California Public Utilities Commission

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Attachment A: Staff Proposal: Reliable and Clean Power Procurement Program

ENERGY DIVISION

R.20-05-003

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This Staff Proposal is a joint effort from the CPUC's Integrated Resource Planning and Electric Market Design sections in the Energy Division's Electric Planning and Market Design Branch. The authors appreciate the efforts of all who have contributed to the development of this proposal to programmatically procure electric resources to meet California's reliability and clean energy goals at least cost.

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1. Executive Summary

Staff of the California Public Utilities Commission (CPUC) is pleased to propose options for a Reliable and Clean Power Procurement Program (RCPPP) applicable to all load-serving entities (LSEs) in the CPUC's jurisdiction (*i.e.,* investor-owned utilities, community choice aggregators, and energy service providers). The goal of RCPPP is to give LSEs a more predictable regulatory framework to procure their share of the resources needed to meet electric system reliability and greenhouse gas (GHG) emission reduction goals at least cost.

Notably, RCPPP could support affordability for ratepayers in both the reliability and GHG reduction portions of the framework. By giving LSEs more advanced notice of their specific share of future reliability and GHG reduction procurement obligations on an ongoing basis, RCPPP provides LSEs extensive and predictable lead time to enter into procurement contracts at reasonable cost. Further, contracting further out in time may provide greater market predictability and opportunities for increased supply, which in turn would reduce costs (*i.e.,* a supply curve shifting right leads to a reduction in market equilibrium costs).

Currently, there is no formal, programmatic approach for how procurement may be ordered or authorized. Instead, the CPUC has maintained reliability and reduced GHG emissions for the past two decades through a variety of long-term procurement and Integrated Resource Planning (IRP) decisions. In the absence of a formal RCPPP as proposed herein, the CPUC can order, and has ordered in the past, procurement to be conducted by all LSEs on an "order-by-order" basis. For example, the CPUC has ordered procurement via Decision (D.) 19-11-016, D.21-06-035, and D.23-02-040, which have resulted in about 25,000 MW of new resources coming online in the past five years. This approach complements the CPUC's Resource Adequacy (RA) and Renewables Portfolio Standard (RPS) programs.

However, despite its successes, the "order-by-order" approach to procurement also has several limitations, including that it can be somewhat unpredictable for LSEs, does not fully address load migration, and does not facilitate proactive LSE self-provision of required resource attributes or expressly address existing resource retention. Further, the IRP process has shown that significantly more procurement on an ongoing basis is needed by 2030 and beyond to meet California's clean energy goals in Senate Bill (SB) 100 (De León, 2018) and the CPUC's electric sector GHG target.

Accordingly, RCPPP would be an evolution from the current approach to procurement towards a more programmatic approach. As detailed in this Staff Proposal, the goals of any approach to RCPPP are to build on prior procurement experience and to establish a clear and predictable set of long-term procurement requirements that will allow LSEs to better plan and implement their procurement of reliable and clean electric resources. Further, RCPPP would be consistent with foreseeable statewide planning needs, and it would yield benefits such as increased market certainty and administrative efficiency.

RCPPP would be consistent with statutory requirements, including Assembly Bill (AB) 1373 (Garcia, 2023), which amended Public Utilities (PU) Code § 454.51(a) to require the CPUC to use its IRP resource portfolio to "establish integrated resource planning-based procurement requirements that rely on zero-carbon emitting resources to the maximum extent reasonable" and support achievement of the state's 100 percent clean energy

and GHG goals. AB 1373 also amended PU Code § 454.52(c) to state that the CPUC "may order the procurement of resources with specific attributes by load-serving entities as a result of the integrated resource planning process and shall enforce any resource procurement requirements on a nondiscriminatory basis."

The options in this paper are designed to satisfy the five principles of effectiveness, affordability, fairness, feasibility, and predictability, as defined in Figure 1.

Figure 1. Program Design Principles

Effectiveness

- Program effectively supports the maintenance of exisiting resources and additions of new clean resources.

Affordability

- Program establishes predictable requirements in sufficient time for LSEs to procure resource options that are least cost by benefit from competition.

Fairness

- Program requirements are fairly distributed across LSEs and do not unfairly discriminate across technology types or projects.

Feasibility

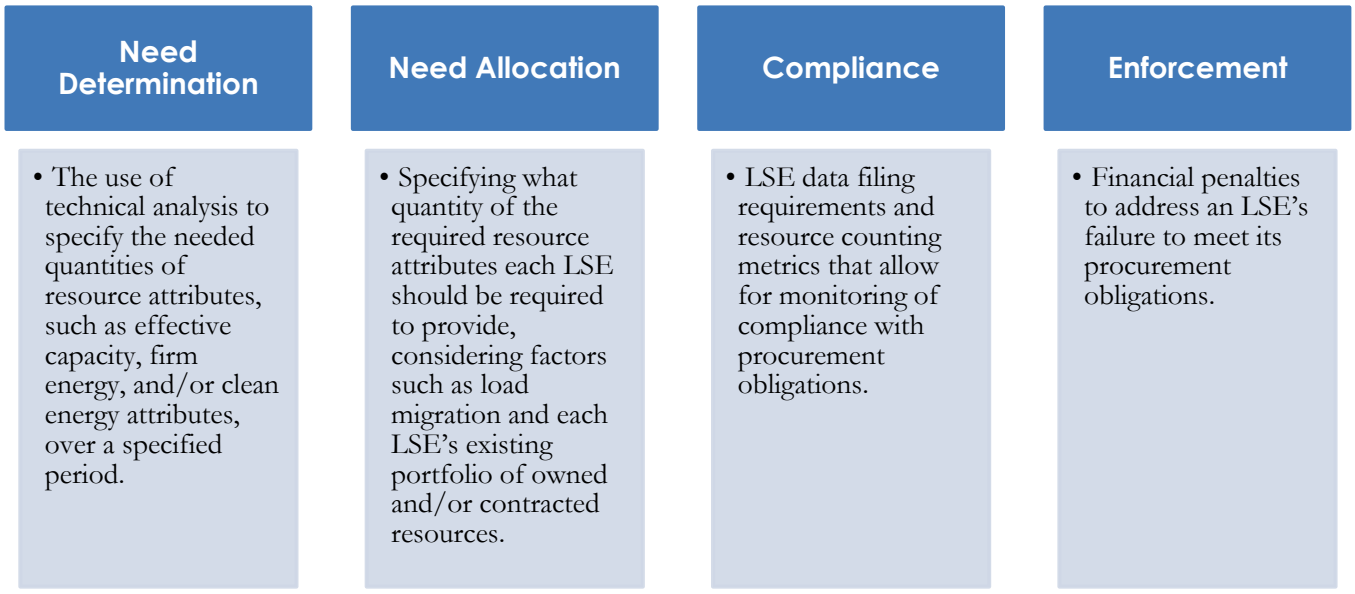
- Program can feasibly be adminstered for compliance and enforcement in an efficient manner.

Predictability

- Program supports greater predictability around generator investment decisions.

Further, the options in this paper focus on the two central pillars of RCPPP—reliability and GHG emissions reductions at least cost—which are each structured around the key design elements of need determination, need allocation, compliance, and enforcement, as defined in Figure 2.

Figure 2. Key Design Elements of RCPPP



To procure resources to meet system reliability needs in RCPPP, Staff proposes two options for stakeholder consideration, as summarized in Table 1 and Table 2 and explained further in Section 3.1.

Table 1. Summary of RCPPP Reliability Option I

Option I: Reliability Procurement for New and Existing Resources				
Scope	**Need Determination**	**Need Allocation**	**Compliance**	**Enforcement**
New and existing resources.	- Termed the "Reliability Procurement Need" (RPN). - Based on the accredited capacity to meet a loss of load expectation (LOLE) of one-day-in-ten-years (*i.e.,* 0.1 days per year) using marginal effective load carrying capability (ELCC). - Includes a 2.5% buffer.	- Termed the "Reliability Procurement Requirement" (RPR). - Divides the total need determination into pro-rata LSE-specific allocations, uses hourly LSE-specific load forecasts, and allocates the need based on each LSE's pro-rata share of load during critical hours. - Not delineated between new vs. existing resources. - Updated annually; binding for years T+2 through T+4, and indicative information will be provided for years T+5 through T+9. - Includes a 1.5% to 3% Collective Capacity Reserve to be procured by IOUs and paid for collectively.	- Filings occur twice a year, in December and June. The June filing will be the official milestone for measuring compliance. - LSEs will need to show an offtake contract showing 100% of procurement for T+2, and offtake contracts showing 75% and 50% of procurement for T+3 and T+4, respectively. - For T+0 and T+1, there will be no RCPPP compliance obligations, since the complementary obligations of the month-ahead and year-ahead RA program will ensure sufficient resource contracting. - Includes linkage with existing RA program (*i.e.,* 100% month-ahead for T+0 and 90% year-ahead for T+1).	- Imposes financial penalties (based on the net cost of new entry) for failing to meet procurement requirements. - Penalties increase for greater levels of non-compliance. - December and June filings will be subject to an Administrative Penalty related to accuracy and timeliness, but June filings will be subject to Deficiency Penalties for online and contracting sufficiency, as well.

Table 2. Summary of RCPPP Reliability Option II

Option II: Reliability Procurement for New Resources Only (+ Expanded Multi-Year RA)				
Scope	**Need Determination**	**Need Allocation**	**Compliance**	**Enforcement**
New resources only.	- Termed the "Reliability Procurement Need" (RPN). - Based on marginal ELCC, like Option I, but incorporates a rolling 10-year "new" resource vintage definition. - Focuses on new vintage resources since the RA program covers the showing of existing and new resources for T+0 (*i.e.,* current year RA), as well as for T+1 (*i.e.,* year ahead RA) through T+3 (through a proposed multi-year RA expansion). - Includes a 2.5% buffer.	- Termed the "Reliability Procurement Requirement" (RPR). - Like Option I, uses hourly LSE-specific load forecasts and allocates the need based on each LSE's pro-rata share of load during critical hours. - Represents an LSE's proportional share of *new vintage resource* need (*i.e.,* resources brought online within a 10-year rolling timeline). - Updated annually; binding for years T+0 through T+4, and indicative information will be given for years T+5 through T+9. - Includes a 1.5% to 3% Collective Capacity Reserve to be procured by IOUs and paid for collectively	- Filings for compliance occur twice a year, in December and June. The June filing will be the official milestone for measuring compliance. - For T+0 through T+4, LSEs must show online resources or an offtake contract for a certain percentage of their required procurement for *new* (or recently online) resources. - Includes linkage with an expanded RA program through T+3.	- Like Option I, imposes financial penalties (based on the net cost of new entry) for failing to meet procurement requirements. - Penalties increase for greater levels of non-compliance. - December and June filings will be subject to an Administrative Penalty related to accuracy and timeliness, but June filings will be subject to Deficiency Penalties for online and contracting sufficiency, as well. - Deficiencies in new IRP procurement will be penalized as defined in this document. - Multi-year RA deficiencies will be penalized based on existing RA penalty structure.

To procure resources to meet California's GHG reduction goals in RCPPP, Staff proposes a Clean Energy Standard (CES), as summarized in Table 3 and explained further in Section 3.2, for party comment. Staff also asks for comments on alternatives to this approach, including continuing existing IRP processes.

Table 3. Summary of RCPPP Clean Energy Standard

Greenhouse Gas Reduction: Clean Energy Standard				
Scope	**Need Determination**	**Need Allocation**	**Compliance**	**Enforcement**
New and existing RPS or zero-carbon resources.	- Defined in the form of a minimum annual Clean Energy Standard (CES) percentage that is consistent to meet the electric sector GHG target. - CES percentage would be based on calculating annual CES-eligible generation relative to CAISO annual retail sales from a GHG-compliant IRP system planning portfolio.	- An LSE's allocated need is its retail sales forecast multiplied by the CES percentage.	- Measured in three-year compliance periods, aligned with the RPS program. - Based on a backwards-looking review of renewable energy credits (RECs) and zero-emission credits (ZECs) by comparing the megawatt-hours (MWh) of credits retired during a compliance period to the total LSE compliance period MWh requirement.	- Imposes a financial penalty of $50 per MWh for each MWh of deficiency within the compliance period.

While RCPPP would be refined and updated over time, the proposals in this paper are designed to programmatically procure electric resources effectively, affordably, fairly, feasibly, and predictably, with a focus on achieving system-wide reliability and greenhouse gas reduction goals at least cost through key design elements of need determination, need allocation, compliance, and enforcement. Stakeholders are encouraged to provide comments on this Staff Proposal, including in response to the questions posed in Section 5.

2. Introduction

2.1 Statutory Context

Several statutes in California's Public Utilities (PU) Code serve as the foundation of RCPPP and its focus on programmatically achieving reliability and GHG reductions, primarily, but not limited to, PU Code Sections 380, 454.5, and 454.51-53. These statutes require the CPUC to oversee each load serving entity's obligation to reliably service their load and achieve GHG reduction goals though the Resource Adequacy program, procurement plans, and other mechanisms.

PU Code § 380 is the foundational statute for the CPUC's Resource Adequacy (RA) program, as it establishes the statutory requirements for RA to "ensure the reliability of electrical service in California[.]" Per statute, the RA program and related requirements apply to each "load-serving entity" (LSE), whether an electrical corporation (*i.e.,* investor-owned utilities, or IOUs), electric service provider (ESP), or community choice aggregator (CCA). PU Code § 380(b)(1) requires the CPUC to establish resource adequacy requirements that facilitate the development of new capacity and the retention of existing capacity in order to ensure reliability of electrical service and to advance, to the extent possible, the state's goals for clean energy, reducing air pollution, and reducing emissions of greenhouse gases.

In 2024, AB 2368 (Petrie-Norris) established that the CPUC must ensure that the RA program "can reasonably maintain a standard measure of reliability, such as a one-day-in-10-year loss-of-load expectation or a similarly robust reliability metric" and to "use it for planning purposes." (PU Code § 380(h)(4).)

PU Code § 454.5 is the foundational statute for utility procurement and the CPUC's Integrated Resource Planning (IRP) activities. Specifically, PU Code § 454.51(a) requires the CPUC to:

> Identify a diverse and balanced portfolio of resources needed to ensure a reliable electricity supply that provides optimal integration of renewable energy and resource diversity in a cost-effective manner. The portfolio shall be used by the commission to establish integrated resource planning-based procurement requirements that rely on zero-carbon-emitting resources to the maximum extent reasonable and be designed to achieve the state policy specified in Section 454.53 and any statewide greenhouse gas emissions limit established pursuant to the California Global Warming Solutions Act of 2006 (Division 25.5 (commencing with Section 38500) of the Health and Safety Code) or any successor legislation.

PU Code § 454.52 requires the CPUC to adopt a process for LSEs to file integrated resource plans and updates to those plans to ensure that the LSEs meet GHG emissions targets, Renewable Portfolio Standard (RPS) requirements, and system and local reliability with minimal impacts on customer bills. PU Code § 454.52(c) states that the CPUC "may order the procurement of resources with specific attributes by load-serving entities as a result of the integrated resource planning process and shall enforce any resource procurement requirements on a nondiscriminatory basis." It also states that enforcement "may include the assessment of penalties for noncompliance." In addition, PU Code § 454.51(e) requires the CPUC to ensure that all costs

resulting from nonperformance to satisfy the resource need shall be borne by the LSE that failed to perform. PU Code § 380(e) requires that each LSE shall be subject to the same requirements for RA, the RPS program, and the IRP process that apply to electrical corporations (IOUs) or are otherwise required by law or by order or decision of the CPUC. It also requires the CPUC to exercise its enforcement powers to ensure compliance by all LSEs.

