Integrated Resource Planning Workshop: Reliable and Clean Power Procurement Program Staff Proposal

Energy Division

R.20-05-003

May 16, 2025

California Public Utilities Commission

1. Introduction

Purpose of Workshop

- On April 29, 2025, an *Administrative Law Judge's Ruling Seeking Comments on Reliable and Clean Power Procurement Program Staff Proposal* was issued in R.20-05-003.
- The ALJ Ruling includes the following attachments:
  - Attachment A – Staff Proposal
  - Attachment B – Slide Deck Summary of the Staff Proposal
  - Attachment C – Summary of Comments on 2022 Staff Options Paper
- The purpose of this workshop is to:
  - Familiarize stakeholders with the RCPPP Staff Proposal
  - Provide an opportunity for stakeholders to ask clarifying questions before submitting formal written comments.
    - Opening comments are due July 15, and reply comments are due August 5.

Logistics

- Workshop slides available at the Reliable and Clean Power Procurement Program (RCPPP) webpage.
- This workshop **will be recorded**, and the recording will be posted to the same webpage.

Clarifying Questions

- We invite clarifying questions using the "Q&A" feature of WebEx throughout the workshop.
  - Write your question in the "Q-and-A" box and direct it to “All Panelists”.
  - Staff will post the written log of Q&As.
- All attendees have been muted. At the end of the presentation, stakeholders may ask verbal clarifying questions.

Agenda

Topic	Timing	Presenter
1. Introduction	10 min	Nathan Barcic
2. Background & Objectives	5 min	Seina Soufiani
3. RCPPP Overview	10 min	Seina Soufiani
4. Reliability Procurement	90 min	Seina Soufiani
4.1 Marginal ELCCs and Critical Periods Framework		Aaron Burdick
4.2 Reliability Need Determination		Seina Soufiani
4.3 Reliability Need Allocation		Seina Soufiani
4.4 Reliability Compliance & Enforcement		Seina Soufiani
4.5 Summary of RCPPP Reliability Procurement		Seina Soufiani
Break	10 min	
5. GHG Reduction Procurement	30 min	Sierra Withers
5.1 CES Need Determination		Sierra Withers
5.2 CES Need Allocation		Sierra Withers
5.3 CES Compliance & Enforcement		Sierra Withers
5.4 Summary of RCPPP CES		Sierra Withers
6. Next Steps	1 min	Nathan Barcic
7. Verbal Questions		Nathan Barcic

2. Background & Objectives

Regulatory Context

- CPUC regulates California's electricity market via several approaches:
  - Resource Adequacy (RA) program
  - Integrated Resource Planning (IRP) process
  - Renewables Portfolio Standard (RPS) program
  - Demand-side proceedings (e.g., High DER, Demand Flexibility, Energy Efficiency, DR, etc.)
- Recent trends have changed the market fundamentals:
  - **Increased market fragmentation**, community choice aggregators (CCAs) are now serving a large portion of load and CCAs have different regulatory context than IOUs in a market previously dominated by three large investor-owner utilities (IOUs)
  - **Increased capacity market tightness** as aging, inefficient powerplants in California and neighboring states retire due to market and regulatory pressures
  - **Increasingly ambitious GHG-reduction goals**, such as those set forth in SB 350 and SB 100, require significant amounts of new clean energy resources. By 2030, LSEs will need to be procuring beyond their RPS targets to continue the trajectory necessary to meet these goals.

Procurement Background

- Prior to 2019, new resources were generally developed either through (1) CPUC orders for IOUs to procure new resources or (2) LSE-specific renewable energy contracting to comply with RPS requirements
- Since 2019, the IRP proceeding has ordered procurement on an "order-by-order" basis via Decisions (D.) 19-11-016, D.21-06-035, and D.23-02-040, requiring LSEs to procure to meet near-term and mid-term reliability needs.
  - D.19-11-016 ordered 3,300 MW
  - D.21-06-035 ordered 11,500 MW
  - D.23-02-040 ordered 4,000 MW

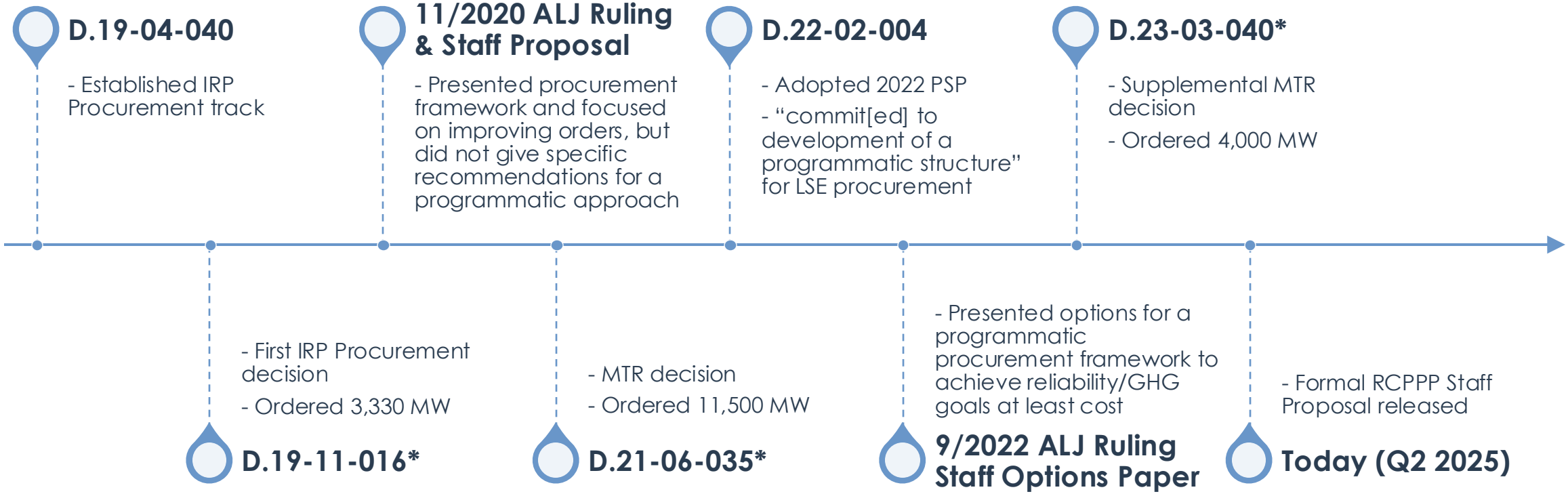
Procurement Challenges

- Challenges in the "order-by-order" approach worth considering:
  - It can be unpredictable for LSEs to some degree
  - It does not have an efficient mechanism for re-allocating requirements to load if there is load migration
  - It does not facilitate or reward proactive LSE self-provision of the needed resource attributes
  - It does not expressly address existing resource retention
- Other recent procurement challenges:
  - Multiple delays and extensions for new resources; cumbersome bridging resource process
  - Difficulty tracking procurement
  - IRP orders largely end after 2028
  - Backstop process for deficient LSEs lags long after procurement was needed

History of RCPPP Development

- The CPUC issued:
  - A Staff Proposal in November 2020 that discussed procurement in the context of the IRP cycle but did not give specific recommendations for a programmatic approach for procurement
  - A Staff Options Paper in September 2022 that described options for the design of a new procurement program to establish long-term requirements for LSEs.
- The current Staff Proposal is the most recent step in establishing a procurement program.
  - Named the "Reliable and Clean Power Procurement Program" (or RCPPP), this program covers the need for procurement to meet reliability and emissions reduction goals.
  - Staff has prepared a summary of party comments on the 2022 Staff Options Paper (Attachment C to the ALJ Ruling)
- Staff Proposal presents options in recognition that:
  - Multiple externalities exist that prevent LSEs from procuring resources optimally in the absence of regulatory intervention: reliability, GHG, financial risk, and barriers to large and/or long lead-time (LLT) resources.
  - There's a need to drive procurement at a scale required to meet SB100 goals and maintain reliability in the post-2028 timeframe.
  - Options should allow market participants to choose the best procurement to match their resource preferences and risk tolerance.

