe affordability crisis.

D. GHG Reduction Questions

2. Should the CPUC Adopt the Clean Energy Standard and Create Zero-Emissions Credit (ZEC) Instruments as Proposed by Staff With or Without Modifications?

[49] California Energy Commission Web site at https://www.energy.ca.gov/programs-and-topics/programs/demand-side-grid-support-program, retrieved June 29, 2025.

[50] Demand Side Grid Support Program Guidelines, Fourth Edition, at 18. https://efiling.energy.ca.gov/GetDocument.aspx?tn=262658

EDF strongly advocates against the adoption of the Clean Energy Standard without significant modifications to the design in the Staff Proposal. As discussed above, EDF believes the Staff Proposal lacks the rigorous detail needed to ensure the Program sets the State on the path towards achieving its decarbonization goals, guarantees substantial new clean and zero-carbon resource development, and prevents an increase in GHG emissions in the Western region. EDF recommends the Commission engage in a stakeholder process to work out the design of the Program's GHG reduction component after the Commission resolves the core issues at the heart of the Program's reliability component.

4. Which Zero-Carbon Resources Should be Eligible for the CES?

EDF cautions against broadening the scope of the Program's resource eligibility requirements to include resources whose inclusion would violate public policy and threaten the State's decarbonization goals. The Staff Proposal briefly addresses resource eligibility requirements, indicating the scope of eligible resources will include RPS-eligible resources in addition to those non-RPS-eligible resources identified in Senate Bill 100 (i.e., nuclear and hydropower).[51] While SB 100 provides that the Commission "*can* include all GHG-free resources,"[52] SB 100 does not obligate the Commission to widen the scope of the Program to encompass all potentially GHG-free resources.

EDF opposes authorizing LSEs to contract with Diablo Canyon to satisfy their GHG reduction obligations, given the state policy to retire Diablo Canyon as soon as feasible and replace it with resources that provide the same reliability and GHG attributes.[53] EDF also cautions against allowing electricity generated by hydropower to generate ZECs, given the

[51] Staff Proposal, at 42.

[52] Staff Proposal, at 42.

[53] D.21-06-035, at 44-45.

evidence that some hydropower facilities emit GHGs in a volume similar to fossil resources like gas plants. Lastly, EDF would support incorporating demand response and distributed energy resources within the scope of the Program's GHG reduction component, if these resources' contribution to systemwide decarbonization and reliability are not accurately reflected in the Program's reliability component.

EDF reiterates its belief that it is not feasible to develop effective resource eligibility guidelines for the Program on the timeline delineated in the Staff Proposal. In the RPS Proceeding, developing a workable standard to determine resource eligibility took years, ultimately culminating in the detailed Guidebook that is periodically updated.[54] Significant more staff and stakeholder input must be considered before the Commission can adopt effective, detailed resource eligibility requirements.

6. Should the CPUC further develop a GHG reduction approach through a certain forum (*e.g.*, workshops)? How could guardrails be implemented so that LSEs continue to procure toward future GHG targets while gathering more stakeholder input on an effective and efficient GHG framework?

EDF strongly recommends that the Commission engage in a stakeholder process to work out the design of the Program's GHG reduction component, once the Commission adopts—or substantially adopts—the Program's reliability component. Given the lack of detail in the Staff Report and staff's openness to considering alternatives to the Clean Energy Standard, EDF suspects staff is not close to finalizing the Program's GHG reduction component. EDF cautions against the Commission adopting the Clean Energy Standard as proposed, without significant more work to ensure the Clean Energy Standard will move the State towards achieving its

[54] *See* California Energy Commission, "Commission Guidebook: Renewables Portfolio Standard Eligibility," (January 2017), available at https://www.energy.ca.gov/programs-and-topics/programs/renewables-portfolio-standard.

decarbonization goals, ensure the development of substantial new clean and zero-carbon resources, and prevent resource shuffling.

EDF is concerned that the adoption of the Clean Energy Standard, as is, will lock the State into decades of suboptimal outcomes that jeopardize the State's aggressive decarbonization goals. EDF reiterates that it would support an interim procurement order to bridge the gap in new clean resource development between the conclusion of LSEs' Mid-Term Reliability obligations and the implementation of the Program. EDF recognizes both the substantial amount of staff time that goes into procurement orders, and the fact that the Program was specifically intended to forego the need for such ad hoc procurement orders. However, EDF strongly believes that the adoption of an unproductive and ineffectual Program is a much worse outcome than the issuance of an interim procurement order to guarantee new resource development while staff and stakeholders finalize the Program's design.

V. Conclusion

EDF thanks the Commission for the opportunity to comment on the Staff Proposal.

DATED: July 15, 2025

By: */s/ Orran Balagopalan*

Yochanan Zakai[*]
Orran Balagopalan
SHUTE, MIHALY & WEINBERGER LLP
396 Hayes Street
San Francisco, California 94102
(415) 552-7272
yzakai@smwlaw.com
obalagopalan@smwlaw.com

Attorneys for Environmental Defense Fund

[*] Mr. Zakai is a member of the Oregon State Bar; he is not a member of the State Bar of California.