Several bills have modified key parts of the PU Code related to RA and IRP over many years, including:

- **AB 1373 (Garcia, 2023).** Made explicit that the IRP process can be used to identify a portfolio to establish procurement requirements and that the RA program shall facilitate development of generating capacity that is needed to achieve the state's SB 100 policy to achieve 100 percent zero-carbon and renewable energy by 2045. Requires each LSE to be subject to the same requirements for the IRP process, in addition to RA and RPS, that is applicable to electric IOUs.
- **SB 1158 (Becker, 2022).** Required the CPUC as part of the RA program to require every LSEs to annually report information regarding the sources of electricity and the emissions of greenhouse gases associated with those sources of electricity for RA requirements.
- **SB 1020 (Laird, 2022).** Updated PU Code §454.53(a) to require eligible renewable energy resources and zero-carbon resources to supply 90% and 95% of all retail sales of electricity to California end-use customers by the end of 2035 and 2040, respectively.
- **AB 1279 (Muratsuchi, 2022).** Requires that by 2045, statewide anthropogenic greenhouse gas emissions are reduced to at least 85% below the statewide greenhouse gas emissions limit (1990 levels) established pursuant to Health and Safety Code (HSC) § 38550. See HSC § 38562.2(c)(2).
- **SB 100 (De León, 2018).** Established that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of all retail sales of electricity to California end-use customers by December 31, 2045.
- **SB 1136 (Hertzberg, 2018).** Revised existing statute that required the CPUC, in consultation with the CAISO, to establish RA requirements for the state's electric LSEs.
- **SB 618 (Bradford, 2017).** Required the IRP plans of all LSEs to contribute to a diverse and balanced portfolio of resources needed to ensure a reliable electricity supply, meet certain environmental goals, and prevent cost shifting among LSEs.
- **SB 350 (De León, 2015)**. Established the current IRP process, required each LSE to file IRP plans for approval or certification by the CPUC, and increased RPS goals, among other things.

Any RCPPP proposal must be consistent with applicable PU Codes intended to ensure reliability and GHG reduction. As proposed, RCPPP would apply to all LSEs in the CPUC's jurisdiction, and it would determine and allocate need for reliability and GHG emissions reductions to each LSE based on established CPUC processes, set compliance requirements, and establish clear and nondiscriminatory enforcement penalties on LSEs that fail to comply with procurement obligations.

2.2 Market Regulation

The CPUC's regulation of California's electricity markets includes several programs that focus on procurement planning. The RA program requires contracting for capacity for system, local, and flexibility needs in the near-term and ensures that such capacity has a must-offer obligation to bid into the California Independent System Operator (CAISO) markets. The RPS program addresses LSEs' planning, procurement, and compliance with RPS statutory requirements. Demand-side resources have been addressed in the Integrated Distributed Energy Resource (IDER) proceeding (Rulemaking (R.) 14-10-003), the High DER proceeding (R.21-06-017), the Demand Flexibility proceeding (R.22-07-005), and other resource-specific proceedings such as those focused on energy efficiency, demand response, and behind-the-meter resources. The IRP process establishes long-term planning goals for new resource needs to meet reliability requirements and GHG reduction targets and can order new resource procurement.

2.3 Timeline of Recent Procurement Events

The above regulatory framework has been stable since the early 2000s, with the notable replacement of the former Long-Term Procurement Plan (LTPP) proceeding with the IRP process for reviewing the 10-year outlook for reliability need and administering procurement orders for new resources. With the passage of SB 350 (De León) in 2015, the CPUC began a transition away from long-term resource planning that relied on IOUs for ensuring new capacity needed for reliability. Prior to 2019, new resources needed for reliability were ordered to be developed by IOUs, cost recovery was established via the Cost Allocation Mechanism, and new resources that were procured to meet RPS requirements were procured by all LSEs, with some exceptions.

While the first IRP cycle (2017-2018) after the passage of SB 350 was planning focused, the CPUC established a procurement track in IRP pursuant to Decision (D.) 19-04-040, issued May 1, 2019. The first IRP procurement requirements for all CPUC-jurisdictional LSEs were ordered by the CPUC in Rulemaking (R.) 16-02-007 pursuant to D.19-11-016, issued November 13, 2019, requiring 3,330 megawatts (MW) of procurement by August 1, 2023. In D.20-03-028, issued April 6, 2020, the CPUC contemplated additional work in IRP's procurement track. In R.20-05-003 and pursuant to D.21-06-035, issued June 30, 2021, the CPUC required 11,500 MW of additional net qualifying capacity (NQC) to be procured by all LSEs subject to the CPUC's IRP authority. Notably, the procurement ordered by D.19-11-016 and D.21-06-035 was outside of the established framework and cadence of the IRP planning track as envisioned by D.18-02-018.

On November 18, 2020, a *Staff Proposal for Resource Procurement Framework in Integrated Resource Planning* (*2020 Staff Proposal)* was incorporated into the record in R.20-05-003 via ALJ Ruling.[1] The *2020 Staff Proposal* largely

[1] R.20-05-003, *Administrative Law Judge's Ruling Providing and Incorporating into Record Staff Paper on Resource Procurement Framework* (November 18, 2020).

discussed "issues and options associated with procurement in the context of the IRP process."[2] The CPUC reaffirmed its commitment to "continue to explore the ideas presented" in the *2020 Staff Proposal* in its decision addressing mid-term reliability (D.21-06-035).[3] After inviting comments on the proposals, in D.22-02-004, issued February 15, 2022 and adopting the 2021 Preferred System Plan, the CPUC "commit[ed] to development of a programmatic structure for IRP procurement" which would "ensure that LSEs optimize their procurement choices to achieve our three goals of reliability, GHG reductions, and least-cost procurement."[4] By D.23-02-040, issued February 28, 2023, the CPUC required supplemental mid-term reliability procurement totaling of 4,000 MW of NQC in addition to the 11,500 MW ordered previously in D.21-06-035.

On September 8, 2022, the *Reliable and Clean Power Procurement Program: Staff Options Paper* was issued in R.20-05-003, accompanied by a request for comments via ALJ Ruling.[5] A workshop was held on September 20, 2022, to familiarize stakeholders with the *Staff Options Paper* and to provide stakeholders with an opportunity to ask clarifying questions prior to filing written comments in November 2022. A courtesy summary of the opening and reply comments from 34 parties submitted in 2022 has been filed as Attachment C to the ALJ Ruling alongside this Staff Proposal.

Building on the history above, this paper represents the most recent step in meeting the CPUC's desire to establish a programmatic approach to IRP procurement, meaning a set of predictable rules and requirements that will establish procurement obligations. This approach would be in addition to other aspects of the CPUC's existing IRP program which will remain intact (*e.g.,* IRP modeling, resource portfolio development, IRP plan submittals, etc.). Staff thanks all decision-makers and stakeholders involved in assisting with this significant effort and looks forward to continued collaboration.

2.4 Issues with Current Procurement Process

The IRP process allows for an "order-by-order" approach to procurement. While this approach has been necessary and has worked well to date, it has several limitations. Individual procurement orders have been an imprecise form of regulatory intervention, as they currently do not signal what will happen after the order, and any LSE that comes into existence after the order is not subject to the procurement requirements. Further, historically procurement orders have left LSEs with some degree of uncertainty about the timing, magnitude, and attribute types of new resource development that will be ordered for reliability purposes outside of the

[2] R.20-05-003, *Administrative Law Judge's Ruling Providing and Incorporating into Record Staff Paper on Resource Procurement Framework* (November 18, 2020), 2.

[3] R.20-05-003, D.21-06-035, 79-80.

[4] R.20-05.003, D.22-02-004, 4.

[5] R.20-05-003, *Administrative Law Judge's Ruling Seeking Comments on Staff Paper on Procurement Program and Potential Near-Term Actions to Encourage Additional Procurement* (September 8, 2022).

adoption of a particular procurement order by the CPUC. LSEs may see this uncertainty as a signal to *not* engage in incremental procurement beyond what is set in those orders, which puts future reliability at risk.

The current approach of issuing individual procurement orders is somewhat unpredictable for LSEs and presents barriers to efficient procurement and reliability by failing to address load migration,[6] facilitate proactive LSE self-provision of required resource attributes, or expressly address existing resource retention. Any of these barriers to efficient procurement may put reliability at risk. Further, factors such as the increased role of community choice aggregators, reduced options for capacity contracts, limited new resource supply, uncertain load growth due to data centers and electrification, and more ambitious GHG reduction goals have created an urgent need for procurement.

Past procurement orders have resulted in significant quantities of new procurement coming online: over 25 GW of new resources have reached commercial operation in the CAISO since 2020. The CPUC's first procurement decision, D.19-11-016, provided an opportunity for LSEs to opt-out of procurement responsibilities, with IOUs procuring on behalf of the opt-outs and charging LSEs, but more recent decisions did not allow for opt-outs.[7] The subsequent procurement orders (D.21-06-035 and D.23-02-040) applied to more LSEs since additional CCAs had formed, did not provide opt-outs, and established a penalty regime. Further, D.21-06-036 and D.23-02-040 set hundreds of compliance obligations by establishing annual requirements for each LSE for six years (between 2023 and 2028), as well as setting specific resource-attribute procurement (*e.g.,* long-duration energy storage, zero-emitting firm, and zero-emitting Diablo Canyon replacement). Compliance with procurement orders has been tracked, but the CPUC has not yet undertaken enforcement of violations of procurement orders, although compliance can be assessed starting on June 1, 2025 for procurement that has been due since June 1, 2023. Penalties and compliance are an important part of any procurement effort to ensure fairness and reliability, but compliance with current procurement orders has proven time-intensive to assess.

RCPPP aims to provide a new approach to resource procurement by establishing and administering a long-term procurement program, which, alongside the RA and RPS programs, would provide LSEs with a clear regulatory obligation to procure their share of the resources needed to meet reliability and GHG reduction goals at least-cost. Once adopted, RCPPP will be phased in as the existing IRP procurement orders continue to bring on new capacity in the next few years. Going forward, RCPPP and related LSE procurement obligations would co-exist with any centralized procurement for long lead-time resources. Through the

[6] Currently, LSE procurement obligations do not modify as LSEs gain or lose load in the years after a procurement order. The three IRP procurement orders (D.19-11-016, D.21-06-035, and D.23-02-040) assigned procurement allocations to LSEs according to the load ratio share in place at the time of each order.

[7] The cost-allocation adopted by the CPUC for opt-out LSEs under D.19-11-016 is referred to as Modified Cost Allocation Mechanism, or MCAM. The opted-out LSEs only pay for procurement based on load sale basis. In other words, if the opted-out LSE loses load or goes out of business, the IOU customers will have to pay for procurement done on behalf of opt-outs. The risk is relatively small due to the small number of MWs currently subject to the MCAM processes. Nonetheless, the details and uncertainty revealed while implementing the MCAM process for D.19-11-016 have demonstrated that the process is doable yet complex, time-consuming, and unlikely to be durable at a larger scale.

development of a programmatic approach, regulators can establish rules and a long-term trajectory of procurement responsibilities, enabling market participants to choose the best procurement strategy that matches their resource preferences and risk tolerance.

2.5 Current GHG Reduction Planning

The CPUC has an established IRP planning process for determining GHG planning targets for the electric sector. In 2024, pursuant to D.24-02-047, the CPUC adopted the 2023 Preferred System Plan (PSP) portfolio that meets a statewide GHG target of 25 million metric tons (MMT) for the electric sector in 2035. This PSP portfolio reduces emissions by 28 MMT in 2035 compared to the 2020 electric sector emissions in the CAISO area, translating to a 58% reduction. By 2045, the PSP portfolio reduces emissions by 85%, based on the 100% goal for 2045 pursuant to SB 100 (De León, 2018). RCPPP can translate these planning targets into an actionable compliance metric for jurisdictional LSEs. Any future changes to the electric sector GHG target in compliance with state policies are expected to be made in the IRP planning track, but translating the GHG target into an enforceable, nondiscriminatory procurement obligation for each LSE would occur via RCPPP.

2.6 Comparison to Staff Options Paper

On September 8, 2022, the *Reliable and Clean Power Procurement Program: Staff Options Paper* was filed in R.20-05-003. Stakeholders filed comments on the *Staff Options Paper* in response to the *Administrative Law Judge's Ruling Seeking Comments on Staff Paper on Procurement Program and Potential Near-Term Actions to Encourage Additional Procurement*.[8] The *Staff Options Paper* discussed options for programmatically addressing reliability and GHG externalities in procurement. The proposals in the instant paper also mirror the key elements proposed in the *Staff Options Paper*—need determination, need allocation, compliance, and enforcement.

Addressing reliability, the *Staff Options Paper* initially proposed several capacity contracting options, including marginal ELCCs, average ELCCs, Slice-of-Day, and firm energy contracting via Standardized Fixed-Price Forward Energy Contracts. In this Staff Proposal, marginal ELCCs were chosen for their effectiveness in signaling resources necessary to meet a specified loss of load expectation. Further, marginal ELCCs are most aligned with principles of economic efficiency by valuing resources based on their marginal value to the market. The CPUC already uses marginal ELCCs for new procurement valuation within the IRP and RPS programs to ensure economically efficient marginal resource decisions are made. This Staff Proposal provides two options for implementing a marginal ELCC approach for reliability procurement, scoped to either (1) new and existing resources or (2) new resources plus modifications to the RA program to extend the need to retain existing resources.

Addressing GHG reduction strategies, the *Staff Options Paper* explored a mass-based approach, a Clean Energy Standard (CES) approach, and both forward- and backward-looking compliance assessment methods. This

[8] Staff has summarized the comments filed by parties on the *Staff Options Paper*, included as Attachment C to the accompanying ALJ Ruling.

Staff Proposal further refines the option of a CES with backward-looking compliance over a mass-based approach, since the CES is more adaptable to diverse operational scenarios and is more scalable compared to a mass-based approach. This Staff Proposal also asks parties for alternative approaches to GHG reduction, including whether existing IRP processes could be utilized, potentially with modifications, to bring projects online in an optimal and efficient manner, complementing any potential new approach to reliability procurement as outlined in this Staff Proposal.

Overall, the current strategic direction of RCPPP described in this Staff Proposal is founded and builds on the principles and frameworks outlined in the *Staff Options Paper*.

3. RCPPP Design

The proposed design of RCPPP focuses on system reliability and GHG reductions to facilitate LSE decision-making to co-optimize procurement of reliable and clean resources at least cost. The reliability portion of RCPPP is detailed in Section 3.1, and the GHG portion of RCPPP is detailed in Section 3.2. The four key elements of RCPPP, for both the reliability and GHG reduction portions, are need determination, need allocation, compliance, and enforcement, as previously defined in Figure 2 and explained in greater detail in this section.

3.1 Reliability

A well-designed procurement program should provide a strong signal for the retention of existing resources and the development of new resources needed to ensure reliability. Accordingly, Staff proposes two options intended to facilitate the procurement of reliability resources. Option I covers reliability procurement needed for new and existing resources, whereas Option II covers new vintage resources only with a proposed multi-year RA extension for existing resource retention. Despite these differences in scope, both options include programmatic approaches to need determination, need allocation, compliance, and enforcement. Prior to presenting these design elements in greater detail, however, a summary of the timeline of RCPPP is presented.

Note: Since RCPPP will be a rolling, ongoing program, it will be regularly setting requirements that apply to a forward timeframe. This proposal references years in the form of T+n, where T+0 is the current calendar and RA year, T+1 is next year, for which Year-Ahead RA is shown in October, T+2 is two years ahead, T+3 is three years ahead, T+4 is four years ahead, etc. Similarly, T-1 is the year prior to the current year of T+0.

This section also references marginal effective load carrying capability (ELCC). To facilitate stakeholder understanding, marginal ELCC values are shown here as indicative estimations only, based on the most recent 2023 Preferred System Plan, as adopted by the CPUC in D.24-02-047. Accordingly, the marginal ELCC values presented here are not, and should not be interpreted as, final recommendations. These values will be updated in the future using loss of load probability modeling.

Further, this section includes references to the RA Slice of Day program. For an informational comparison between Slice of Day and marginal ELCC reliability accounting approaches, please refer to Section 3.1.6.3.

3.1.1 Timeline for Reliability Procurement

Prior to a CPUC decision on any revisions to current reliability procurement processes, Staff will collect information to evaluate Option I and Option II using modifications of already existing IRP and RA data templates.

The existing Resource Data Template (RDT) and the information to be filed by LSEs in their IRP plans (due November 1, 2025) will provide data that can be used to evaluate Option I, while LSEs' RA filings (due October 31, 2025) and potential modifications to the RDT will provide data that can be used to evaluate Option II.

The purpose of these preliminary evaluations is to perform an initial assessment of the various calculations involved in both Option I and Option II, which could inform the eventual adoption and implementation of either option. Notably, in these evaluations, enforceable procurement obligations will not be set on LSEs, and LSEs will not be subject to financial penalties.

If the CPUC adopts RCPPP in a decision, Staff anticipates the timeline of reliability procurement to follow the general schedule outlined below, with need determination and need allocation calculated each February and April, respectively, and compliance filings due in December and June of each RCPPP year.