IRP Procurement & RCPPP History



* IRP Procurement Orders

3. RCPPP Overview

Reliable and Clean Power Procurement Program

- **Overall Goal:** create and administer a long-term procurement framework that, in combination with the RA and RPS programs, improves the process for LSEs to procure their share of the resources needed to meet electric system reliability and GHG-reduction goals at least-cost.
  - **Reliability:** Two options proposed: Option I and Option II, both of which include explicit linkages with RA and create a long-term, and predictable program for LSEs to proactively procure their share of resources for meeting reliability.
  - **GHG Reduction:** The Clean Energy Standard (CES) is one option that includes explicit linkage with RPS and could potentially create a long-term, and predictable program for LSEs to proactively procure their share of clean resources. Staff Proposal asks stakeholders whether existing process could be used instead, or if there are alternative approaches.
- Impacts all CPUC-jurisdictional LSEs (IOUs, CCAs, and ESPs) in the California Independent System Operator (CAISO) region, but not small and multi-jurisdictional IOUs outside the CAISO. No impact on POUs.
- Consistent with statutory requirements, including SB 350, SB 100, SB 1020, and AB 1373.*
- If program were adopted, it would phase in as MTR orders roll off in 2028 and beyond.

* AB 1373 (Garcia, 2023) amended 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. It 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."

Program Design Principles

Effectiveness	• Program effectively supports the maintenance of existing 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 administered for compliance and enforcement by the CPUC in an efficient manner.
Predictability	• Program supports greater predictability around generator investment decisions.

Fundamental Elements of RCPPP

The following key elements apply to the reliability and GHG reduction portions of RCPPP:

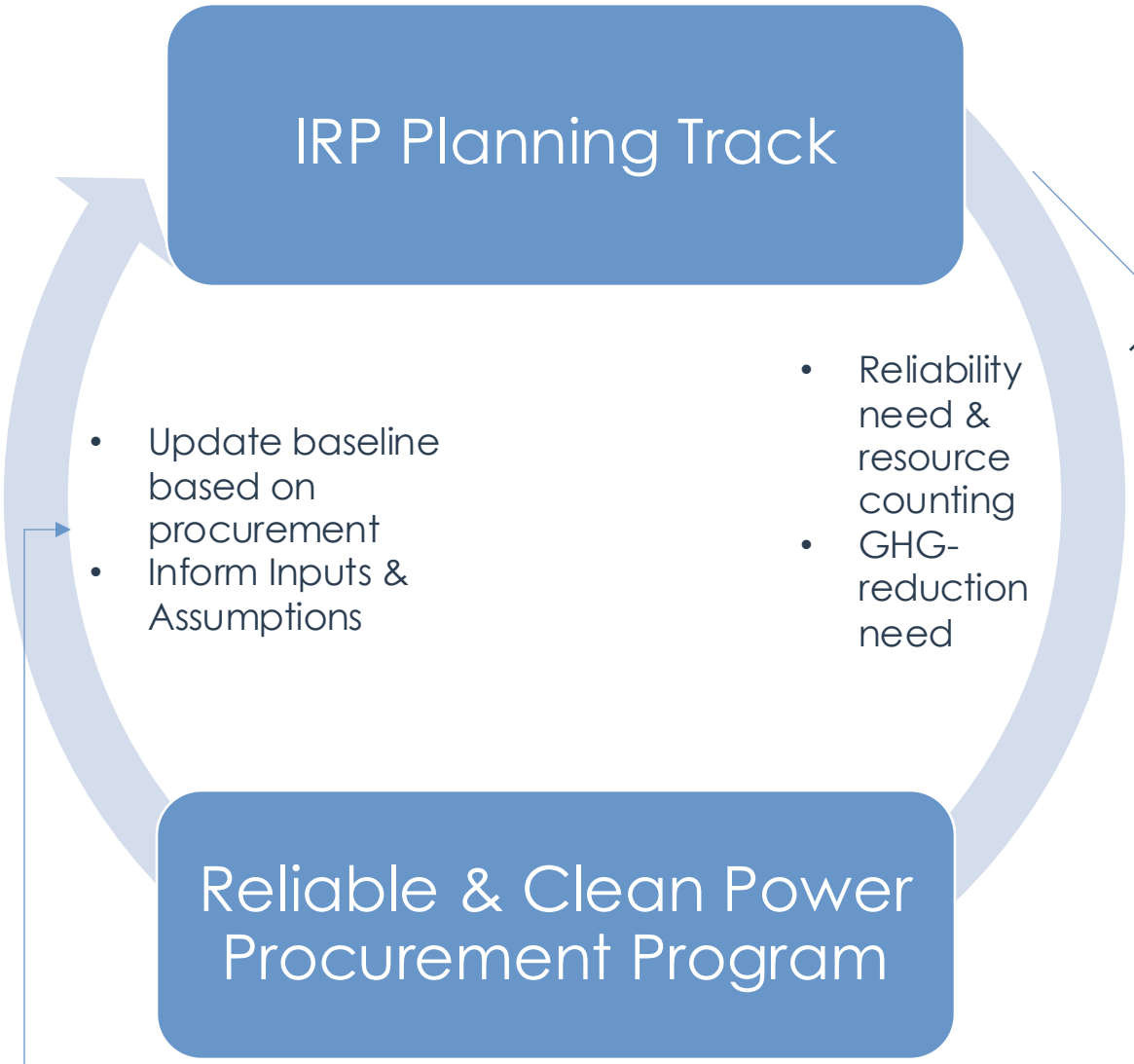
1. **Need Determination**: technical analysis to specify the needed quantities of resource attributes over a specified period

2. **Need Allocation**: specifying what quantities of the required resource attributes each LSE should be required to procure

3. **Compliance**: LSE data filing requirements and resource counting metrics that allow for monitoring of compliance with procurement obligations

4. **Enforcement**: Financial penalties to address an LSE's failure to meet its procurement obligations