The following general timeline and schedule will be applicable to the reliability portion of RCPPP:

- **Need Determination.** In February T-1, Staff will release the Reliability Procurement Need (RPN) for T+0 through T+9 (*i.e.,* 10 calendar years) and marginal ELCCs that apply to LSEs' upcoming RCPPP filing year compliance showings based on an adopted resource portfolio, which in some years may be a Preferred System Plan (PSP) based on the CPUC's IRP cycle.
- **Need Allocation.** In April T-1, Staff will release each individual LSE's Reliability Procurement Requirement (RPR). In other words, the RPR is the allocation of the RPN to each LSE. In Option I, the RPR covers T+2 through T+4. In Option II, the RPR covers T+0 through T+4. In both options, Staff will provide indicative information for T+5 through T+9. Staff will also release filing requirements for the upcoming RCPPP filing year compliance showings.
- **Compliance Filings and Enforcement.** In December T-1, all LSEs will file their first of two compliance showings for the RCPPP filing year. This filing will be non-binding and will only be subject to an administrative penalty for accuracy and timeliness. In June T+0, all LSEs will file their second and final compliance showing of the RCPPP filing year. This filing will be binding (*i.e.,* the official milestone to measure an LSE's compliance towards meeting its RPR) and will be subject to both an administrative penalty and a deficiency penalty. Section 3.1.5 discusses enforcement penalties in greater detail.

Based on the above timeline, the 2026-2027 RCPPP filing year[9] will consist of the following milestones, with 2026 being T-1 and 2027 being T+0.

- **Need Determination.** In February 2026, Staff will release the RPN for 2027 through 2036 (T+0 through T+9) and marginal ELCCs that apply to LSEs' 2026-2027 RCPPP compliance showings based on the CPUC's most recently adopted resource portfolio.
- **Need Allocation.** In April 2026, Staff will release each individual LSE's RPR. In Option I, the RPR covers 2029 through 2031 (T+2 through T+4). In Option II, the RPR covers 2027 through 2031 (T+0 through T+4). In both options, indicative information will be provided for 2032 through 2036

[9] The naming convention for RCPPP filing years will include two years (*e.g.,* 2026-2027 RCPPP filing year) since there will be December and June compliance filings that span two calendar years. However, the December and June compliance filings will cover the same RCPPP period.

(T+5 through T+9). Staff will also release filing requirements for the 2026-2027 RCPPP compliance showings.

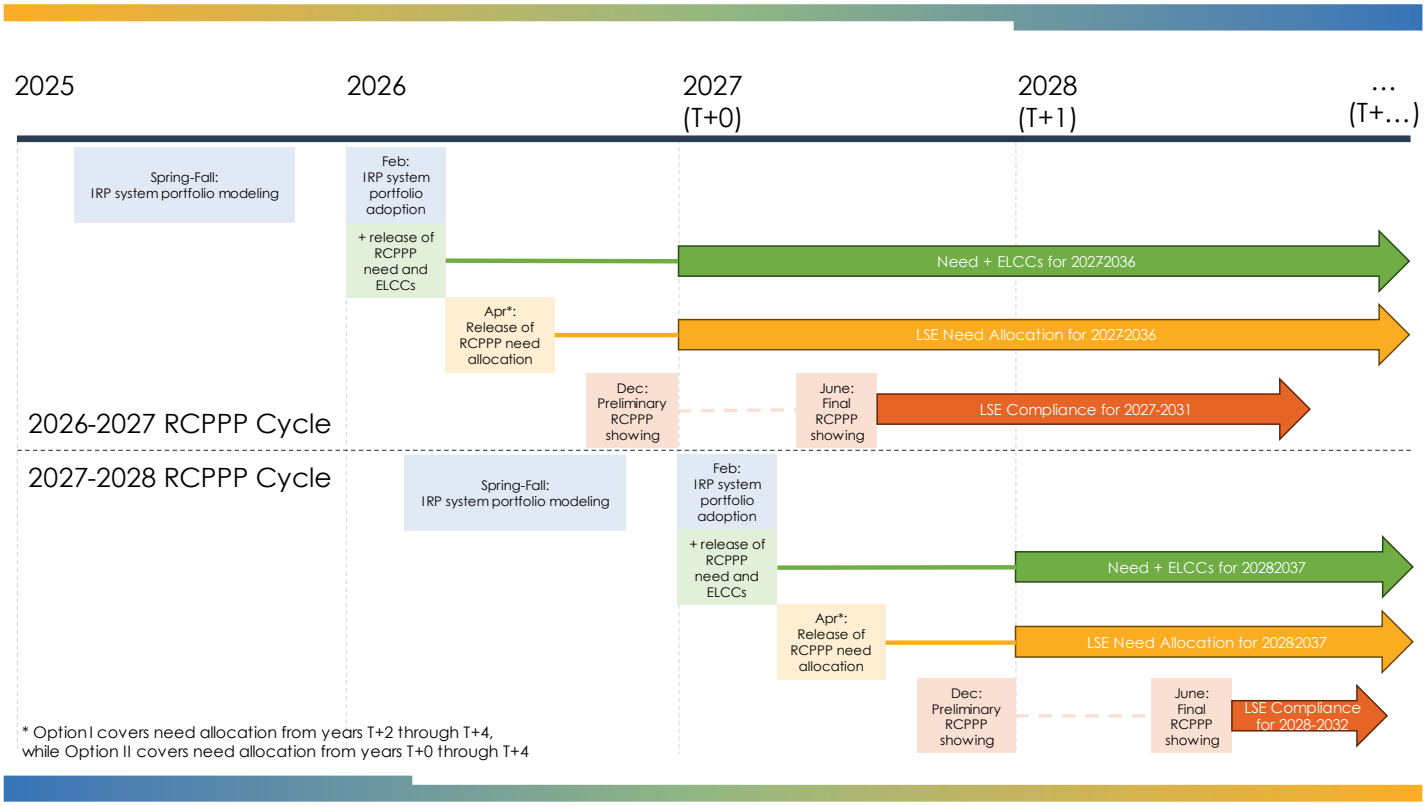
- **Compliance Filings and Enforcement.** In December 2026, LSEs will file their first 2026-2027 RCPPP compliance showing. This filing will be non-binding and will be subject to an administrative penalty for 2030 (T+3) and 2031 (T+4), but it will not be subject to a deficiency penalty. In June 2027, LSEs will file their second and final 2026-2027 RCPPP compliance showing. Due to the phasing in of penalties, this filing will be subject to an administrative penalty and a deficiency penalty for 2030 (T+3) and 2031 (T+4) only. The deficiency penalty will apply to online sufficiency or contracting sufficiency. For further detail on the phasing-in of financial penalties, see Section 3.1.5.2.

Similarly, the 2027-2028 RCPPP filing year will consist of the following milestones, with 2027 being T-1 and 2028 being T+0.

- **Need Determination.** In February 2027, Staff will release the RPN for 2028 through 2037 (T+0 through T+9) and marginal ELCCs that apply to LSEs' 2027-2028 RCPPP compliance showings based on the CPUC's most recently adopted resource portfolio.
- **Need Allocation.** In April 2027, Staff will release each individual LSE's RPR. In Option I, the RPR covers 2030 through 2032 (T+2 through T+4). In Option II, the RPR covers 2028 through 2032 (T+0 through T+4). In both options, indicative information will be provided for 2033 through 2037 (T+5 through T+9). Staff will also release filing requirements for the 2027-2028 RCPPP compliance showings.
- **Compliance Filings and Enforcement.** In December 2027, LSEs will file their first 2027-2028 RCPPP compliance showing. This filing will be non-binding and will subject to an administrative penalty for 2031 (T+3) and 2032 (T+4), but it will not be subject to a deficiency penalty. In June 2028, LSEs will file their second and final 2027-2028 RCPPP compliance showing. Due to the phasing in of penalties, this filing will be subject to an administrative penalty and a deficiency penalty for 2031 (T+3) and 2032 (T+4) only. The deficiency penalty will apply to online sufficiency or contracting sufficiency. For further detail on the phasing-in of financial penalties, see Section 3.1.5.2.

These timeframes for the 2026-2027 and 2027-2028 RCPPP filing years are summarized in Figure 3.

Figure 3. Timing of Annual RCPPP Reliability Cycle[10]



A result of the above filing timeline is that year T+n in one RCPPP filing year will be year T+n-1 in the subsequent RCPPP filing year. For example, as shown in Table 4 below, 2031 will be year T+4 in the 2026-2027 RCPPP filing year, but it will be year T+3 in the 2027-2028 RCPPP filing year, T+2 in the 2028-2029 RCPPP filing year, T+1 in the 2029-2030 RCPPP filing year, and T+0 in the 2030-2031 RCPPP filing year.

Table 4. Rolling of Years for RCPPP Reliability Procurement

	Years of Procurement Obligation					Years of Indicative Information					
RCPPP Year	**T+0**	**T+1**	**T+2**	**T+3**	**T+4**	**T+5**	**T+6**	**T+7**	**T+8**	**T+9**	**T+10**
2026-2027	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
2027-2028	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
2028-2029	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
2029-2030	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
2030-2031	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041

[10] While the 2026-2027 and 2027-2028 RCPPP reliability cycles are shown here, this timeline would occur each year for each cycle.

3.1.2 Need Determination

1. Staff shall publish the details of a reliability need determination methodology that uses loss-of-load probability modeling for a suitable CAISO system portfolio (*e.g.,* the most recently adopted IRP system portfolio) that meets the CPUC's reliability standard of 1-day-in-10-year (*i.e.,* 0.1 days per year) loss of load expectation (LOLE). For each compliance year, the need will be determined by calculating the marginal ELCC percentage of each resource class in the adopted portfolio, multiplying it by the nameplate MW for each resource class, and adding up the total accredited ELCC MW of the portfolio. The need will be termed the initial Reliability Procurement Need (RPN) and will express, in terms of perfect capacity (*i.e.,* ELCC MW), the resources required to reach the CPUC's reliability standard assuming all resources are accredited at their marginal ELCC. Marginal ELCC calculations capture resource output during "critical hours" (*i.e.,* hours in which a change in generation or load will impact system reliability). The need is therefore functionally equivalent to the load plus operating reserves served during critical hours for a portfolio at 0.1 LOLE.

2. Staff will determine the initial RPN in units of ELCC MWs (CAISO-wide minus non-CPUC jurisdictional load) using a reliability standard of no more than one-day-every-10-years (*i.e.,* 0.1 days per year) LOLE for each of the next 10 years (*i.e.,* T+0 through T+9). The need determination will be based on modeling all hours of the years, though for the near future Staff expects the critical hours to occur within the months of May, June, July, August, and September. This will set the minimum, initial RPN.

3. Staff will apply a 2.5% buffer to the initial RPN that is necessary to mitigate development risk and/or other potential causes of insufficient resources being online for LSEs to meet year-ahead system Resource Adequacy requirements. The buffer ensures that CPUC-jurisdictional LSEs are procuring and building sufficient resources such that they can collectively enter the reliability year T+0 sufficiently resourced to meet the CPUC's 0.1 LOLE reliability standard and RA program requirements. The buffer will be above the expected system RA requirements such that total online installed RA capacity by T+0 (including available import capacity) is expected to exceed total RA program requirements, which are expected to be set using forecasted load plus a planning reserve margin that ensures a 0.1 LOLE.

4. Overall, the reliability need determination will be the initial RPN plus a 2.5% buffer, resulting in the final RPN.[11]

[11] Final RPN = 1.025 * Initial RPN

5. Staff will publish the final RPN for years T+0 through T+9 every February and will allocate it to LSEs every April. Staff will update the resource accounting of marginal ELCCs every two years with new modeling. However, the initial implementation of RCPPP may allow for more flexibility in updating the RPN and marginal ELCCs in the early test years based on timing and stakeholder feedback. The marginal ELCCs may shift depending on the portfolio contents (*i.e.,* the combination of resources that exist and the resources that are planned at the time of modeling).

6. Staff has already conducted the reliability procurement need for 2025 through 2029 via supporting the CPUC's adoption of the 2023 Preferred System Plan (PSP) pursuant to D.24-02-047. As of February 2024, estimations of the RPN are 52,644 MW ELCC for 2025, 52,065 MW ELCC for 2026, 51,212 MW ELCC for 2027, 50,360 MW ELCC for 2028, and 52,317 MW ELCC for 2029.

3.1.2.1 Option I: Reliability Procurement for New and Existing Resources

7. In Option I, the scope of the need determination will include both new and existing resources. This means that Option I relies on existing and new resources competing against one another for LSE compliance to determine market entry for new resources and influence generators' decisions about retention or market exit for existing resources.

3.1.2.2 Option II: Reliability Procurement for New Resources & Multi-Year RA

8. In Option II, the scope of the need determination will be new vintage resources with multi-year RA considerations. Staff will determine the annual *new* RPN in units of ELCC MWs for each of the next 10 years and shall identify the months of highest need for each year (likely to be May through September). Staff shall publish the details of the need determination methodology based on the principle that it is the total RPN minus the reliability contribution of existing vintage resources.
    a. "Existing vintage resources" are defined as those that came online more than 10 years before the compliance year and that are still expected to be online in the compliance year.
    b. "New vintage resources" are defined as those that came online or will come online no more than 10 years before the compliance year. This definition of new resources will serve to "give credit for and take into account proactive and early procurement by LSEs," as required by D.23-02-040.[12] LSEs will not necessarily need to bring online new resources each year but rather show a portfolio of resources that contains eligible new resources. This will ensure that resources brought online to meet CPUC-jurisdictional LSE needs will continue to serve CPUC-jurisdictional LSEs (*i.e.,* new resources will not be sold out of state once online.).
    c. In setting the new RPN, Staff will determine an assumption for the rate of retirements of existing resources that will reduce the number of existing resources in the model, which will

[12] R.20-05-003, D.23-02-040, 33.

in turn increase the number of new resources required to be procured to maintain reliability. The new resource need will therefore be a function of (A) online (plus in-development and planned online) resources vintaged as "new" using the 10-year-prior definition, (B) load growth, and (C) Staff's assumptions for the rate of retirement of existing resources.

9. Staff will annually update the RPN, the existing resource retention and retirement assumptions, and the resulting new reliability procurement and planning needs, for each year.

3.1.3 Need Allocation

10. The following proposals for allocating need apply to both Option I and Option II. However, in Option I, the allocated need is the total need (*i.e.,* existing and new resources), whereas in Option II, the allocated need is total *new* need.

11. Staff shall publish the details of a need allocation methodology that allocates the final RPN (*i.e.,* need determination) into a Reliability Procurement Requirement (RPR) for each LSE. The need allocation uses hourly LSE-specific load forecasts and allocates need based on each LSE's pro-rata share of the managed load during the critical hours found during the need determination. If the critical hours vary by year, then the LSE-specific portion may change by year.

12. If hourly load forecasts by LSE for years T+0 through T+9 are not available or feasible by the time of the CPUC's adoption of RCPPP, then the CPUC may utilize other load forecasting options for the purposes of need allocation. For example, a year-ahead hourly load forecast could be used several years in a row.

13. The RPR for investor-owned utilities (IOUs) will include a Collective Capacity Reserve (CCR) for each year (T+0 through T+9). The CCR will be applied to the initial RPN and will range from a minimum of 1.5% to a maximum of 3% for each IOU within their respective service territories, but the percentage may be adjusted over time. The CCR will be procured as new resources for all customers, and resulting costs will be allocated to distribution customers of IOUs on a Transmission Access Charge (TAC) area capacity load ratio share basis. The CCR will be procured by IOUs serving as the RCPPP-central procurement entity (RCPPP-CPE). The CCR will function as collective insurance against a variety of events, including RCPPP capacity deficiencies of LSEs (which are unmitigable in real time), large changes in total load forecast, or unexpected retirements. In contrast to backstop procurement, which may take several years to come online after an LSE is deemed deficient, the CCR will be procured in advance so that there is adequate additional capacity to readily address LSE deficiencies that may not be known until T+0.

14. The CCR is necessary to ensure reliability in the event of delays in resource availability beyond buffer levels or significant changes in the need determinations during T+1 or T+2. IOUs will be required to provide the CCR resources to the CAISO supply plans. The existence of resources

above 0.1 LOLE could support the removal of the RAIMM penalty mechanism[13] currently in place to ensure replacement capacity in the event of an RA resource not performing. IOUs will not face penalties for delays in the procurement of CCR resources, and cost recovery for these resources will be through the Cost Allocation Mechanism (CAM). IOUs should identify CCR resources at the time they seek contract approval and cost recovery. IOUs are permitted to transfer resources between their bundled portfolio and the CCR portfolio prior to the resources coming online, if requested via an Advice Letter. This transfer process will help ensure that IOUs are highly likely to achieve RCPPP compliance since they will be able to confidently over-contract for new resources above their own bundled RCPPP obligations. While the IOUs get an advantage relative to other LSEs in this regard, they only receive that advantage because they must conduct additional CCR procurement relative to other LSEs. Once a resource is online, it must remain in the CCR portfolio for the duration of its contract or the life of the asset. LSEs will not receive capacity credit allocations for CCR resources to use towards their RPS, RA, or RCPPP obligations, as such allocations would undermine the purpose of the reserve. The CCR resources will be made available to the CAISO as RA resources, with Must Offer Obligations like all RA resources.

15. Although the CPUC will reissue 10 years' worth of RCPPP need allocations each year, for compliance purposes, need allocations will remain fixed within T+2. In other words, the RPR for T+1 and T+0 of the current year will not be higher than the RPR for T+2 and T+1, respectively, of the prior year.
    a. In contrast, system RA obligations can and do change each year with updates to the Integrated Energy Policy Report (IEPR) annual load forecast publication and the load allocation.
    b. A newly formed LSE will receive a need allocation for all years, including RCPPP compliance obligations, that will require procurement in years T+2 through T+4 (and indicative values beyond T+4). A newly formed LSE will have an obligation to procure new vintage resources based on its need allocation, not based on its year of formation.

3.1.3.1 Option I: Reliability Procurement for New and Existing Resources

16. In Option I, the allocated need is the total need (*i.e.,* it is not delineated between new vs. existing resources).

17. In April of each year, Staff will calculate and communicate the RPR (*i.e.,* each LSE's allocated procurement requirement and the RCPPP-CPE's procurement requirement) for years T+2 through T+4 for Option I, as well as each LSE's indicative need allocations for years T+5 through T+9 for planning purposes. Years T+2 through T+4 will serve as compliance years for Option I, while years T+5 through T+9 are indicative of future RCPPP obligations, considering updates to

[13] The CAISO's current RA initiative is considering eliminating RAIMM penalties. For example, see the Resource Adequacy Working Group's *Revised Discussion Paper & Final Recommendation Plan*, dated July 26, 2024.

the load forecast and load migration. This information is analogous to LSEs receiving IRP need allocations for IRP plan filings, but this proposal does not modify the IRP plan filing process.

a. For example, in April 2026, Staff will publish, or communicate confidentially as required, each LSE's RPR for compliance years 2029-2031 and indicative values for 2032-2036.

3.1.3.2 Option II: Reliability Procurement for New Resources & Multi-Year RA

18. In Option II, the allocated need is total new need (*i.e.,* based on new vintage resources).

19. In April of each year, Staff will calculate and communicate the RPR (*i.e.,* each LSE's allocated procurement requirement and the RCPPP-CPE's procurement requirement) for years T+0 through T+4 for Option II, as well as each LSE's indicative need allocations for years T+5 through T+9 for planning purposes. Years T+0 through T+4 will serve as compliance years for Option II, while years T+5 through T+9 are indicative-only to consider updates to the load forecast and load migration. This information is analogous to LSEs receiving IRP need allocations for IRP plan filings, but this proposal does not modify or address the IRP plan filing process.

a. For example, in April 2026, Staff will publish, or communicate confidentially as required, each LSE's RPR for compliance years 2027-2031 and indicative values for 2032-2036.

20. The need allocation will show a single annual value, since compliance is measured via annual marginal ELCCs. However, compliance will be reviewed based on contracting for the months of highest need (*i.e.,* May through September for the near future) for years T+0 through T+4 for Option II. LSEs can consider the need allocation for years T+5 through T+9 as indicative estimations of future RCPPP obligations.

21. If Option II is adopted, then for the T+2 and T+3 system RA Slice of Day need allocation, Staff will subsequently and separately issue a Staff Proposal for implementation of forward multi-year RA, served jointly on the IRP and RA proceedings, to ensure the retention of existing resources alongside the new resources obligation in RCPPP. For the new resource obligation of RCPPP, Staff shall publish the details of a reliability need allocation methodology that identifies the total RPN, subtracts the contribution of existing resources (defined as online and greater than 10 years old during the compliance period), and then divides the new resource RPN into an RPR for each LSE (*i.e.,* LSE-specific allocations per annum), representing *new* procurement need. The methodology will use hourly LSE-specific load forecasts and will allocate the need based on each LSE's pro-rata share of the managed load during the critical hours found during the need determination. If the critical hours vary by year, then the LSE specific portion may change by year.

3.1.4 Compliance

22. The following proposals for measuring LSE compliance apply to both Option I and Option II.

23. LSEs will procure to meet or exceed their procurement obligations (*i.e.,* their RPR).

24. LSEs will submit two compliance filings each RCPPP year.
    a. Each December, all LSEs will file their preliminary compliance showings for the RCPPP year. This filing will be non-binding. This filing will be subject to an administrative penalty, but not subject to a deficiency penalty.
    b. In June of the following year, all LSEs will file their final compliance showing for the RCPPP year. This filing will be binding (*i.e.,* the official milestone to measure an LSE's compliance) and will be subject to both an administrative penalty and a deficiency penalty.
    c. Administrative and deficiency penalties are described in greater detail in Section 3.1.5.

25. For resource accounting, the CPUC will maintain, and modify as necessary, a part of the Master Resource Database (MRD) that establishes the resources eligible to meet the RCPPP obligations, including both existing and expected new resources.
    a. Acknowledging that the existing MRD, used in compliance with the existing RA program, typically only goes out one year for expected resources, it will need to extend out further and incorporate farther out new resources. New resources would be required to have executed contracts to be eligible to get on the MRD and be usable in T+3 and T+4 showings. All new resources used for compliance in T+2, T+1 or T+0 would be required to have a queue position with interconnection agreements that provide for a feasible online date. Each queue position will be spliced into CAISO resource IDs, and each resource ID will have transmission plan deliverability (TPD) allocations and will not be dependent on any major transmission network upgrades that are known to be delayed. If a CAISO resource ID is not yet available, CPUC Staff envision working with the CAISO to establish a durable project identifier that is more granular than the CAISO queue position and will ultimately be matchable to a CAISO resource ID. In Option II, T+1 new resources must also have Notice to Proceed. T+0 resources must have evidence they are online and commercially operating by the final compliance showing in June.
    b. Acknowledging that the MRD currently uses RA-adopted resource accreditation values for the current RA year (*i.e.,* the NQC values per resource ID are not marginal ELCCs in the existing MRD), Staff will publish the details of a RCPPP resource counting methodology using marginal ELCC that is consistent with the RPN methodology and that can be applied consistently to all resource types (new and existing) that are listed in the MRD. Staff will publish a methodology and process for how new resources can nominate to be on the MRD to be eligible for use in compliance. The MRD database will have different resource accreditation values for RA program compliance vs. RCPPP program compliance, but using the same database for both programs will reduce the administrative burden to maintain two separate compliance databases.

26. The RA program has periodically modified resource counting values for a variety of reasons, including because the reliability contribution of many types of resources will change with their quantity (and that of other resources) in the portfolio.[14] The IRP procurement orders use specific ELCC values from the CPUC's MTR order (D.21-06-035) for compliance.[15] Similarly, RCPPP will need to periodically update marginal ELCC resource counting values each time the need determination modeling is updated. In conjunction with publishing the reliability procurement and planning needs, Staff will publish the resource counting values to apply to each resource type to determine each LSE's compliance with its RPR.

27. The following values in Table 5 are indicative estimations of the marginal ELCCs for each resource type. These indicative values are based on the most recent 2023 Preferred System Plan, as adopted by the CPUC in D.24-02-047. Accordingly, the marginal ELCC values presented here are not, and should not be interpreted as, final recommendations. These values will be updated in the future using loss of load probability modeling.

Table 5. Indicative Marginal ELCC Per Resource Type, 2027-2029.

Resource Type	**Marginal ELCC**		
	2027	*2028*	*2029*
Solar	14%	16%	16%
Battery Storage (4-hr)	52%	37%	37%
Battery Storage (8-hr)	54%	41%	43%
Pumped Hydro Storage (12-hr)	54%	41%	43%
Demand Response	33%	22%	22%
In-State Wind	11%	11%	11%
Out-of-State Wind	23%	22%	22%
Offshore Wind	50%	50%	50%
Hydro	75%	75%	75%

[14] The RA program's eligible NQC values have changed over time to account for RA proceeding accreditation rules.

[15] The IRP procurement orders rely on MTR NQC values, which are based on marginal ELCC calculations and already differ from the RA program's NQC valuation for the same resource.

Resource Type	Marginal ELCC		
	2027	*2028*	*2029*
Biomass/Gas	87%	87%	87%
Geothermal	95%	95%	95%
Nuclear	96%	96%	96%
CHP	93%	93%	93%
Gas Peaker	87%	87%	87%
Gas CCGT	88%	88%	88%
Coal	79%	79%	79%

28. In the RA program, there is an RA filing template and RA guide (including filing requirements). In IRP, existing orders use the RDT for IRP procurement order compliance and as a filing requirements document. Similarly, Staff will publish the details of the RCPPP filing requirements to enable LSEs to demonstrate compliance with the RPR. The filing requirements will involve LSEs making twice annual showings (in December and June of each RCPPP year) that demonstrate they have sufficiently contracted to meet the minimum percentage of their RPR for each compliance year, including consideration of development risk. The filing requirements will include that the contracted or owned resources being used for compliance have a Must-Offer Obligation (MOO) for at least the months of the year that Staff find to include the most significant loss of load hours when determining procurement need (likely to be May through September, but potentially subject to change as the overall resource portfolio evolves in the decades to come).

29. The existing IRP MTR orders require LSEs to submit substantial contracting documentation to demonstrate progress towards resources coming online. This paperwork is burdensome for LSEs to produce and for CPUC Staff to review. Accordingly, RCPPP may be able to simplify resource verification. Similar to the current RA filing process, the CPUC may decide to accept an LSE claim to a resource ID on the Master Resource Database without having to provide supplemental documentation (unless requested by Staff), provided a resource verification process can be established in consultation with the CAISO to allow resource ID owners to be pre-vetted with their planned operational status to be listed on the MRD. The pre-vetting would require resource owners to sign and attest that they: (a) are in contract with one or more CPUC-jurisdictional LSEs for a given forward year, (b) plan to perform under an MOO in the CAISO market for a minimum of five months in a given calendar year, and (c) in the case of the new resources, can demonstrate the items shown in Table 6 and Table 7. If the pre-vetting process is not established, then all the

documentation will be required in RCPPP compliance filings, similar to the current IRP procurement order compliance filings which require contract documentation.

30. LSEs will receive credits from any new eligible centrally procured resources. LSEs will receive the credits at the same time as their RCPPP filing obligations. LSEs will not receive credits from CCR procurement since this procurement is additional to meeting the 0.1 LOLE, acting as reliability insurance. LSEs may show their credits of new centrally procured resources towards their allocated need. Staff will publish the list of applicable resources subject to credit allocation and other necessary information annually, in conjunction with the need allocation. The relationship between RCPPP and central procurement is further described in Section 4.

31. LSEs may count procurement achieved for IRP reliability procurement orders (*e.g.,* MTR procurement) towards their RPR in RCPPP. Under Option II, since new resources are defined as online in the past 10 years, resources stemming from IRP procurement orders will be eligible as "new" for the 10 years after their online dates.

32. To demonstrate compliance, LSEs must procure resources that are or will be eligible to be used for compliance with the system RA program requirements. In Option I, these may be existing online resources or new resources not yet online. In Option II, eligible existing resources are those that qualify as part of the "new vintaged resources" described in Section 3.1.2.2.

3.1.4.1 Option I: Reliability Procurement for New and Existing Resources

33. Filings to show compliance with RPR obligations will occur twice a year, in December and June. The December filing would be data-only and non-binding, whereas the June filing would serve as the official milestone to meet the procurement requirements of "Y% for year T+n."[16]

34. For each June compliance filing:
    a. For T+0 and T+1, there will be no RPR compliance obligations under Option I, since the complementary obligations of the month-ahead and year-ahead RA program will ensure sufficient resource contracting.
    b. For T+2, LSEs must show an offtake contract and an executed interconnection agreement for 100% of their required procurement from new or existing resources on the MRD.
    c. For T+3, LSEs must show an offtake contract for 75% of their required procurement from new or existing resources on the MRD.
    d. For T+4, LSEs must show an offtake contract for 50% of their required procurement from new or existing resources on the MRD.

[16] "Y% for year T+n" refers to an LSE needing to show contracts totaling at least Y% of its reliability need for the year that is n years in the future, with T+0 being the current showing year.

35. The above compliance filing requirements for Option I are summarized in Table 6.

Table 6. Summary of Requirements Per Compliance Year in Reliability Option I

June Milestone Showing	T+0	T+1	T+2	T+3	T+4
RA Program Requirements	100% Month-Ahead	90% Year-Ahead			
Offtake Contract (for new or existing resources, for May – September)			✓	✓	✓
Percentage of required procurement to be shown in Offtake Contract (for new or existing resources)			100%	75%	50%
Interconnection Agreement (for new resources)			✓		
Commercial Operations *					

✓*Milestones required in each year T+n.*

** Milestones required for current IRP procurement orders but are not being proposed for RCPPP.*

3.1.4.2 Option II: Reliability Procurement for New Resources & Multi-Year RA

36. For new resources, the cumulative new reliability resource need for a mature RCPPP program would be defined as follows:
    a. For T+0, LSEs will be required to show:
        i. Monthly System RA Slice of Day 100%, consistent with the adopted and existing RA Program, and
        ii. By June 1, RPR requirement of 100% of LSE allocated quantity of new vintage resources must be part of the LSE's contracted portfolio for 5 summer months (May through September), with accreditation based on marginal ELCC values.
    b. For T+1, LSEs will be required to show:
        i. By October 31, System RA Slice-of-Day 90% of Year-Ahead Obligation for 5 summer months (May through September), consistent with the adopted RA program,
        ii. By October 31, CPE Local RA at 100% for 12 months and 90% Flexible RA for 12 months, consistent with the adopted RA program,
        iii. By June 1 and December 1, 90% of LSE allocated quantity of new vintage resources must be part of the LSE's contracted portfolio for 5 summer months (May through September) based on marginal ELCC values for the applicable RCPPP year, and
        iv. In order to be shown in the 5 summer months as a new vintage resource, a 5-month contract for a Must-Offer Obligation in the CAISO must be shown via the pre-vetting

process (analogous to the RA supply plan process whereby generating resources submit supply plans to the CAISO).

c. For T+2, LSEs will be required to show:
    i. By October 31, System RA showing of Slice of Day 80% of 2-year ahead obligation for 5 summer months (May through September), based on a proposed future revision to the RA program to be vetted with the RA proceeding,
    ii. By October 31, CPE Local RA at 100% for 12 months for two-year ahead, consistent with the adopted RA program, and
    iii. By June 1 and December 1, 80% of LSE allocated quantity of new vintage resources must be part of the LSE's contracted portfolio for 5 summer months (May through September) based on marginal ELCC values for the applicable RCPPP year.
d. For T+3, LSEs will be required to show:
    i. By October 31, System RA showing of Slice of Day 70% of 3-year ahead for 5 summer months (May through September), based on a proposed future revision to the RA program to be vetted with the RA proceeding,
    ii. By October 31, RA Local showing by CPEs at 50%, consistent with the adopted RA program,
    iii. By October 31, RA Local showing at 50% by LSEs in the SDG&E TAC, and
    iv. By June 1 and December 1, 70% of LSE allocated quantity of new vintage resources must be part of the LSE's contracted portfolio for 5 summer months (May through September) based on marginal ELCC values for the applicable RCPPP year.
e. For T+4, LSEs will be required to show:
    i. Nothing under the RA Slice of Day framework, and
    ii. By June 1 and December 1, 60% of LSE allocated quantity of new vintage resources must be part of the LSE's contracted portfolio for 5 summer months (May through September) based on marginal ELCC values.

37. The above compliance filing requirements for Option II are summarized in Table 7.

Table 7. Summary of Requirements Per Compliance Year in Reliability Option II

June Milestone Showing	T+0	T+1	T+2	T+3	T+4
RA Slice-of-Day (October showing)	100% Month-Ahead	90% Year-Ahead for 5 summer months	80% 2 Year-Ahead for 5 summer months†	70% 3 Year-Ahead for 5 summer months †	N/A
RCPPP New Resource Requirements (May – September contracts)	100% online	90% contracted	80% contracted	70% contracted	60% contracted
Offtake Contract (for new resources)			✓	✓	✓

June Milestone Showing	T+0	T+1	T+2	T+3	T+4
Interconnection Agreement (for new resources)			✓		
Commercial Operations	✓				

✓ *Milestones required in each year T+n.*

* *Milestones required for current IRP procurement orders but are not being proposed for RCPPP.*

† Milestones needing consideration and adoption concurrently in the RA Proceeding based on a future Staff Proposal.