IRP Planning Track & Procurement Program Interaction



If resource-specific need found

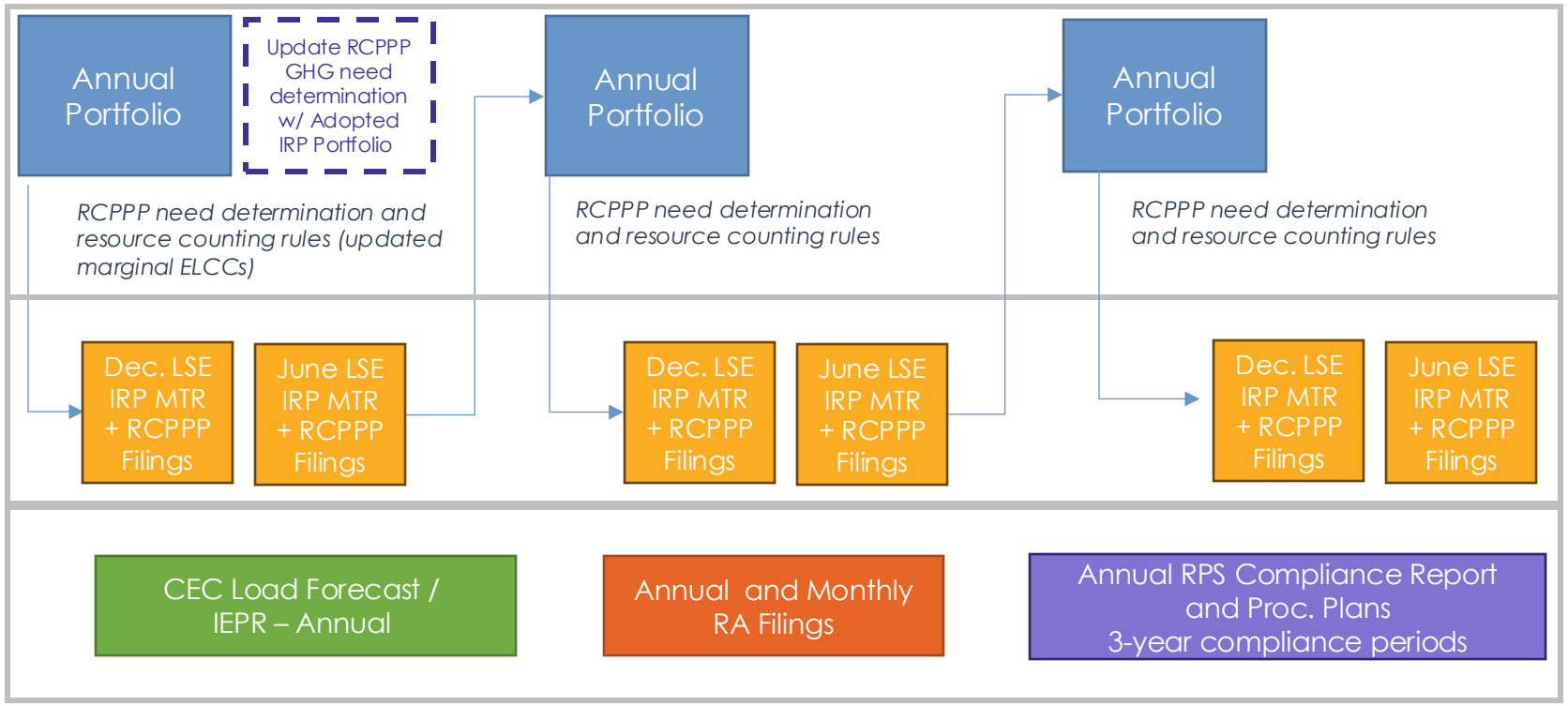
Procurement Orders* (as needed)

- New program would draw from reliability and GHG findings in the IRP planning track on a regular basis
- Procurement orders may also be needed to meet SB 100 objectives

* Procurement orders are "point-in-time" actions by the CPUC (*e.g.,* D.19-11-016, D.21-06-035, and D.23-02-040), as opposed to a more programmatic approach which sets ongoing, rolling procurement requirements for LSEs

Interactions Among RCPPP, IRP Planning Track, and Other Proceedings

- Proposed RCPPP comprises of various elements in the IRP cycle:



Planning track focuses on long-term portfolio + transmission planning

Latest system portfolio used to forecast reliability need + resource counting

LSE compliance filings can provide an update to the "baseline" which feeds back into the planning track.

RCPPP rules and timing of LSE filings coordinated with other proceedings (CEC IEPR, CPUC RA, CPUC RPS, etc.)

4. Reliability Procurement

4.1 Marginal ELCCs and Critical Periods Framework

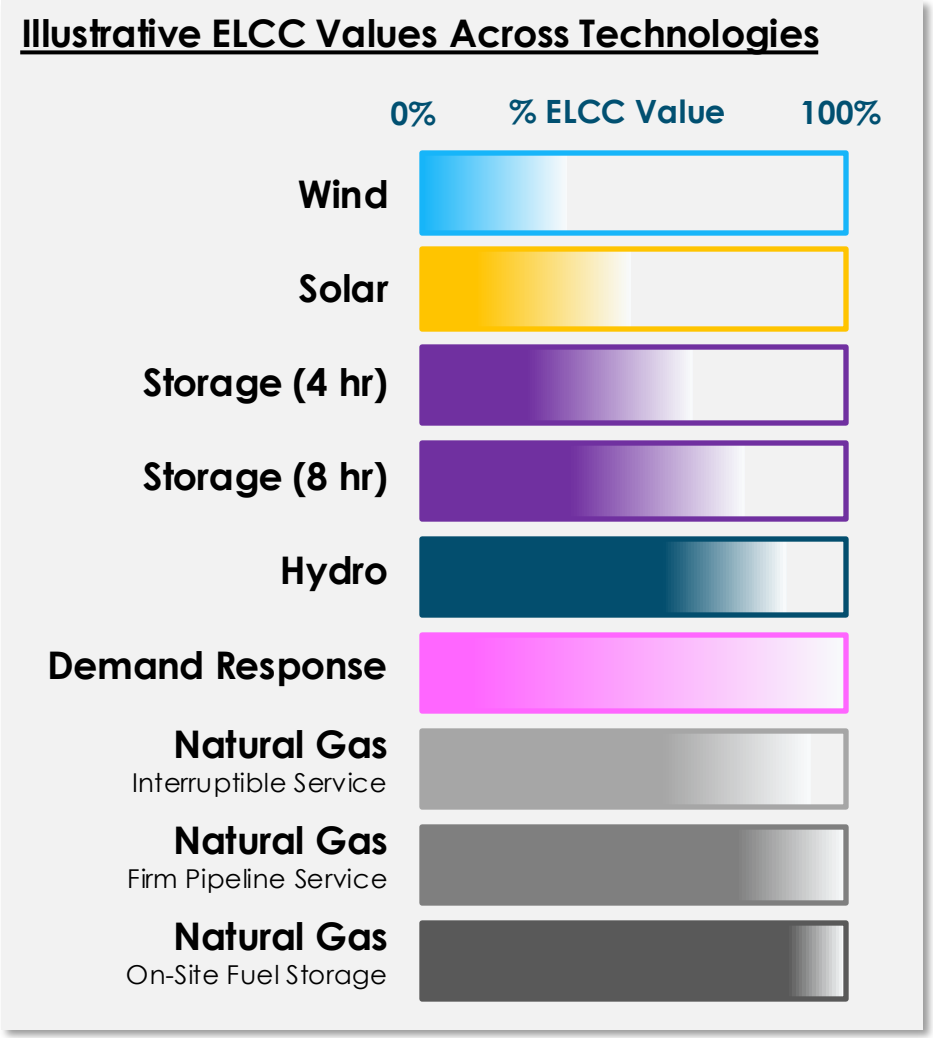
Rationale for Proposed Reliability Design

- 2022 Staff Options Paper presented various possible approaches:
  - Marginal ELCCs, average ELCCs, Slice-of-Day, and firm energy contracting.
- Staff Proposal includes two reliability procurement options which:
  - Use marginal ELCCs for determining and allocating IRP-related need, and
  - Co-exist with the RA Slice of Day program to varying degrees.
- Key Rationale: Marginal ELCCs chosen because they are:
  - Effective in signalling resources necessary to meet specified loss of load expectation (i.e., the calculation of marginal ELCCs is a derivation of the calculation of LOLE).
  - Most aligned with principles of economic efficiency by valuing resources based on their marginal value to the market.
  - Already used for new procurement valuation within the IRP and RPS programs to ensure economically efficient marginal resource decisions are made.