3.1.5 Enforcement

3.1.5.1 Financial Penalty Structure

38. The following financial penalties apply to reliability Option I and Option II. However, Option II also includes Resource Adequacy penalties for enforcement of additional years added in the multi-year RA extension, whereas Option I includes existing year-ahead and monthly RA penalties.

39. Each LSE will be subject to a deficiency penalty based on the extent to which its procurement for each compliance year does not meet the minimum volumes of its allocated reliability need, and an administrative penalty based on the lack of accuracy and timeliness of its compliance filing. The penalties will be assessed for each RCPPP year, and compliance status from a prior year will not have bearing positively or negatively on compliance in a future year. However, if there are deficiencies multiple years in a row, the deficiency penalty may increase.

40. Financial penalties will be on a rolling basis (*i.e.,* instead of issuing penalties covering 10 years for missing MWs all at once, the penalties will be issued annually). Using a rolling penalty, LSEs would be penalized for one year but could be penalized year after year for continuing to be deficient in procuring their RPR.

41. Staff will review compliance filings and notify deficient LSEs of non-compliance within 45 days after the filing date (*e.g.,* a July 15 notice for a June 1 compliance filing). LSEs will have a 30-day cure period from the Staff's notice to correct deficiencies related to their RPR.

42. For December and June compliance filings, an administrative penalty will apply to inaccurate and tardy filings (*e.g.,* errors in the filing and delays in meeting submission deadlines). There will be no deficiency penalty for December compliance filings. However, for June compliance filings, deficient LSEs will be subject to a deficiency penalty.

43. In both Option I and Option II, an administrative penalty will be issued for December and June compliance filings that are inaccurate or tardy, as described below.
    a. Administrative Penalty: A filing that is late or inaccurate and requires resubmission will be deemed an "incident." The administrative penalty will be $1,000 per incident, plus $500 per day for the first ten days the filing was late, and $1,000 for each day thereafter. Any delays in meeting the resubmission deadline will continue to incur late fees. Thus, a filing that is 5 days late would incur a $1,000 incident fee plus $2,500 ($500 per day for 5 days) for a total fine of $3,500. A filing that is 5 days late, requires resubmission, and is late 10 days for resubmission would incur $3,000 for 3 incidents (late filing, inaccurate filing, and late resubmittal) plus $10,000 in additional late fees ($500 per day for first 10 days, $1,000 per day for last 5 days).
    b. A waiver of the administrative penalty is not permitted.
    c. Deficiency Penalty: There is no deficiency penalty applicable to the accuracy and timeliness of compliance filings.

44. The following penalties are applicable for contracting sufficiency.
    a. In Option I, which assesses contracting sufficiency in years T+2 through T+4, and in Option II, which assesses contracting sufficiency for new-only procurement in years T+0 through T+4, the following penalties apply to June compliance filings:
        i. Deficiency Penalty: One-half of the net cost of new entry (CONE). The current estimated net CONE is $15 per kW-month, meaning that the deficiency penalty would be $7.50 per kW-month.
        ii. If deficiencies are cured within 30 days after receiving notice of noncompliance, then the deficiency penalty will be waived. However, curing deficiencies within 30 days after notice will not waive the administrative penalty (*i.e.,* an LSE will receive an administrative penalty for late filing if they cure during the 30-day cure period).
        iii. If an LSE incurs any deficiency penalty for contracting sufficiency (*i.e.,* not cured) for three consecutive years, then the deficiency penalty for contracting sufficiency in the fourth year will be twice the net CONE (*e.g.,* $30 per kW-month).
    b. In Option II, contracting sufficiency for years T+0 through T+3 will also be assessed via the proposed multi-year RA program for Slice of Day obligation, based upon the current RA penalty structure.

45. The following penalties are applicable for online sufficiency.
    a. In Option I, online sufficiency will be determined by assessment of the Slice of Day requirements by the RA program and will be subject to RA program penalties. An LSE does not necessarily need to procure new resources, and if new resources are procured/contracted and shown in compliance filings for T+2, T+3, and T+4, then there are no penalties for those resources not materializing; instead, the RA program's assessment of sufficiency is the basis for determining compliance.
    b. In Option II, RCPPP will assess online sufficiency for the new-only procurement. LSEs can swap resources in or out of their portfolio so long as each showing includes a sufficient

quantity of new vintage marginal ELCC MWs consistent with their RPR. Option II will assess new-only procurement for online sufficiency as follows:

i. Deficiency Penalty: The net cost of new entry (CONE). The current estimated CONE is $15 per kW-month.
ii. If deficiencies are cured within 30 days after receiving notice of noncompliance, then the deficiency penalty will be waived. However, curing deficiencies within 30 days after notice will not waive the administrative penalty (*i.e.,* an LSE will receive an administrative penalty for late filing if they cure during the 30-day cure period).
iii. If an LSE incurs any deficiency penalty for online sufficiency (*i.e.,* not cured) for three consecutive years, then the deficiency penalty for online sufficiency in the fourth year will be twice the net CONE (*e.g.,* $30 per kW-month).

46. Financial penalties will be imposed via citations issued consistent with an established citation program. Staff will prepare and finalize a citation program via Resolution consistent with this proposal once the CPUC adopts a decision on RCPPP. Penalties will be payable by LSEs upon citation issuance by the CPUC and will be paid into the State's General Fund.

47. The above enforcement penalties are summarized in Table 8.

Table 8. Summary of Finanical Penalties for Deficient LSEs

RCPPP Reliability Enforcement	Assessment	Administrative Penalty	Deficiency Penalty
Contracting Sufficiency for Option I and Option II	Once per year, based on June filing	N/A	0.50 x net CONE (*e.g.,* $7.50/kW-month). Waived if cured within 30 days after notice.
Online Sufficiency for Option II (New Procurement Only)	Once per year, based on June filing	N/A	1 x net CONE (*e.g.,* $15/kW-month). Waived if cured within 30 days after notice.
Accuracy and Timeliness for Option I and II	Twice per year, based on December and June filings	$1,000 per incident + $500 per day for first 10 days of late filing (increased to $1,000 for each day late thereafter)	Curing a deficiency may be subject to an Administrative Penalty if filed late and filed inaccurately.

3.1.5.2 Initial Implementation of Financial Penalties

48. Enforcement will be phased in across four years and will include a gradual implementation of financial penalties as RCPPP becomes a binding, fully in-effect program. Years in which financial penalties are not imposed on deficient LSEs will be deemed test years for the purposes of compliance and enforcement.

49. In the first year of RCPPP, T+0 through T+3 will be test years, while T+4 will be a penalty year for contracting sufficiency.

50. In the second year of RCPPP, T+0 through T+2 will be test years, while T+3 and T+4 will be penalty years for contracting sufficiency.

51. In the third year of RCPPP, T+0 will be a test year, while T+1 through T+4 will be penalty years for contracting sufficiency.

52. In the fourth year of RCPPP, all years T+0 through T+4 will be subject to penalties. T+0 will be subject to a penalty for online sufficiency, while T+1 through T+4 will be subject to penalties for contracting sufficiency.

53. The phasing-in of penalties for reliability procurement are summarized in Table 9.

Table 9. Initial Implementation and Phase-In of RCPPP Reliability Deficiency Penalties[17]

		Calendar Year of Procurement Obligations				
RCPPP Year	**Final Filing**	**T+0**	**T+1**	**T+2**	**T+3**	**T+4**
2026-2027	June 2027	2027	2028	2029	2030	2031
2027-2028	June 2028	2028	2029	2030	2031	2032
2028-2029	June 2029	2029	2030	2031	2032	2033
2029-2030	June 2030	2030	2031	2032	2033	2034

Legend

Test year (no deficiency penalty)
Penalty for deficient contracting sufficiency
Penalty for deficient online sufficiency

[17] Table 9 illustrates the phase-in of deficiency penalties for contracting sufficiency and online sufficiency for June compliance filings during the initial implementation of RCPPP. It does not include the administrative penalty for accuracy and timeliness of filings, which applies to both June and December compliance filings.

54. Any resources used as part of T+0 compliance must be online. If a contracted resource comes online in advance of T+0, it can be shown in compliance filings to avoid a contracting sufficiency penalty. In other words, an LSE will not be penalized for contracting sufficiency if a contracted resource is online prior to T+0.

55. While the above phase-in of penalties relates only to contracting and online sufficiency as assessed in annual June compliance filings, there will also be an administrative penalty for accuracy and timeliness of filings, which applies to both December and June compliance filings. Administrative penalties will not be assessed in December 2026 for the 2026-2027 RCPPP year; however, administrative penalties will be assessed starting in June 2027 and all RCPPP filings thereafter.

3.1.6 Considerations on RCPPP Reliability Framework

3.1.6.1 Similarities and Differences Between Option I and Option II

While Options I and II have similarities, they also have notable differences, as summarized below.

1. **Scope.** Option I applies to both new and existing resources, whereas Option II applies to new resources only for reliability procurement but includes expanded multi-year RA that will need to be concurrently adopted and implemented in consultation with the RA proceeding. Option I therefore relies on existing and new resources competing against one another for LSE compliance to determine market entry for new resources and influence generators' decisions about retention or market exit for existing resources. LSE compliance can be attained, theoretically, without contracting for any new or recently online resources, but LSEs are still subject to RA and RPS obligations that may drive new procurement. Option II focuses on ensuring sufficient new resource entry (and retention of new resources) based on Staff's projection of existing resource retirements while using an extended multi-year system RA program for enhancing the contracting for, and retention of, existing resources that are assumed to remain online in the need determination analysis.

2. **Need Determination.** In both Option I and Option II, Staff will determine need using a reliability standard of 0.1 LOLE on a 10-year forward basis. A buffer of 2.5% will be applied to the initial Reliability Procurement Need (RPN) to determine the final RPN. Further, Option II contains a resource vintage definition: "Existing vintage resources" are defined as those that came online more than 10 years before the compliance year and that are still expected to be online in the compliance year, whereas "new vintage resources" are defined as those that came online or will come online no more than 10 years before the compliance year.

3. **Need Allocation.** In both Option I and Option II, the need allocation methodology will use hourly LSE-specific load forecasts and will allocate the need based on each LSE's pro-rata share of the

managed load during the critical hours found during the need determination analysis. Each LSE's allocated need is its Reliability Procurement Requirement (RPR). If the critical hours vary by year, then the LSE-specific portion may change by year. In Option I, the RPR is not delineated between new vs. existing resources and covers T+2 through T+4. In Option II, the RPR is the total new need and covers T+0 through T+4. For both options, LSEs will be given capacity credits for eligible new centrally procured resources. Both options include a Collective Capacity Reserve (CCR) ranging from 1.5% to 3%, which will be applied to the initial RPN and will be procured only by IOUs to ensure reliability in the event of delays in resource availability, unforeseen large changes to load forecasts, or other LSE failures. The IOUs will not face penalties for delays in the procurement of CCR resources, and cost recovery for these resources will be through the CAM.

4. **Compliance.** Both Options I and II ensure some level of forward-looking compliance. Option I compares marginal ELCC MW with the RPR, requiring 100% procurement for T+2, 75% procurement for T+3, and 50% procurement for T+4. The RA program would cover the month-ahead and year-ahead timeframes as it does currently, at 100% for T+0 and 90% for T+1. Option II compares marginal ELCC MW with new resources need share of the RPR, requiring 100% procurement of online resources for T+0, 90% procurement for T+1, 80% procurement for T+2, 70% procurement for T+3, and 60% procurement for T+4. The system RA program would require 100% of month-ahead need contracted for T+0, 90% of year-ahead for T+1, 80% of two-year-ahead for T+2, and 70% of three-year-ahead for T+3.

5. **Enforcement.** Both Option I and Option II have enforcement structures. However, Option II includes Resource Adequacy penalties for enforcement of additional years added in the multi-year RA extension, whereas Option I includes existing year-ahead and monthly RA penalties. For both options, the December and June compliance filings will be subject to an administrative penalty for inaccurate and late filings. June filings will additionally be subject to a deficiency penalty based on the extent to which an LSE's procurement is deficient and non-compliant. For Option I, contracting sufficiency will be assessed for penalties for years T+2 through T+4, with T+0 and T+1 penalized using the existing month-ahead and year-ahead RA penalty structure. Online sufficiency in Option I will be determined by assessment of the Slice of Day requirements by the RA program and will be subject to RA program penalties. For Option II, contracting sufficiency will be assessed for penalties via the proposed multi-year RA program for years T+0 through T+3. The new-only procurement in Option II will be assessed for T+0 through T+4 via RCPPP. RCPPP will only assess online sufficiency for Option II for new procurement. Table 8 summarizes the proposed financial penalties, and Table 9 summarizes the phasing-in and implementation of deficiency penalties.

3.1.6.2 Relationship to Resource Adequacy

Currently, procurement requirements occur through the RA program, the RPS program, and various proceedings related to specific procurement needs and demand-side resources, including demand response. In parallel with these procurement programs and directives, the CPUC's IRP process models optimal future

electricity resource portfolios to achieve state policy goals and also requires LSEs to submit long-term integrated resource plans demonstrating their intent to meet expected future obligations. However, these plans are not equivalent to procurement orders. Under the current practice, LSEs retain discretion in their actual procurement, except for the RA program, the RPS program, procurement ordered by the CPUC via IRP procurement orders, and IOU procurement subject to bundled procurement plan rules. By contrast, RCPPP is intended to create a programmatic approach to procurement, a notable change from the CPUC's current "order-by-order" approach, so that LSEs have a predictable expectation of their responsibility to procure new and existing resources. This programmatic structure ensures that LSEs follow through on procuring the resource attributes contained in their LSE IRP portfolios.

The RA program has functioned as a near-term compliance program with a one- to three-year time horizon and has primarily involved securing contracts with existing resources and ensuring that such resources are subject to a Must Offer Obligation in the CAISO market. The RA program allows not yet online resources to count in the year-ahead obligations, but not in the month-ahead showings. RCPPP is primarily needed for mid- and long-term planning, development, and procurement of new resources. The IRP planning process is sufficient for the 5- to 10-year planning horizon, but RCPPP is needed for the near- to mid-term horizon. It would be ideal to harmonize RA program and IRP approaches regarding need determination and resource counting related to reliability, which would minimize seams issues among near-, mid-, and long-term planning and procurement.

Option I's scope, like the RA program's, is both new and existing resources. This ensures sufficient contracting of new and existing resources across a longer time horizon and allows for direct competition between new and resources in LSE procurement further in time. This facilitates a market whereby it is up to LSEs to determine the level of new resource procurement versus existing resource procurement to undertake, subject to generator bid prices and each LSE's own policy preferences as well as its compliance with clean energy procurement requirements, including the GHG reduction requirements of RCPPP. To facilitate the ability for existing and new resources to directly compete and to ensure sufficient forward contracting for new entry when load growth or other factors require it, a requirement of 100% of existing and new resources is proposed for T+2. Since this 100% requirement is greater than the 90% requirement in the year-ahead RA program, it may require some LSEs to rebalance a portion of their portfolios as they come into the year-ahead and month-ahead RA timeframes, due to differences in load shifting, monthly versus annual need requirements, and other factors. However, through multi-year forward contracting, it will ensure there are sufficient existing and new resources online or in-development for all LSEs collectively to satisfy RA obligations, creating more certainty of sufficient capacity to meet month-ahead and year-ahead RA needs. The 100% for T+0 month-ahead RA obligation is where LSEs will be required to ensure their forward contracted new resources came online, since an LSE will face RA non-compliance penalties if those resources fail and if the LSE fails to procure sufficient replacement capacity by T+0.

Option II continues the historical CPUC approach to address reliability via new procurement needs via the LTPP and IRP processes while focusing the RA proceeding on retention of existing resources in an expanded timeframe. In doing so, a declining multi-year forward RA requirement is proposed through T+3, while the new resource requirement in RCPPP increases contracting from 60% for T+4 to 100% for T+0. While this

does not explicitly require showings for forward contracting of all the new resources likely needed for reliability, it does incent this by requiring LSEs to show 100% of their "new" resources alongside their T+0 RA showings. To alleviate the issues associated with getting a specific number of MWs in a single year, RCPPP allows for any new (or recently online) resources to count towards the requirement for a period of 10 years, which demonstrates that all LSEs share responsibility in continuing to build the future of the electric grid while providing for flexibility for LSEs to bring resources online as available.

3.1.6.3 Comparison of Marginal ELCC and Slice-of-Day Reliability Accounting Approaches

As explained previously above, Option I and Option II rely on the use of marginal ELCCs for need determination and resource accreditation, while the RA program would continue to use Slice of Day obligations as well as the RA program's adopted resource accreditation. A high-level summary of the differences between these two approaches is presented here for informational purposes.

The CPUC's RA program has utilized an approach to resource accreditation since its inception. In recognition that no single resource is "perfectly" available to serve load at every hour of the year, the RA program established Maximum Cumulative Capacity buckets to prevent over-reliance on use-limited resources in RA showings, and it utilized ELCC methodologies to limit the RA capacity counting value for wind and solar resources for many years. In partial recognition of the imprecision of these approaches that could lead to reliability issues in light of the changing resource mix, the CPUC has since established a 24 hour/day RA obligation, and likewise an hourly accounting framework, for resource accreditation.[18]

Marginal ELCCs represent the ability of a marginal resource's capacity to contribute to meeting reliability needs, which is based on its output during periods of system reliability stress or "critical hours." In this regard, the term "marginal" refers to the incremental reliability benefit of adding a small amount of capacity (or the reliability reduction of removing capacity) relative to the total CAISO portfolio. Marginal ELCCs measure the reliability contribution for all resource types by comparing them to a "perfect capacity" resource (*i.e.,* an always-available resource with no use limitations). This puts all resources (*e.g.,* renewables, storage, DR, dispatchable thermal, etc.) on a level playing field by capturing all the factors that impact their ability to meet reliability at the times needed by the system to avoid loss of load. This includes weather-driven output variability, dispatch or use limitations, storage charging sufficiency, forced and maintenance outages, and interactions with all other resources on the system during the specific simulated weather and load conditions when the system is at risk of load shedding across the multiple decades of simulated conditions. Marginal ELCC values represent a precise signal for the reliability impacts of market entry or exit and are therefore appropriate for use in RCPPP, which is focused on ensuring sufficient forward procurement, including for new reliability resources. ELCCs are proposed to be measured at an annual level, creating a single annual need and a single annual accreditation value for each resource type.

[18] For wind and solar, the hourly framework is referred to as the exceedance methodology.

In the marginal ELCC framework, the procurement need is assessed during the same critical hours as the resource accreditation by calculating the marginally accredited ELCC MW for a system that meets the 1-day-in-10-years LOLE standard. This need is functionally equivalent to the system load plus operating reserves served during critical hours for a portfolio at the reliability standard. LSE need allocation is done based on LSE load share during the critical hours.

System need, LSE need, and resource accreditation are all effectively measured during the same critical hours. This framework allows LSEs to hedge against future shifts in the timing of critical hours (which result in shifts in LSE need and resource ELCCs as the system load and resource mix evolves) by planning for a portfolio of resources that covers their load across all hours of the day. For instance, consider a scenario where critical hours are in the early-mid summer afternoons, as they were around 2010 in California. If they shift to the early evening, as they have in California since then, LSEs will need to ensure sufficient generation to meet load during the early evening. If they stretch out further as storage is added to the system, LSEs will need to meet load across a broader set of hours while recognizing the limits of short-duration resources in doing so. Therefore, while it allows LSEs the flexibility to adopt their own preferred compliance strategies, LSE noncompliance risk due to evolving system conditions will be minimized in the marginal ELCC planning framework if LSEs cover their load across multiple hours of the day during the months with reliability risk, which is similar to the intention behind the CPUC's Slice of Day adoption.

Slice of Day (SOD) divides each day in each month into hourly time slices to specifically evaluate how well an LSE's portfolio matches its load (plus an hourly reserve margin). This results in 12 x 24 (or 288) slices per year for which LSEs must show compliance. Under the 24-hour SOD analysis, each LSE must demonstrate sufficient capacity to satisfy its specific managed load profile, including an hourly planning reserve margin, in all 24 hours on CAISO's "worst day" in each month. The "worst day" is currently defined as the day of the month in the CEC's IEPR forecast that contains the hour with the highest coincident peak load forecast. The hourly planning reserve margin applied is calibrated to the CPUC's 0.1 days per year LOLE reliability standard. Resource counting varies by resource type, with renewable resources using a probability-based "exceedance" measurement to count their hourly output on the worst day each month. Firm resources use installed capacity-based counting, though the RA program is exploring the use of an "unforced capacity" (UCAP) method that would incorporate forced outages into a resource specific capacity valuation. Each LSE must also demonstrate energy charging sufficiency from their own resources for the storage counted in their portfolio. Under the SOD approach, resources are not accredited via a fungible common currency like ELCC or NQC MW, and their value is dependent upon the portfolio interactions within each LSE's portfolio.

In summary, the marginal ELCC planning method uses a probabilistic framework directly to require that LSEs ensure their share of system load can be served during the critical hours when the system is under reliability stress, with the resulting need determination, LSE allocation, and resource accreditation based on load and resource performance during critical hours of reliability risk. Like all approaches, the ELCC planning method can be sensitive to small changes in assumptions. The SOD approach focuses on ensuring that LSEs bring the necessary resources to meet their own needs on a specific set of modeled conditions each month of the year, using an hourly reserve margin to align the need with the CPUC's probabilistic reliability standard. Thus, marginal ELCC approach is focused on the system-level load and resource needs, while SOD is focused on

LSEs' own loads and resource needs. Marginal ELCCs are explicit about the hours of greatest system risk and build that into the accreditation method. SOD requires LSEs to meet their loads and resources across all hours, with the hardest slices for LSEs to collectively fill generally being those when the system faces greatest reliability risk. Both approaches are analytically sound, but optimizing for one approach or the other may yield slightly different procurement outcomes.

Using annual marginal ELCC accounting for RCPPP and monthly SOD for RA, as proposed in both Option I and Option II, allows the different features of the methodological approaches to complement one another, and taken together, they are likely to provide additional reliability value. A comparison of marginal ELCC and SOD accounting approaches, including the potential ways they can diverge, is summarized in Table 10.

Table 10. Comparison of Marginal ELCC and Slice-of-Day Analysis

Approach Component	Marginal ELCC	Slice of Day	Potential Reasons for Divergence
Need Determination	LOLP model determines Reliability Procurement Need to meet 1-day-in-10-year LOLE based on full probabilistic record	"Worst day" in each month per IEPR hourly forecast, plus an hourly reserve margin (tuned to provide sufficient resources to expect no more than a 1-day-in-10-year LOLE)	• Annual vs. monthly need • SOD hourly reserve margin adds need in non-stressed hours (impacting storage charging energy) • Load shape differences between the IEPR "worst day" versus the critical days of simulated weather conditions captured in LOLP modeling
Need Allocation	Allocated based on LSE load during the critical hours of loss of load risk hours	Based on individual LSE hourly load	• Marginal ELCC allocates based on loss of load risk hours, whereas SOD allocates need across all hours of the day • Functionally limited divergence, assuming LSE SOD hourly load forecasts are used for RCPPP allocation

Approach Component	Marginal ELCC	Slice of Day	Potential Reasons for Divergence
Resource Accreditation	LOLP model determines resource availability during critical hours of loss of load risk using marginal ELCC	Accreditation is endogenous to the SOD tool • Variable resources based on historical probability of exceedance • Storage dispatched to meet LSE load in SOD tool, subject to charging sufficiency from LSE's portfolio • Thermal/other uses installed capacity, with UCAP under consideration	• LOLE impact (in ELCC) versus alternative methods for each resource type in SOD create potential divergence • Averaged "exceedance" values vs. weather/load correlated renewable output in LOLP dataset • LSE-level vs. system level storage charging sufficiency • Thermal ICAP vs. ELCC • Import assumptions • Annual vs. monthly resource value

3.1.6.4 Bounding of Marginal ELCCs

Marginal ELCC values are determined through a series of steps: forecasting a resource portfolio, calculating loss of load risk periods using loss of load probability modeling, calculating and allocating reliability need during these periods, and then determining marginal ELCCs for resources during these critical periods. If these critical hours shift, then an LSE's need and its resources' ELCCs will also shift depending on load and resource output in the new critical hours.

Significant changes in marginal ELCCs over time can lead to fluctuations in investment signals, potentially causing uncertainty for LSEs in the market. As a result, it is worth considering whether bounds should be placed on the extent to which the marginal ELCCs that are used in resource accreditation for compliance purposes in Option I and Option II can change over time. The primary driver of marginal ELCC changes is resource portfolio changes, which shift the critical hours that drive marginal ELCC calculations. Additional factors include periodic updates to LOLP modeling inputs, such as load shapes, climate impacts, and new weather years modeled, as well as other updates to LOLP modeling methodologies (*e.g.,* renewable shapes, forced outage rates, import assumptions, etc.).

In this section, Staff describe the differences between bounded and unbounded marginal ELCCs. In Section 5.1.3 of this paper, Staff invites comments from stakeholders on the advantages and disadvantages of bounded versus unbounded marginal ELCCs. As a point of reference, the system RA program has been using average ELCC values for resource accreditation for many years (until transitioning to Slice of Day). Those ELCCs were never explicitly bounded for a given year; although prior ELCCs did remain in place until the next update, the next update was always performed for a subsequent year. Bounding ELCCs may be more relevant for an RCPPP program that is focused on procurement further in time, whereby changes to resources, loads, load shapes, or other factors may drive a change from prior forecasts of marginal ELCCs.

3.1.6.4.1 Unbounded Marginal ELCCs

Unbounded marginal ELCCs can change each year depending on changes to the underlying resource portfolio, load shapes, or other LOLP modeling inputs/methods. ELCC values can change across publications (*e.g.,* the ELCCs published in 2027 can be different than those published in 2025 even though they both contain compliance values for 2028 and 2029).

Unbounded marginal ELCCs can provide more accurate signals for system need but are subject to fluctuations that can make LSE planning and procurement investment subject to risk. In RCPPP, changes in marginal ELCCs for most resources are generally expected to be small in between compliance periods, which may obviate the need for placing bounds on the marginal ELCCs. Since marginal ELCCs for resource accreditation are provided to LSEs only up to T+4 (with later years published as indicative), annual changes are limited, as new resource additions are small relative to the total portfolio (*e.g.,* 500 MW differences in storage build will not meaningfully change ELCCs for a 15 GW battery storage portfolio). While planned additions may slightly shift, significant fluctuations are not expected due to the use of prior RCPPP filing data and LSE integrated resource plan information that is based on the same marginal ELCC accounting as RCPPP (*e.g.,* if 2,000 MW of storage was planned to be added, it is likely to shift by some number of MW but not drop to 0 MW).

Further, marginal ELCC changes may or may not impact RCPPP procurement positions, depending on whether an LSE covers all its load across all hours. LSEs that cover their load across all hours will be insulated from marginal ELCC changes, because as critical hours shift, these LSEs will see a reduction in some resource ELCCs but a corresponding reduction in procurement need and/or increase in other resource ELCCs. However, LSEs without broader load coverage may see more impactful shifts and therefore more compliance risks as ELCCs evolve over time. If marginal ELCCs are not bounded, the cost burden to manage this risk will generally be on LSEs that have insufficient resources to meet their load during the new critical hours.

3.1.6.4.2 Bounded Marginal ELCCs

Placing bounds on marginal ELCCs (*e.g.,* restricting changes to 5-10% annually and/or restricting changes between publications of ELCC values) may provide a less accurate investment signal, but it could mitigate the impact of unknown actions of other market participants or modeling input updates on an LSE's portfolio. Bounding ELCCs effectively socializes the risk of the impact of shifting scarcity periods on LSE capacity positions, instead of having LSEs manage that risk. If an LSE's resources are not properly compensated at their marginal value because they have been bounded, the difference must be subsidized by other LSEs. For example, if shifting risk periods results in a 500 MW gap for an LSE, but ELCC bounds only allowed for a

250 MW change, then the remaining 250 MW gap must be addressed through increased procurement by other LSEs that would have had their net need reduced by 250 MW.

3.1.6.4.3 Mitigating Risks to Marginal ELCC Changes

To manage risks associated with unbounded marginal ELCCs, several strategies could be employed. One approach could be to lock in marginal ELCCs one or two years in advance to provide LSEs with more certainty for short-term procurement. Further, similar to the current RA program, "secondary sales" in RCPPP allow LSEs to trade resources (*e.g.,* to account for load shifts, ELCC shifts, etc.) as a risk management tool. This dynamic will apply differently to Option I versus Option II. Trading will likely be easier in Option I because LSEs can trade existing resources with stable ELCCs (*e.g.,* gas plants), whereas in Option II, trading would have to occur for new resources in their development stage. Even with unbounded marginal ELCCs, the portfolio of resources that develops can diverge from the expected portfolio that was used to build the ELCC valuations, which could lead to some reliability risk. That risk can be partially mitigated via the proposed buffer of 2.5% to the RPN in RCPPP.

3.2 Greenhouse Gas Reduction

The CPUC's Integrated Resource Planning (IRP) process results in a CPUC-adopted Preferred System Plan (PSP) that establishes resource portfolios and determines the overall amount of clean energy resources needed to meet the CPUC's electric sector GHG target. Consistent with Staff's reliability proposals that divide reliability needs in capacity across LSEs, in this section, Staff proposes translating the CPUC's GHG targets for the entire resource portfolio into individual LSE obligations and actionable metrics for jurisdictional LSEs.

In considering the GHG reduction aspect of RCPPP, Staff considered the Clean Energy Standard (CES) and mass-based approaches included in the *Staff Options Paper* and party comments on those topics. Staff also acknowledges that other approaches to GHG reduction in RCPPP are possible and worth considering as well. Creating a new GHG reduction framework such as CES could be a large administrative undertaking and may add a new layer of complexity, and its impacts and costs must be carefully considered. An alternative approach could be to enhance existing processes so that each LSE procures clean resources according to the resource types identified in its IRP plan and to ensure these existing requirements are appropriately enforced.[19]

Below, Staff describe an option of using a CES accounting system aligned with GHG reduction goals. Stakeholders are encouraged to comment on Staff's CES proposal and on whether alternative approaches to GHG reductions in RCPPP should be considered, including whether to continue to use existing RPS, IRP and RA processes, which have already resulted in significant GHG reductions. Since comments on the *Staff Options Paper* are already in the record in R.20-05-003, Staff recommends stakeholders not to restate their previously filed comments but to add additional information into the record. If stakeholders propose

[19] The 2022 *Staff Options Paper* contains additional detail on potential approaches to GHG reductions in RCPPP.

alternative approaches to GHG reductions, please explain why an alternative approach is preferred over existing processes or a CES approach.

In Staff's proposed CES option, the CPUC would establish an annual clean energy target as a percentage of retail sales for LSEs (*i.e.,* total clean energy divided by total energy), and compliance would be assessed in backwards-looking three-year compliance periods aligned with RPS compliance periods. The percentage target would be the same for each LSE during each compliance period, and the target would not vary by LSE type or pre-existing position. The annual CES targets would be set based on the amount of clean energy needed to meet the electric sector GHG target for CPUC jurisdictional entities, as determined in the IRP process, divided by the total energy consumed. At a minimum, these targets must achieve the clean energy goals of SB 1020 (Laird, 2022) and SB 100 (De León, 2018)—*i.e.,* 90%, 95%, and 100% of retail sales supplied by eligible renewable and zero-carbon resources by 2035, 2040, and 2045, respectively. The CES would be the method by which the RPS and zero-carbon resource goals in SB 100 and SB 1020 are incorporated into RCPPP.

Staff's proposed CES option is aligned with the existing RPS program, as LSEs would need to demonstrate that they contracted for a steadily increasing quantity of clean energy sufficient to meet their CES target, and LSEs can count megawatt-hours that generate eligible Renewable Energy Credits (RECs) within three-year compliance periods toward meeting their targets. LSEs would be required to procure contracts with eligible resources, which include both RPS-eligible resources and a broader set of GHG-free resources that generate eligible Zero-Emission Credits (ZECs). The main difference between resource eligibility for the RPS program and RCPPP's CES option is that ZECs can include all GHG-free resources, as SB 100 explicitly added non-RPS eligible zero-carbon resources to its 2045 policy goal of serving retail loads with 100% RPS and zero-carbon generation.