No Resource is "Perfect"

Marginal ELCC creates a level playing field by measuring all resources against perfect capacity

- Can account for all factors that can limit availability:
  - Hourly variability in output
  - Duration and/or use limitations
  - Seasonal temperature derates
  - Energy availability
  - Fuel availability
  - Temperature-related outage rates
  - Correlated outage risk
- While ELCCs are as a % of nameplate capacity, their calculation in SERVM includes both capacity and energy constraints.



Key Elements of the Critical Periods Framework Proposed for RCPPP

1. Determine Total Reliability Need (TRN) based on quantity of equivalent perfect capacity needed to meet the specified reliability standard, and calibrate LOLP model of the power system to meet TRN.

2. Determine Marginal ELCCs of individual resource types based on their marginal contribution toward the TRN, or equivalently their expected performance during Critical Periods.

3. Determine Reliability Procurement Need (RPN) as the sum of Marginal ELCCs of individual resources in a "tuned" portfolio, or equivalently to the expected load + operating reserves served during Critical Periods.

4. Allocate RPN (+ buffer) to Load-Serving Entities based on their expected contribution to the need for capacity, i.e., their expected load during Critical Periods.
    1. Option I: LSEs are allocated share of all resources (existing + new) to meet system need (+ buffer)
    2. Option II: LSEs are allocated share of new resources to meet system need (+ buffer), equivalent to all resources minus existing resources > than 10 years old

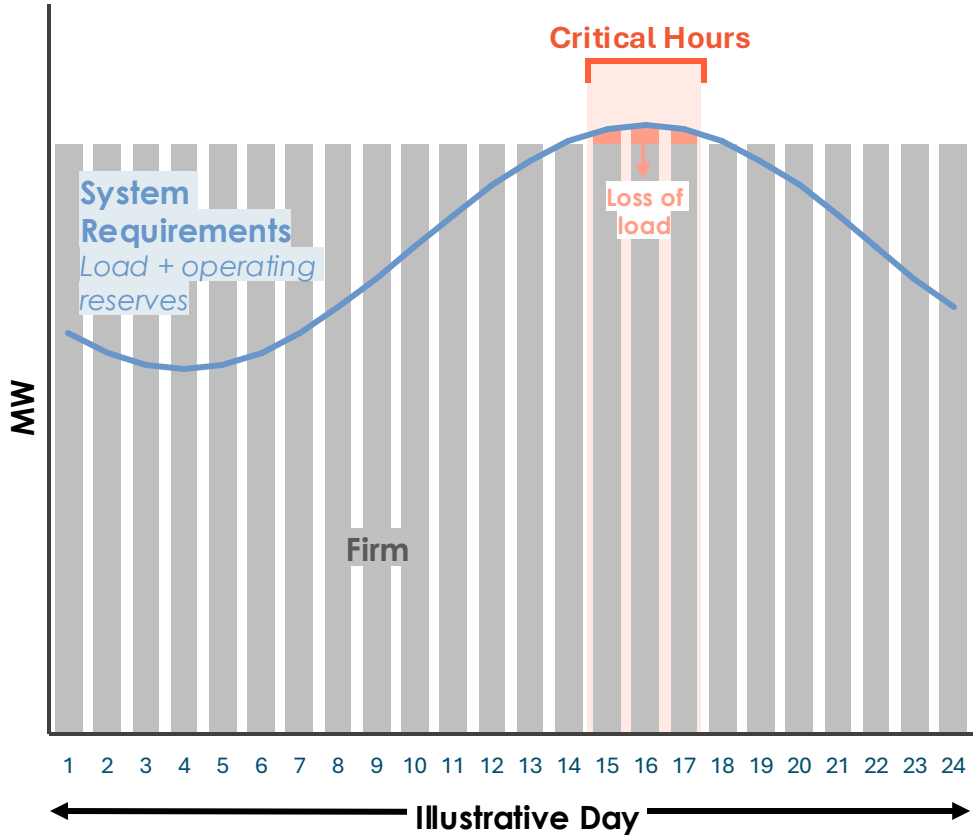
CPUC IRP use case(s):
- **RESOLVE long-term system optimization** (paired with ELCC curves + surfaces)

Not portfolio dependent

CPUC IRP use case(s):
- **RCPPP reliability need and resource counting**
- **LSE IRP reliability need and resource counting**

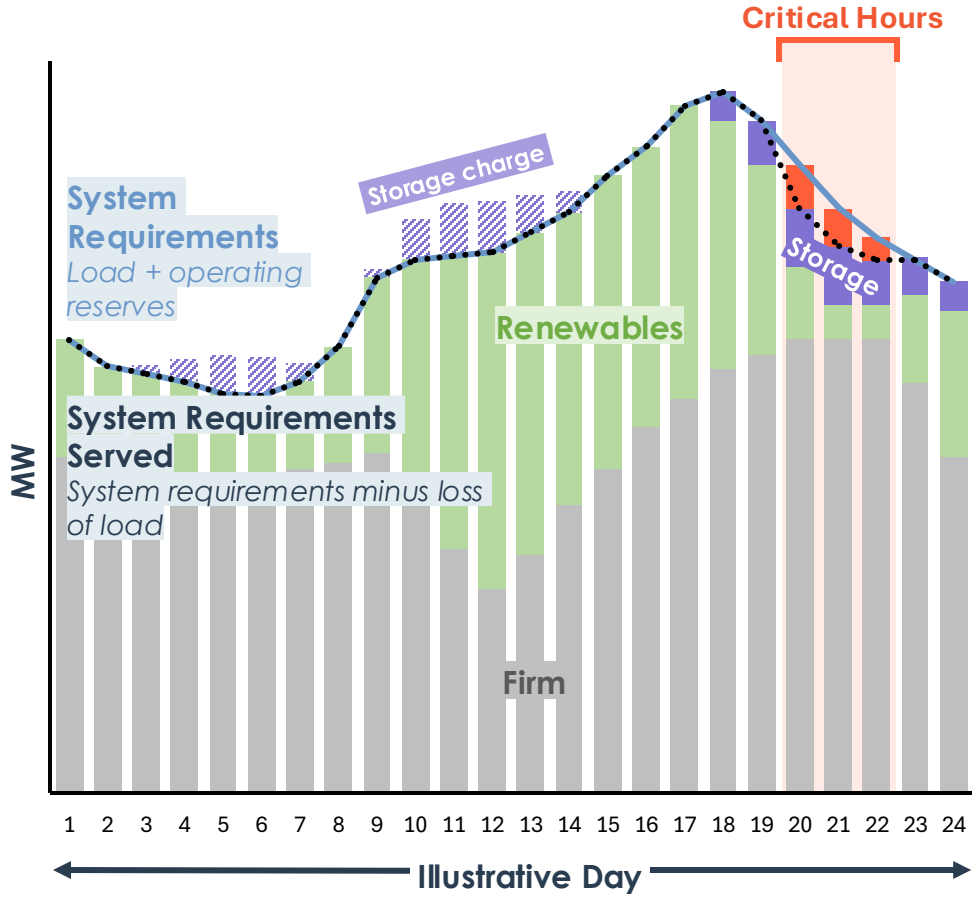
Portfolio dependent

Traditional Reliability Planning



- **Need determination reflected total resource need to meet target reliability**
  - Functionally equivalent to gross load plus operating reserves minus loss of load deemed acceptable during LOLP hours
  - Contextualizing this value relative to the 1-in-2 median annual peak yielded a % planning reserve margin
- **Resource counting was based on nameplate capacity**
  - Because most resources were firm, this was functionally equivalent to availability during LOLP hours

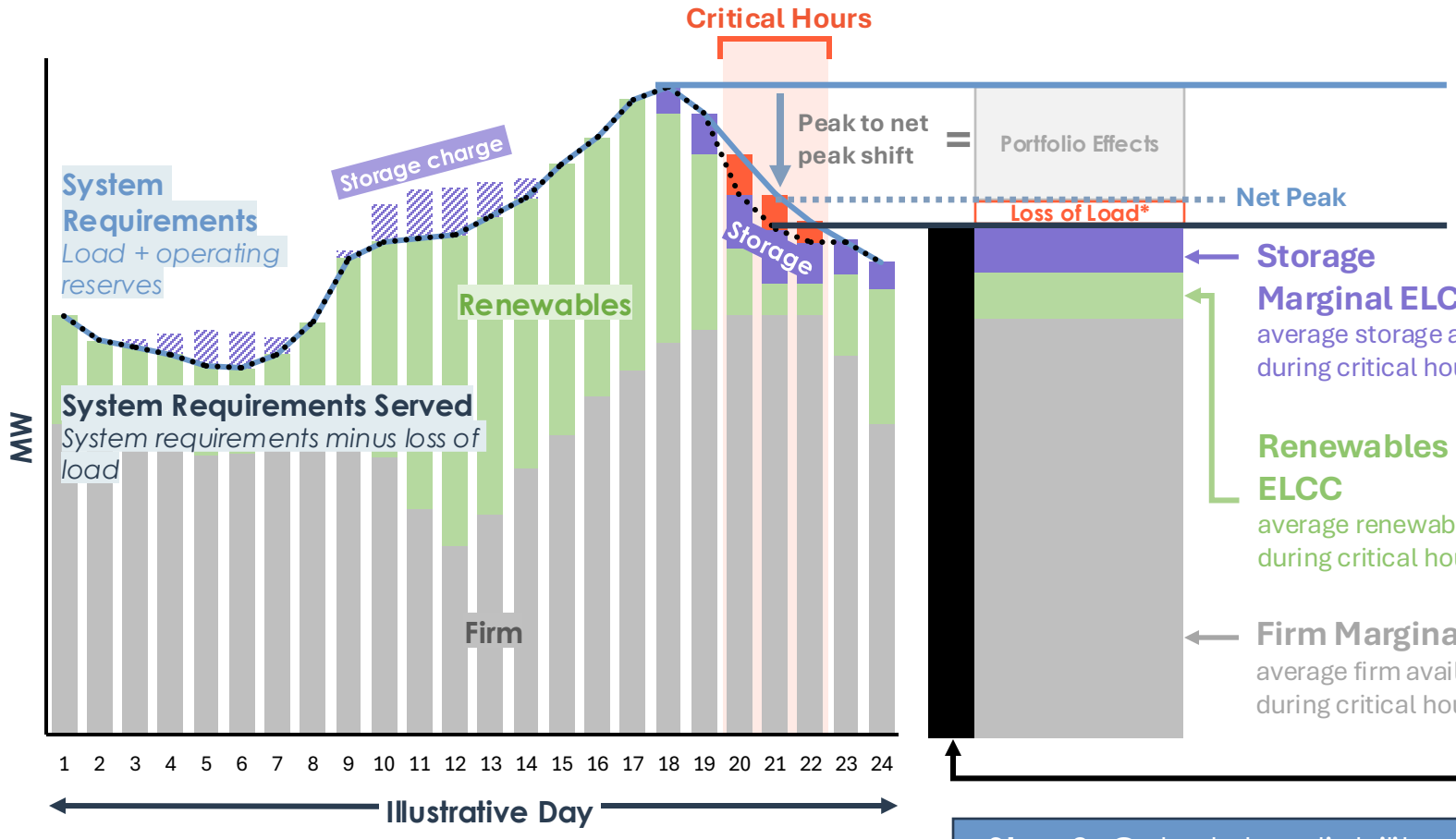
Critical Periods Based Reliability Planning



- **As the system evolves, loss of load risk will shift away from the gross peak to the net peak.**
  - LOLP modeling considers all hours of the year and – based on the portfolio modeled – identifies the new critical periods with reliability risk
  - For a system with a large share of non-firm resources (renewables, storage, DR), ensuring reliability during the gross peak no longer ensures reliability during the net peak
- **The RCPPP reliability program should continue to focus on the critical reliability risk periods, consistent with past practices for reliability planning.**
  - Resource counting based on ability to reduce loss of load risk (via marginal ELCC)
    - Marginal values provide an accurate investment signal for market entry/exit
  - Need set based on sum of marginally accredited capacity for a system at 0.1 days/yr LOLE, functionally equivalent to the gross load + operating reserves during hours with loss of load risk

Critical Periods Based Reliability Planning: Setting Reliability Need

Step 1: Using forecasted resource portfolio, calculate critical hours risk periods in SERVM



Total Reliability Need
average system requirements served during gross peak hours

Reliability Procurement Need
average system requirements served during critical hours

Storage Marginal ELCC
average storage availability during critical hours

Renewables Marginal ELCC
average renewable availability during critical hours

Firm Marginal ELCC
average firm availability during critical hours

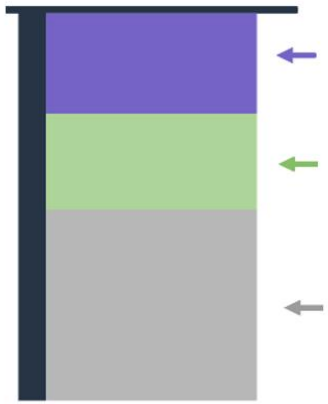
Step 2: Calculate resource marginal ELCCs during critical hours risk periods based on how resource meets the need

Step 3: Calculate reliability procurement need as the sum of marginally accredited MW for a system at 0.1 days/yr LOLE

* Loss of load represents the small amount of lost load allowed under the CPUC's 1-day-in-10-year LOLE standard. Not shown to scale.