The CES compliance periods in RCPPP would match the current three-year RPS compliance periods. Binding CES targets would be set at the beginning of the previous compliance period, and provisional targets for two compliance periods ahead would also be released, spanning 12 years in total. CES targets subject to compliance obligations can be adjusted as needed in each subsequent IRP cycle if the adopted IRP portfolio finds that different CES amounts are needed to achieve the GHG target. The CES option is further developed here over a mass-based approach because unlike a mass-based approach it 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 (CARB) cap-and-trade program.

3.2.1 Timeline for GHG Reduction Procurement

The following general timeline and schedule could be applicable in Staff's CES proposal:

- **Need Determination.** A binding Clean Energy Standard percentage would be set in February three years prior to the start of next compliance period. In other words, if T+0 is the start of the next compliance period, then the CES percentage would be issued in February of T-3 and would be binding

for T+0 through T+2, with non-binding, indicative CES percentages provided for T+3 through T+11. The CES percentage would be based on the adopted IRP portfolio at the time of binding release in T-3. There would be one CES percentage applicable to each three-year compliance period.

- **Need Allocation.** Each LSE's CES target would be the same as the percentage target set in need determination stage, with each LSEs need being defined as its annual retail electricity sales forecast multiplied by the CES percentage requirement.
- **Compliance and Enforcement.** Each compliance period covers three years (*i.e.,* T+0 through T+2). Compliance would be based on a backwards-looking review of the RECs and ZECs by reviewing the MWh credits retired during a compliance period to the total LSE compliance period MWh requirement. Deficient LSEs would be required to pay a penalty of $50/MWh for each MWh they are deficient within the compliance period.

The first CES compliance period would span 2028-2030 (with 2028 being T+0) and would align with the RPS CP 6. Due to the timing of release of this Staff Proposal, this compliance period would have a slightly different need determination schedule than future compliance periods, with the release of information in February of T-2 instead of February of T-3. The first compliance period (2028-2030) would have the following milestones:

- **Need Determination.** In February 2026, Staff would release the binding CES percentage for the compliance period of 2028-2030. In February 2028, Staff would release a binding CES percentage for RPS CP 7 (2031-2033). Indicative percentages would also be released for CP 8 (2034-2036) and CP 9 (2037-2039).
- **Need Allocation**. Each LSEs need would be defined as its annual retail electricity sales multiplied by the CES percentage requirement released in 2026.
- **Compliance Filings and Enforcement.** Annual progress reports would be made in August 2029, 2030, and 2031. LSEs would not be penalized until after the compliance period is over and their Final Compliance Report is submitted, following procurement verification. Compliance would be based on a backwards-looking review of the RECs and ZECs by reviewing the MWh credits retired during a compliance period to the total LSE compliance period MWh requirement. Deficient LSEs would be required to pay a penalty of $50/MWh for each MWh they are deficient within the compliance period.

The second CES compliance period, spanning 2031-2033 and aligning with the RPS CP 7, would consist of the following milestones, with 2031 being T+0. This compliance period would be more representative of the program in its mature stages.

- **Need Determination.** In February 2028, Staff would have released the binding CES percentage for the compliance period of 2031-2033. In February 2031, Staff would release a binding CES percentage for RPS CP 8 (2034-2036). Indicative percentages would also be released for CP 9 (2037-2039) and CP 10 (2040-2042).
- **Need Allocation**. Each LSEs need would be defined as its annual retail electricity sales multiplied by the CES percentage requirement released in 2028.
- **Compliance Filings and Enforcement.** Annual progress reports would be made in August 2032, 2033, and 2034. LSEs would not be penalized until after the compliance period is over and their Final

Compliance Report is submitted, following procurement verification. Compliance would be based on a backwards-looking review of the RECs and ZECs by reviewing the MWh credits retired during a compliance period to the total LSE compliance period MWh requirement. Deficient LSEs would be required to pay a penalty of $50/MWh for each MWh they are deficient within the compliance period.

3.2.2 Need Determination

1. Staff shall publish the details of a CES need determination methodology that uses capacity expansion and/or production cost modeling for a suitable CAISO system portfolio that meets the CPUC's electric sector GHG target set in the IRP planning track.

2. The need would be defined as the total GHGs allowable for the CPUC jurisdictional entities per year to set the total need as a percentage of the CES. The need would be defined in the form of a minimum annual CES percentage, applied per year, that is consistent to meet the electric sector GHG target. This percentage would be based on calculating annual CES-eligible generation relative to CAISO annual retail sales, modified for the CPUC jurisdictional entities.

3. The general steps to setting a CES target would be as follows:
   a. **Run capacity expansion modeling with a binding GHG target.** If LSE plans drive GHG target to not bind, Staff may consider whether planned additions should be removed so the target binds. If additions from LSE plans or economic additions drive GHGs lower than the target, then it is not feasible to derive the implied CES percentage from the target itself. If some LSEs choose to exceed their share of the GHG target in their LSE plans, driving the target not the bind, the CPUC may not want to force that obligation onto other LSEs.
   b. **Derive the annual achieved CES percentage.** In doing so, assumptions related to bank usage in capacity expansion modeling will be removed.

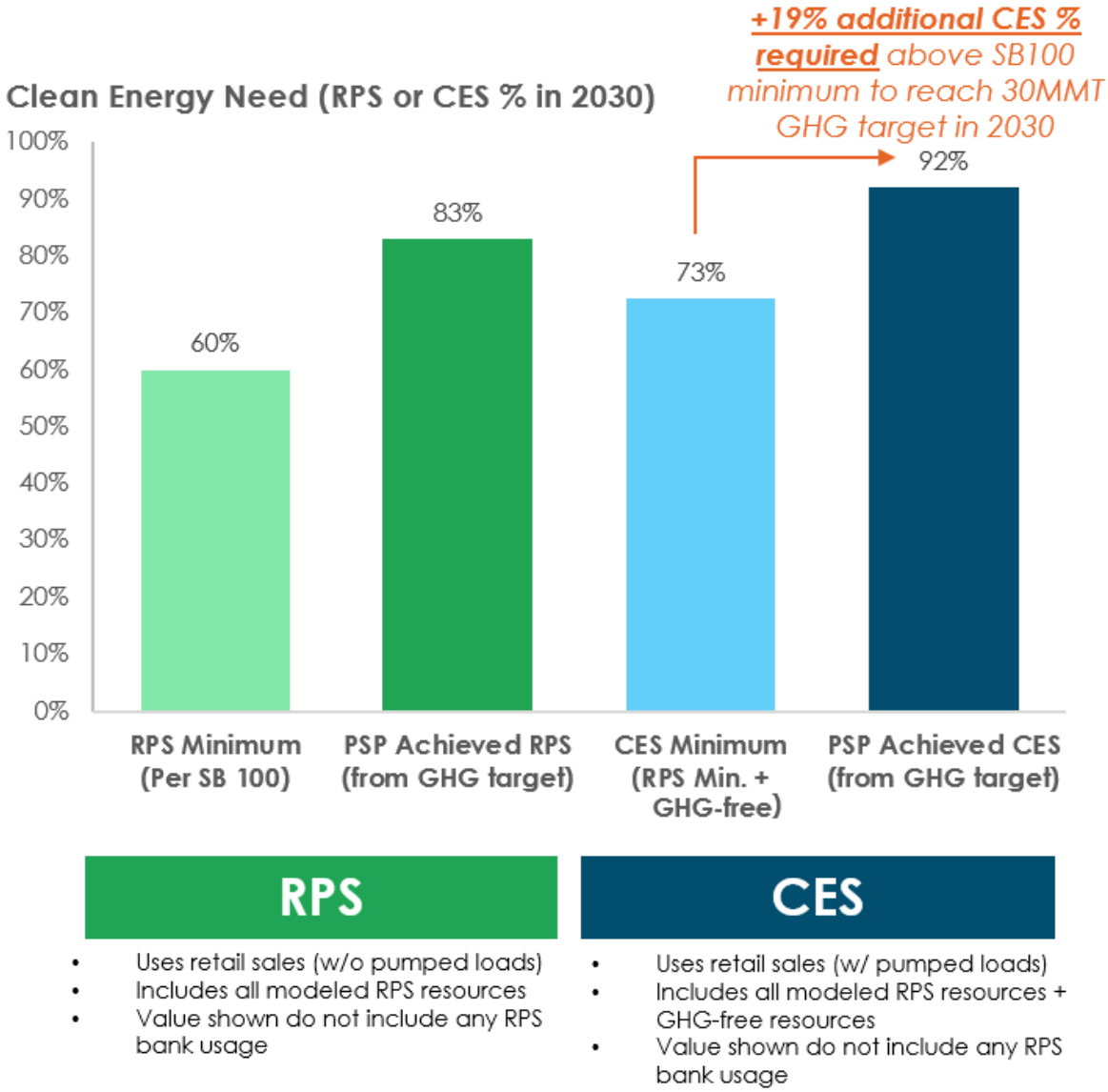
4. The CES would be defined in annual percentage targets, but compliance would be assessed on a three-year compliance period, aligned with the RPS program compliance periods, such that the CES would have a single target for all three years. The first compliance period would be aligned with RPS CP 6, which spans from 2028 to 2030. The subsequent compliance period would align with RPS CP 7, which spans from 2031 to 2033.

5. The CES targets would be defined as separate, albeit overlapping, requirements with the existing RPS program, which is statutorily required pursuant to Public Utilities Code § 399.13. The CES targets would be higher than the RPS program annual percentages because they would include additional non-RPS eligible, zero-carbon resource generation and because meeting the electric sector GHG goals likely requires exceeding the minimum statutory requirements of the RPS program.

6. As an illustrative example in Figure 4 below, a CES is derived from the 2025-2026 Transmission Planning Process (TPP) resource portfolio using RESOLVE capacity expansion modeling. In this example scenario, an additional 19% of CES is required to achieve a 30 MMT GHG target in 2030.

7. As another illustrative example, Staff has determined indicative CES percentages for 2028 through 2036, spanning three compliance periods. Using the 2025-2026 TPP base case portfolio, estimations of the indicative CES percentage targets are 87% for 2028-2030, 95% for 2031-2033, and 99% for 2034-2036.

Figure 4. Illustrative CES Using RESOLVE 2025-2026 TPP Results



3.2.3 Need Allocation

8. Need would be allocated to LSEs based on their energy retail sales forecasts published annually in the California Energy Commission IEPR's California Energy Demand load forecast.

9. LSE need would be based on their retail sales forecast multiplied by the annual CES percentage.

10. The same need allocation methodology used by RPS would also apply here, as LSEs would be required to match a percentage of their annual retail sales with renewable and/or zero-carbon

energy. The CES percentage increases as the electric sector's allowable GHG target decreases or as an LSE's load grows, driving an increased clean energy procurement requirement.

11. Each LSE's CES target would be the same as the percentage target set at the need determination stage, with each LSE's allocated need being defined as its annual retail electricity sales multiplied by the CES percentage.

3.2.4 Compliance

12. Compliance would be based on a backwards-looking review of renewable energy credits (RECs) and zero-emissions credits (ZECs) by evaluating the MWh credits retired during a compliance period to the total LSE compliance period MWh requirement.

13. Like RPS, years would be grouped into multi-year compliance periods (CPs), with compliance assessed at the CP level. Each CP would cover three years.

14. The CPUC also establishes annual procurement targets for each year within a CP. CES compliance, and subsequent enforcement action if needed, would be based on whether LSEs meet their multi-year CP requirements, as reported in their Final Compliance Report.

15. An LSE would be deemed compliant if it meets its CES target on average over the three-year compliance period. In other words, if an LSE falls short of its CES target in one year, it could still be compliant if its average achievement across the three-year compliance period meets its allocated CES target. Annual compliance reports in non-final years of three-year compliance periods and LSE achievement of non-final year annual procurement targets would be used to inform LSE compliance progress and provide an early indication of potential compliance issues.

16. Staff would work with the Western Renewable Energy Generation Information System (WREGIS) to develop tracking systems for ZECs to complement the existing registry for RECs.

17. All RECs and ZECs used for CES compliance would align with the IRP planning track's GHG accounting methodology and with how CARB regulates GHG emissions in its Mandatory Reporting Regulation (MRR) and GHG Emissions Inventory.

18. Staff 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.

19. The RPS program requires LSEs to procure 65% of their compliance obligation from long-term contracts, defined as contracts with terms of 10 or more years. The RCPPP would not add a long-term contract requirement to the CES; however, the RPS program's long-term contract would remain in place. By 2030, and for each compliance period thereafter, LSEs would need to meet

65% of their 60% RPS requirement through long-term contracts and will retain flexibility in how they source RECs and ZECs for the remainder of their RPS obligation and for their full CES obligation.

20. Staff would work to address additional key compliance considerations that may overlap with the RPS program to ensure alignment between the CES requirements and the RPS program, where appropriate.

21. The CES would not allow banking between compliance periods to ease administrative assessment of compliance.

22. By spring of 2026, Staff would provide LSEs binding CES annual allocations for CP 6, spanning 2028 through 2030. Indicative estimations for compliance periods 2031 through 2033 and 2034 through 2036 would also be published in the spring of 2026.

23. LSEs would also be required to submit annual progress compliance filings that report on prior actuals in a format to be developed by Staff.

24. By spring of 2026, Staff would publish a RCPPP citation program resolution consistent with this proposal to establish the compliance rules for the CES, including the need for administrative penalties in the event of late or erroneous filing of progress compliance filings.

25. While compliance checks for the CES would be backwards-looking, LSEs would be required in their Integrated Resource Plans and in their RPS Procurement Plans to show their planning progress towards meeting future RPS and CES obligations.

3.2.5 Enforcement

26. LSEs who do not comply accurately and timely to demonstrate their CES compliance requirements would be subject to CES administrative penalties. Penalties could not be assessed until after the completion of CP 6 (2028-2030).

27. LSEs who do not meet their CES compliance requirements on a MWh basis would be deemed deficient and would be subject to penalties.

28. As in the RPS program, deficient LSEs would be required to pay a penalty of $50/MWh for each MWh they are deficient within the three-year compliance period. LSEs would not be able to bank compliance between compliance periods because of the complexities of administrative accounting.

29. Financial penalties would be imposed via citations issued consistent with an established citation program. Penalties would be payable by LSEs upon citation issuance by the CPUC and would be paid into the State's General Fund.

30. In establishing a citation program, the CPUC can consider the conditions that would warrant granting a waiver from citations. For example, the CPUC could consider whether waivers for deficient LSEs are appropriate if compliance was prevented due to conditions beyond the LSE's control (*e.g.,* for the reasons detailed in PU Code § 399.15(b)(5)).

4. Relationship to Central Procurement

The determination and allocation of need in RCPPP raises the question of how to incorporate centrally procured resources, like historical IOU CAM, IOU DR, Local CPE[20], long lead-time (LLT) resources centrally procured by the Department of Water Resources (DWR), or other resources that the CPUC directs any entity it regulates to procure on behalf of all benefiting customers.[21] New centrally procured resources can be incorporated into RCPPP in one of two ways, either: (A) excluded from the need determination, with capacity credits later given to LSEs (similar to the existing CAM credit allocations in the RA program), or (B) included in the need determination, obviating the need for credits to be later given, because the LSE obligations would already be reduced by a lower overall need determination.

Staff proposes the former approach. LSEs will receive credits at the same time as their RCPPP filing obligation for any new eligible centrally procured resources. LSEs may show their credits of new centrally procured resources towards their RPR (*i.e.,* new centrally procured resources will be credited towards an LSE's allocated need). However, as previously described, LSEs will not receive credits for the Collective Capacity Reserve to be centrally procured by IOUs.

Staff notes that the CPUC recently issued a decision determining need for the central procurement of LLT resources by DWR pursuant to Assembly Bill (AB) 1373 (Stats. 2023, Ch.367). In D.24-08-064, issued August 29, 2024, the CPUC concluded that "CPE procurement should be kept in a separate category for purposes of consideration of an RCPPP" and that "RCPPP will incorporate into its framework how DWR procurement will be accounted for in future RCPPP need determinations."[22] The CPUC found that "it is logical to keep any CPE procurement as a result of this order separate and apart from any individual LSE requirements driven by the RCPPP" since "LSEs will not have control over the timing or the amount of CPE procurement[.]"[23] The CPUC also described two notable aspects of the relationship between RCPPP and DWR CPE: first, that the CPUC "expect[s] the RCPPP and its ultimate design not to have any bearing on CPE procurement requested in this decision, but it may influence future need determinations[,]"[24] and second, that "DWR procurement will have an impact on the ultimate requirements for LSEs developed through whatever form of an RCPPP is ultimately adopted by the Commission."[25] In other words, RCPPP will not affect DWR CPE or other eligible centrally procured resources, but the procurement of these resources will affect RCPPP.