Marginal ELCC Planning Example

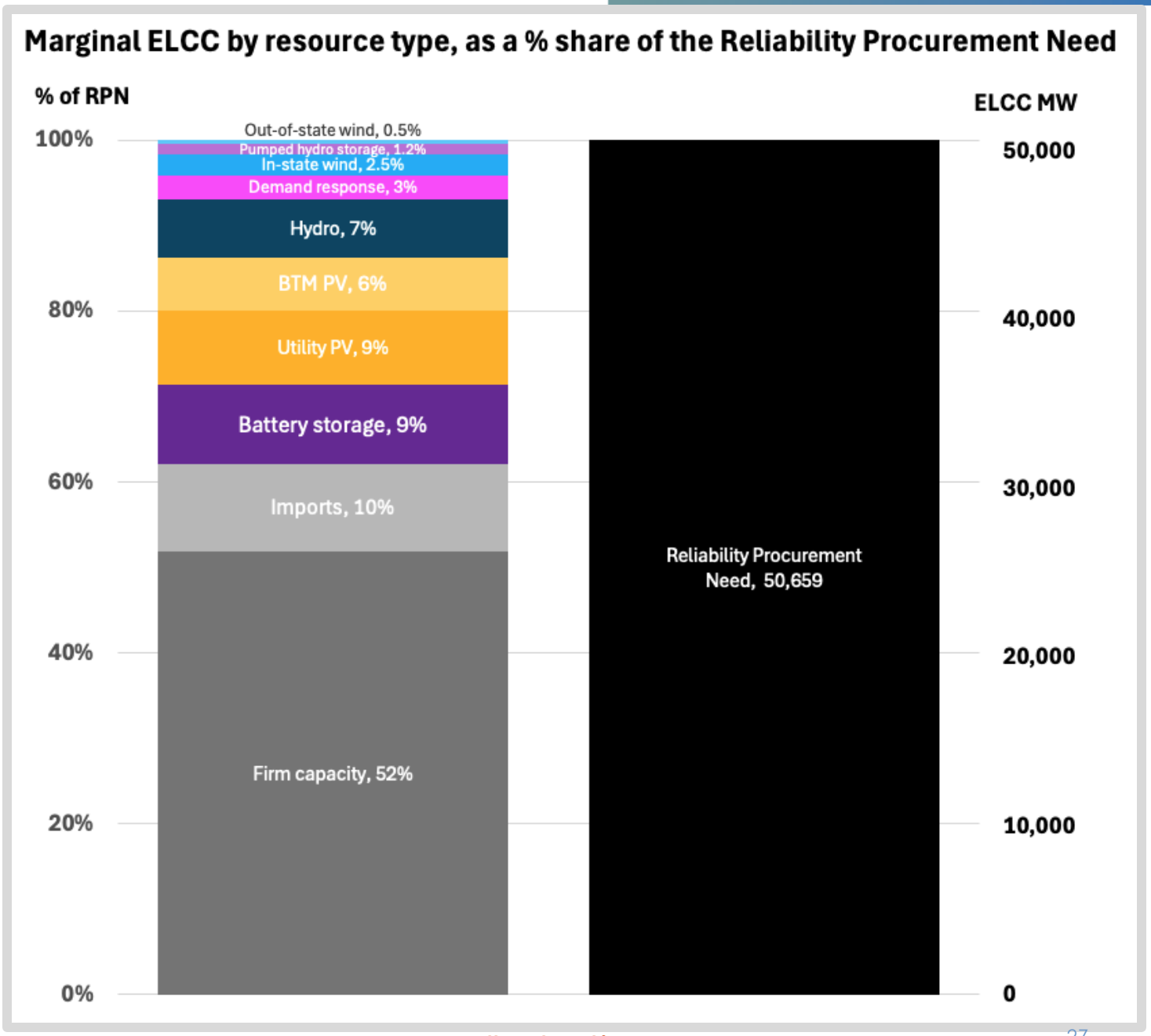
Reliability procurement need
average system requirements served during critical hours



Storage Marginal ELCC
average storage availability during critical hours

Renewables Marginal ELCC
average renewable availability during critical hours

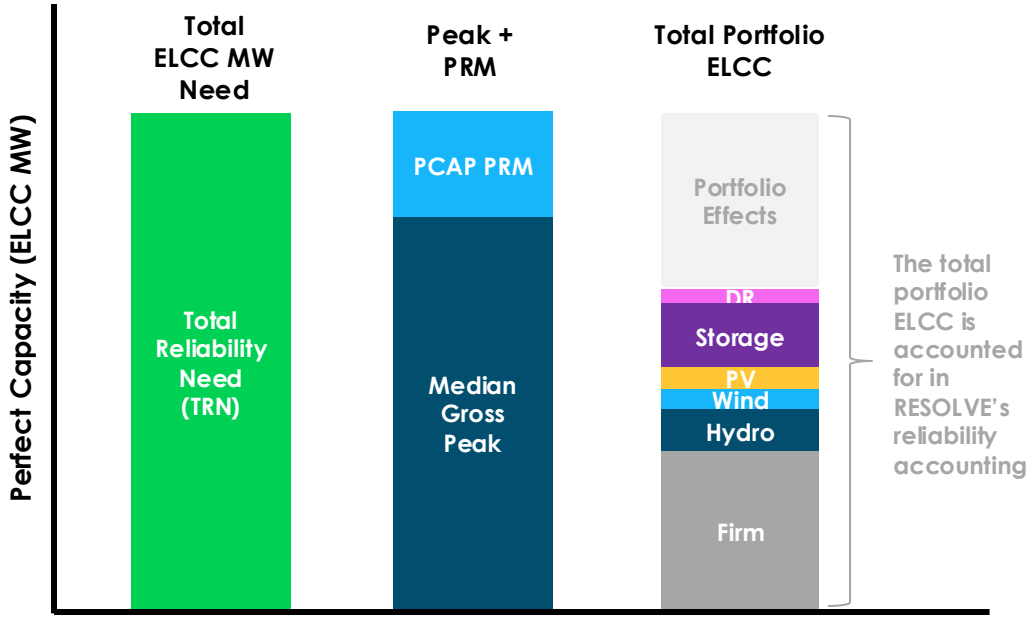
Firm Marginal ELCC
average firm availability during critical hours



Illustrative

IRP Planning and Procurement Can Use Different (But Internally Consistent) Approaches to Reliability Accounting

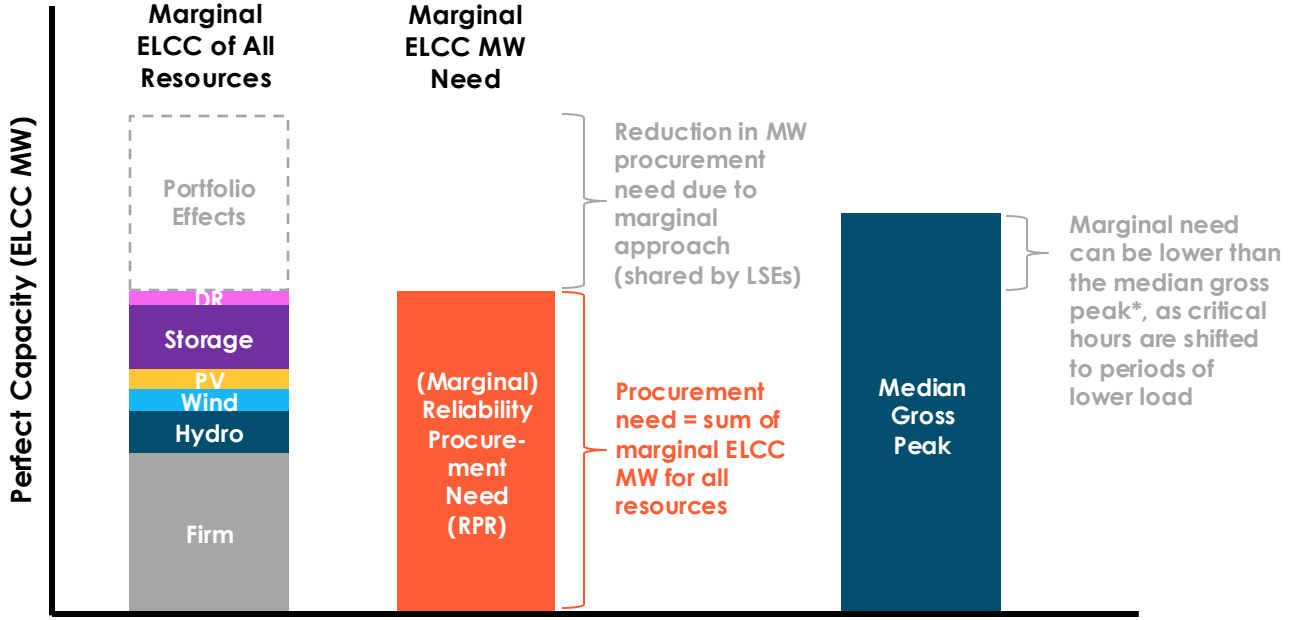
IRP Planning (RESOLVE): Total Reliability Accounting



For IRP long-term planning, total reliability accounting would be used, based on the TRN and PRM are used in RESOLVE.