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[20] For information on Local CPE, see 2024 CPUC Staff Report on the 2021-2023 Central Procurement Entity Framework.

[21] For information on the allocation of Capacity Allocation Mechanism (CAM) credits, see the CPUC's annual Resource Adequacy Reports at www.cpuc.ca.gov/ra. For example, the 2022 RA Report describes CAM allocations on pages 37-44.

[22] R.20-05-003, D.24-08-064, 83, ¶ 22.

[23] R.20-05-003, D.24-08-064, 52.

[24] R.20-05-003, D.24-08-064, 52

[25] R.20-05-003, D.24-08-064, 73.

Consistent with the above, Staff proposes to credit LSEs for new eligible centrally procured resources. This will allow for a more precise allocation of benefits to LSEs resulting from centrally procured resources, as compared to including those resources in the initial need determination. Table 11 summarizes the two general approaches for incorporating centrally procured resources into RCPPP, and Staff welcomes stakeholder comments on both approaches.

Table 11. Options for Incorporating Centrally Procured Resources into RCPPP

Option	Summary	Pros	Cons
A. Allocate centrally procured resources *after* RCPPP need determination	Allocate un-adjusted system-level reliability/GHG need to LSEs, then allocate/credit the reliability/GHG benefits of CPE LLT procurement. LSEs then show LLT resources in their RCPPP compliance showings.	• Avoids potential for double procurement • Allows more precise allocation of benefits using CPE cost allocation method[26]	• Requires backstop process to flow into RCPPP if LLT projects fail
B. Allocate centrally procured resources *before* RCPPP need determination	Reduce system-level reliability/GHG need due to CPE LLT procurement, then allocate reduced need to LSEs.	• Avoids potential for double procurement	• Requires backstop process to flow into RCPPP if LLT projects fail

[26] If RCPPP allocates GHG requirements based on energy and reliability requirements based on contributions to peak demand as proposed, then Option B would effectively use different methods for allocating the GHG vs. reliability benefits of CPE LLT procurement. Option A allows the CPUC to adjust the benefit allocation approach to ensure consistency with the cost allocation method. For example, if costs are allocated using CAM (as proposed), then Option A would allow allocation of benefits in RCPPP in the same manner (*i.e.,* based on contributions to peak demand, not energy needs).

5. Questions for Stakeholders

In this section, Staff poses the following questions for stakeholders to address in their written comments. Stakeholders are encouraged to respond to the questions below in detail to build a robust record in the proceeding. Staff respectfully requests that stakeholders **clearly identify the question numbers being answered** in their comments.

5.1 Reliability Questions

5.1.1 Reliability Option I vs. Option II

In Section 3.1, Staff proposed two options for addressing reliability procurement in RCPPP. Option I covers new and existing resources, whereas Option II covers new resources only with multi-year RA considerations for the retention of the remaining existing resources assumed to remain online. Despite their differences, both options include programmatic approaches to need determination, need allocation, compliance, and enforcement.

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.
2. Currently, Option I and Option II have not explicitly considered imports. How should imports be considered, if at all, in Option and Option II?
3. In what ways should Option I or Option II be modified prior to CPUC adoption? Are there relevant considerations that are currently not captured in both options?
4. How should Option I or Option II incentivize re-powers?
5. Should demand response count towards RCPPP compliance? If so, should it be included in Option I, Option II, or both?

5.1.2 Alternate Timelines for Reliability Procurement

In Section 3.1.1, Staff proposed a general timeline and schedule for reliability procurement in RCPPP. In the proposed timeline, Staff would issue a Reliability Procurement Need (*i.e.,* need determination) each February and a Reliability Procurement Requirement (*i.e.,* need allocation) for each LSE each April. In addition, LSEs would be required to make two compliance filings—a preliminary compliance filing in December and a final compliance filing in June of each RCPPP year. Enforcement penalties for deficient contracting and online sufficiency would be imposed based on the June compliance filing, while both December and June filings will be subject to an administrative penalty for inaccurate or late filings.

6. Is the proposed timeline for reliability procurement reasonable, or are there alternate timelines that should be considered?
7. Should compliance filings occur once or twice a year?

8. Should enforcement of contracting sufficiency occur once or twice a year?
9. Should enforcement of online sufficiency occur once or twice a year?

5.1.3 To Bound or Not to Bound?

In Section 3.1.6.4, Staff raised the question of whether it is appropriate for marginal ELCC values to be bounded to mitigate significant movement of marginal ELCC values year-to-year, and Staff invited comments from stakeholders on the advantages and disadvantages of bounded versus unbounded marginal ELCCs.

10. Should marginal ELCCs be bound? What are advantages or disadvantages to doing so, if any, in addition to those described in Section 3.1.6.4?
11. If marginal ELCCs are to be bound, should the degree of bounding differ between Option I and Option II?

5.1.4 Months of Forward Contracting

In Section 3.1.2, Staff recommended that need determination be based on a reliability standard of 0.1 LOLE for the five months of highest need for each of the next 10 years (*i.e.,* T+0 through T+9), which are most likely to be May, June, July, August, and September for the foreseeable future.

12. How many months, and which months, should forward contracts include to ensure reliability while minimizing costs if resources can sell to other non-CPUC jurisdictional LSE buyers in other months?

5.1.5 Buffer Percentage

In Section 3.1.2, Staff recommended the use of a buffer in calculating the Reliability Procurement Need. Procuring a buffer can lead to a system that is more reliable than the 0.1 LOLE standard. Specifically, Staff proposed a buffer of 2.5% to be applied to the initial RPN, resulting in the final RPN.

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?
15. Should the buffer apply to both Option I and Option II? Why or why not?
16. Should the buffer percentage differ between Option I and Option II? Why or why not?

5.1.6 CCR Percentage

In Section 3.1.3, Staff recommended a Collective Capacity Reserve (CCR) to be included in the need allocation of IOUs and to be centrally procured by IOUs, serving as a collective insurance against capacity deficiencies. Specifically, Staff proposed that while the CCR may change over time, it should be set between a minimum of 1.5% and a maximum of 3% of the initial RPN.

17. At what percentage should the CCR be set?

18. Is the range of 1.5% to 3% of the initial RPN appropriate? If not, what is an appropriate range?
19. Should the CCR percentage differ between Option I and Option II? Why or why not?

5.1.7 Incorporating Centrally Procured Resources

In Section 4, Staff presented two options for incorporating new eligible centrally procured resources, including DWR CPE pursuant to AB 1373 and D.24-08-064, into RCPPP. Staff recommended that LSEs receive capacity credits for eligible centrally procured resources as part of their need allocation (RPR), as opposed to incorporating centrally procured resources into the overall need determination (RPN).

20. Which option, as presented in Table 11, is better for incorporating new eligible centrally procured resources into RCPPP? What are additional pros and cons of each option?

5.2 GHG Reduction Questions

5.2.1 Approaches to GHG Reduction

In Section 3.2, Staff proposed a Clean Energy Standard (CES) option that translates the electric sector's GHG targets into individual LSE clean energy portfolio obligations and actionable metrics for jurisdictional LSEs. In other words, the CES targets would be set based on the amount of clean energy needed to meet the electric sector GHG target for CPUC jurisdictional entities, as determined in the IRP process. In Section 2.6, Staff explained why a CES was preferred to an hourly mass-based approach, which was presented as an option in the 2022 *Staff Options Paper*, and Staff also sought comments on whether alternative approaches—including the continuation and potential enhancement of existing processes—should be considered.

1. Should existing IRP and RPS processes be used or modified to achieve the electric sector's GHG emissions reduction goals instead of a new CES framework? If so, why?
2. Should the CPUC adopt the Clean Energy Standard and create Zero-Emission Credit (ZEC) instruments as proposed by Staff with or without modifications?
3. What considerations should be taken into account to ensure that all RECs and ZECs used for CES compliance would align with how CARB regulates GHG emissions in its Mandatory Reporting Regulation (MRR) and GHG Emissions Inventory?
4. Which zero-carbon resources should be eligible for the CES?
5. Are there alternative approaches to GHG reductions that should be considered and why?
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?

6. Conclusion

In this paper, Staff of the CPUC have presented proposals for the Reliable and Clean Power Procurement Program, applicable to all LSEs in the CPUC's jurisdiction. An evolution from the CPUC's current "order-by-order" approach to procurement, RCPPP is designed to satisfy principles of effectiveness, affordability, fairness, feasibility, and predictability by programmatically focusing on system reliability and GHG emissions reductions at least-cost, which are each structured around the key design elements of need determination, need allocation, compliance, and enforcement.

To address reliability, two options are proposed. Option I proposes using both new and existing resources, along with existing RA program requirements, to ensure sufficient contracting of either existing or new resources. Option I relies on existing and new resources competing against one another for LSE compliance to determine market entry for new resources and influence generators' decisions about retention or market exit for existing resources. By contrast, Option II focuses on ensuring sufficient new market entry based on Staff's projection of existing resource retirements while using an extended multi-year system RA program for the retention of the remaining existing resources assumed to remain online. Both options make a need determination termed the Reliability Procurement Need (RPN) for the next 10 calendar years (T+0 through T+9). In Option I, the RPN is the total need for new and existing resources. In Option II, the RPN is the total need for new resources only. In both options, the RPN is issued every February, and the allocation of the RPN to each individual LSE (*i.e.,* an LSE's Reliability Procurement Requirement (RPR)) is issued every April. In Option I, the RPR is binding for T+2 through T+4, with T+0 and T+1 covered by 100% month-ahead and 90% year-ahead RA requirements, respectively. In Option II, the RPR is binding for T+0 through T+4, with an expanded multi-year RA program covering T+0 through T+3. Both options will provide indicative information for years T+5 through T+9. Further, both options require compliance filings in December and June of each RCPPP year, with the June filings being the official milestone for measuring procurement compliance. The compliance requirements for Option I and Option II are summarized in Table 6 and Table 7, respectively. Finally, both options include enforcement penalties for contracting sufficiency, online sufficiency, and the accuracy and timeliness of compliance filings, as summarized in Table 8.

To address greenhouse gas emissions reductions, a Clean Energy Standard (CES) is proposed. This approach is aligned with the existing RPS program, as LSEs would need to demonstrate that they contracted for a steadily increasing quantity of clean energy sufficient to meet their CES percentage target. Each LSE's allocated need is their forecasted retail sales published in the IEPR multiplied by the CES percentage. LSEs will need to be compliant with their CES requirements across three-year compliance periods (*i.e.,* an LSE will be deemed compliant if the average of its achievements meets or exceeds its CES requirement for the three-year compliance period). Deficient, non-compliant LSEs will be required to pay a penalty of $50/MWh for each MWh they are deficient within the three-year compliance period. Stakeholders are encouraged to comment on whether alternative approaches to GHG reduction should also be considered (*e.g.,* requiring procurement of clean resources based on LSE IRP plans or other continuation of current approaches).

All proposals related to reliability and GHG reductions for RCPPP are summarized in Table 12 below.

Table 12. Summary of RCPPP Proposals

Component	Reliability		GHG Reduction
Option	**Option I** • RCPPP obligations for existing & new reliability need	**Option II** • Expanded multi-year RA program & new-only RCPPP obligation	**Clean Energy Standard (CES)**
Scope	• RCPPP: New & existing resources	• RA: new & existing resources • RCPPP: new vintage resources	• New & existing resources
Need Determination	• "Reliability Procurement Need" (RPN) based on accredited capacity to meet a loss of load expectation (LOLE) of one-day-in-ten-years (*i.e.,* 0.1 days per year) using marginal effective load carrying capability (ELCC) • Determined by calculating the marginal ELCC percentage of each resource class, multiplying it by the nameplate MW for each resource class, and adding up the total accredited ELCC MW of the portfolio. • Final RPN will include a 2.5% buffer.		• Annual energy-based CES aligned with electric sector GHG target
Need Allocation	• Divides the RPN into a "Reliability Procurement Requirement" (RPR) for each LSE using hourly LSE-specific load forecast (*i.e.,* allocates need based on each LSE's pro-rata share of load during critical hours). • Includes a 1.5% to 3% Collective Capacity Reserve to be collected by IOUs serving as a central procurement entity.		• LSE's annual retail sales forecast multiplied by CES percentage.
Compliance	Forward-looking using marginal ELCC versus RPN: • 100% for T+2, • 75% for T+3, and • 50% for T+4.	Forward-looking using marginal ELCC versus new resource need share of RPN: • 100% for T+0 • 90% for T+1 • 80% for T+2 • 70% for T+3 • 60% for T+4	• Three-year compliance periods. • Backward-looking using RECs and/or ZECs, annual target with 3-year compliance period that matches RPS compliance periods
Enforcement	Contracting Sufficiency: • Assessed for compliance years T+2 through T+4. • Deficiency Penalty: One-half of the net cost of new entry (CONE). The current estimated net CONE is $15	Contracting Sufficiency: • New-only procurement assessed for compliance years T+0 through T+4. • Deficiency Penalty: One-half of the net cost of new entry (CONE). The current estimated net CONE is $15 per kW-month, meaning that the	• Deficient LSEs will be required to pay a penalty of $50/MWh for each MWh they are deficient within the three-year compliance

Component	Reliability		GHG Reduction
	per kW-month, meaning that the Deficiency Penalty would be $7.50 per kW-month. • Administrative Penalty, as described below. Online Sufficiency: • Determined by assessment of the Slice of Day requirements by the RA program and will be subject to RA program penalties. • Administrative Penalty, as described below. Administrative Penalty: • Inaccurate and tardy compliance filings will be assessed at $1,000 per incident, plus $500 per day for the first ten days the filing was late, and $1,000 for each day thereafter.	Deficiency Penalty would be $7.50 per kW-month. • Years T+0 through T+3 will also be assessed via the proposed multi-year RA program for Slice of Day obligation, based upon current RA penalty structure. • Administrative Penalty, as described below. Online Sufficiency: • Administrative Penalty: $2,000 per MW. • Deficiency Penalty: The net cost of new entry (CONE). The current estimated CONE is $15 per kW-month. • Administrative Penalty, as described below. Administrative Penalty: • Inaccurate and tardy compliance filings will be assessed at $1,000 per incident, plus $500 per day for the first ten days the filing was late, and $1,000 for each day thereafter.	period.

Appendix: List of Acronyms

Acronym	Definition
ALJ	Administrative Law Judge
AB	Assembly Bill
CAISO	California Independent System Operator
CAM	Cost Allocation Mechanism
CARB	California Air Resources Board
CCA	Community Choice Aggregator
CCGT	Combined Cycle Gas Turbine
CEC	California Energy Commission
CES	Clean Energy Standard
CONE	Cost of New Entry
CP	Compliance Period
CPE	Central Procurement Entity
CPUC	California Public Utilities Commission
D.	Decision
DER	Distributed Energy Resource
DWR	Department of Water Resources
ELCC	Effective Load Carrying Capability
CCA	Community Choice Aggregator
CCR	Collective Capacity Reserve
GHG	Greenhouse Gas
GWh	Gigawatt-hour

Acronym	Definition
IEPR	Integrated Energy Policy Report
IOU	Investor-Owned Utility
IRP	Integrated Resource Planning
LOLE	Loss of Load Expectation
LOLP	Loss of Load Probability
LSE	Load-Serving Entity
LLT	Long-lead Time
LTPP	Long-Term Procurement Plan
MMT	Million Metric Tons
MOO	Must-Offer Obligation
MRD	Master Resource Database
MRR	Mandatory Reporting Regulation
MTR	Mid-Tern Reliability
MW	Megawatt
MWh	Megawatt-Hour
NQC	Net Qualifying Capacity
PSP	Preferred System Plan
PU	Public Utilities
R.	Rulemaking
RA	Resource Adequacy
RCPPP	Reliable Clean Power Procurement Program
RCPPP-CPE	Reliable Clean Power Procurement Program – Central Procurement Entity
RDT	Resource Data Template

Acronym	Definition
REC	Renewable Energy Credit
RPN	Reliability Procurement Need
RPR	Reliability Procurement Requirement
RPS	Renewables Portfolio Standard
TAC	Transmission Access Charge
TPD	Transmission Plan Deliverability
SB	Senate Bill
SOD	Slice-of-Day
UCAP	Unforced Capacity
WREGIS	Western Renewable Energy Generation Information System
ZEC	Zero-Emission Credit

-- END OF ATTACHMENT A --