- RESOLVE ensures the total portfolio ELCC need is met in each year.
- RESOLVE's ELCC surfaces/curves indicate the marginal value of additions to support least-cost optimization and capture portfolio effects.

LSE Planning + Procurement (RCPPP): Critical Periods Accounting



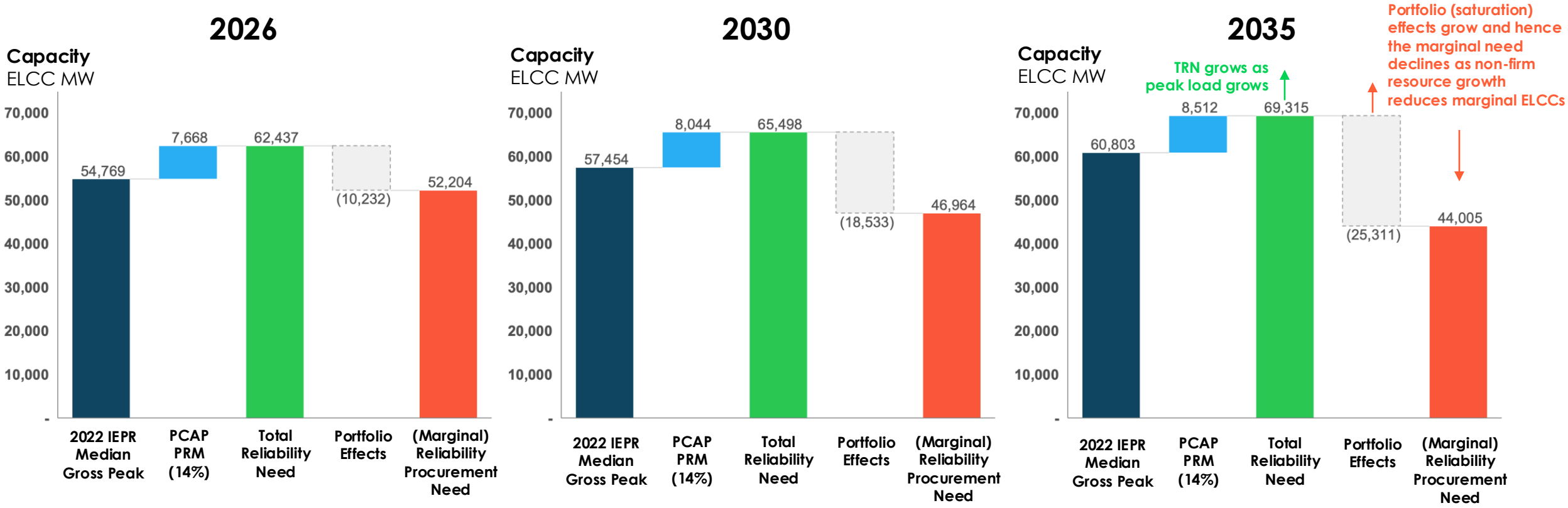
For RCPPP, marginal reliability accounting would be used, based on the (marginal) reliability procurement requirement (RPR).

- Marginal accounting ensures efficient market entry/exit signals.
- Since need is calculated directly via the sum of marginal ELCCs, there is no need to calculate a PRM.

* If measuring marginal need (during critical hours) relative to median gross peak, this would imply a negative PRM. This PRM would change as portfolio changes shift the critical hours relative to the median peak. A PRM is unnecessary in this framework since the sum of marginal ELCCs directly denotes the need.

Total Reliability Need vs. Marginal Reliability Procurement Need Will Change as the Resource Portfolio Evolves

- As more non-firm (RE, storage, etc.) resources are added, their marginal ELCCs decrease due to "saturation effects".
  - This makes the sum of the marginal ELCCs lower relative to the total portfolio ELCC as clean energy penetration grows.



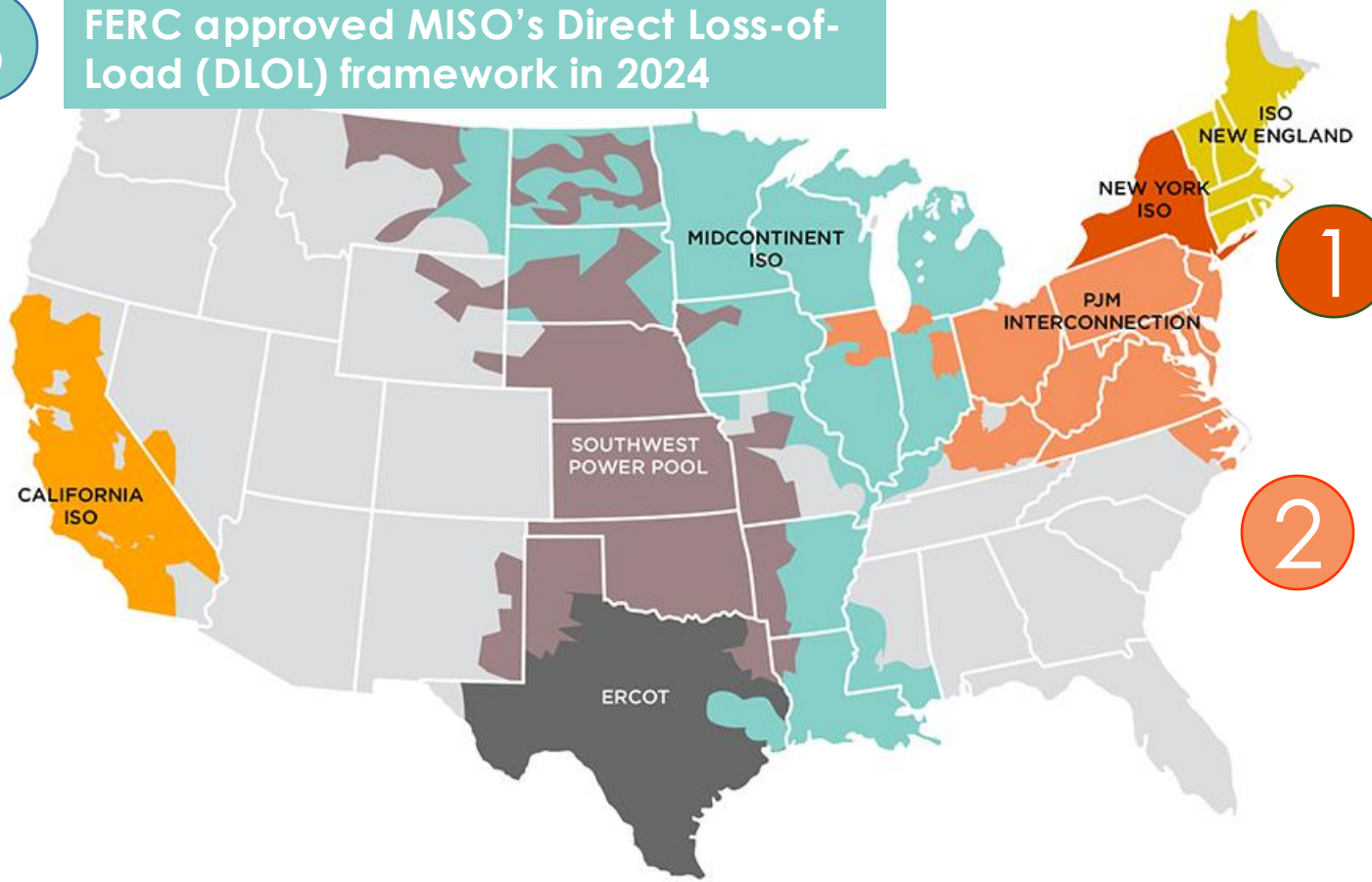
Note: Older 2022-23 IRP cycle results are shown here. Will be updated soon for the current IRP cycle.

Other Advantages of Using the Critical Periods Approach for RCPPP

- Incorporates both energy and capacity constraints, and interactions between the two
- Aligns incentives for demand-side load management resources and supply-side resources
- Creates a standardized resource adequacy product
  - Because accreditations are based on power system fundamentals, they can reasonably be projected and sold in forward markets for asset owners and LSEs that want to hedge capacity position risk

Aspects of the Critical Periods Framework Have Been Adopted by NYISO, PJM, and MISO

3 **FERC approved MISO's Direct Loss-of-Load (DLOL) framework in 2024**



1 **FERC approved NYISO move to marginal capacity accreditation in late 2022**

2 **PJM filed to FERC for marginal capacity accreditation Oct 2023 and received approval in 2024**

Why Resource Marginal ELCC Values Change Between Studies

Change	Reason for ELCC Impact	Example	Impact Magnitude
Portfolio Changes	Due to interactive effects within and between resources	Changing marginal ELCCs used for LSE IRPs based on the changing CAISO resource portfolio	High
Resource shape changes	Resource shapes are the most direct factor impacting solar and wind ELCCs	Updated wind shapes	Medium-High
Load shape changes	Load shape changes impact the load shape to which resources are dispatched when ELCCs are calculated	Re-calibration of SERVM load shapes when updating IEPR vintage	Medium
New weather years added	New weather years can impact the periods of extreme weather that drive reliability events	Addition in this study of the August 2020 extreme weather event	Medium
Changes to other input parameters	Due to interactive effects between resources, other input parameters may impact resource ELCCs	Hydro modeling, neighbor modeling, forced outage rates	Low-Medium
Methodological Changes	ELCC study methods may change slightly between different studies	Type of LOLE tuning method used (perfect capacity vs. firm load)	Low

How LSEs Can Mitigate Against Shifts in Critical Hours and Marginal ELCCs

- **System need, LSE need allocation, and resource accreditation are all measured during the same set of critical hours.**
  - LSEs must show they have enough resources to meet their load during the critical hours.
- **Critical hours will shift as CAISO's loads and resources evolve.**
  - This will change the system need, LSE need allocation, and marginal ELCCs.
- **However, LSEs can hedge their portfolio non-compliance risk associated with shifts in critical hours.**
  - **Procurement of diverse portfolios**: procuring a portfolio of resources that matches an LSE's load across all hours will mitigate against the risk that shifts in critical hours cause LSE noncompliance.
    - This aspect of the critical hours approach incentivizes LSEs to procure a diverse portfolio (similar to Slice of Day), while allowing them the flexibility to manage their capacity position risk.

Marginal ELCC vs. Slice of Day Accounting

Marginal ELCC accounting is focused on system-level load and resource needs, while Slice of Day accounting is focused on LSEs' own loads and resource needs. Both approaches are analytically sound, but optimizing for one approach or the other may yield slightly different procurement outcomes. For more detail, see Section 3.1.6.3 of the RCPPP Staff Proposal.

Marginal ELCC

- Represents the ability of a marginal resource's capacity to contribute to meeting reliability needs during critical periods
- Measures the reliability contribution for all resource types by comparing them to a "perfect capacity" resource – all resources put on a level playing field
- Probabilistic framework that requires 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
- Provides a signal for the reliability impacts of market entry or exit
- 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

Slice of Day

- 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 (resulting in 12 x 24 (or 288) slices per year for which LSEs must show compliance)
- 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 (defined as the day of the month in the CEC's IEPR forecast that contains the hour with the highest coincident peak load forecast)
- 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

4.2 Reliability Need Determination

Need Determination

- For each compliance year, the total need will be 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.
- The need is functionally equivalent to the load plus operating reserves served during critical hours for a portfolio at 0.1 LOLE.
- The need will be defined as the initial Reliability Procurement Need (RPN).
- Staff would publish the RPN for 10 calendar years (T+0 through T+9) every February and would allocate it to LSEs every April. Staff would update the resource accounting of marginal ELCCs every two years with new modeling.

Need Determination – Buffer

- A buffer of 2.5% would be applied to the initial RPN, leading to the final RPN.
- **Purpose:**
  - Mitigate development risk and/or other potential causes of insufficient resources being online for LSEs to meet year-ahead system resource adequacy requirements.
  - Ensure that LSEs are procuring and building sufficient resources such that they can enter the reliability year T+0 sufficiently resourced to meet a 0.1 LOLE and RA program requirements.

Need Determination – Options

- **Option I (New + Existing):**
  - **Scope:** new and existing resources.
- **Option II (New Resources + Expanded Multi-Year RA):**
  - **Scope:** new resources, with multi-year RA considerations for retention of existing resources.
  - Staff would determine the annual *new* RPN in units of ELCC MWs for each of the next 10 years.
  - New vintaged resources: resources that came online or will come online no more than 10 years before the compliance year. LSEs must show a portfolio of resources that contains eligible new resources.
  - The new resource need will be a function of:
    - Online (plus in-development and planned online) resources vintaged as "new" using the 10-year prior definition
    - Load growth
    - Staff's assumptions for the rate of retirement of existing resources

4.3 Reliability Need Allocation

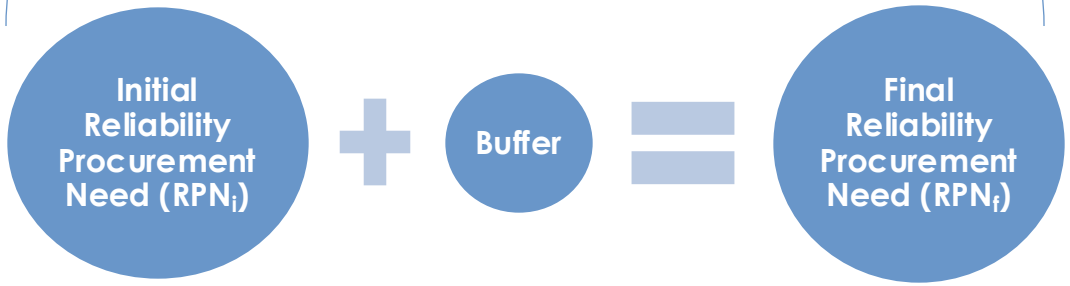
Need Allocation

- Allocates the final RPN (i.e., need determination) into a Reliability Procurement Requirement (RPR) for each LSE.
- 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.
- **Considerations:**
  - Although the CPUC will reissue 10 years' worth of RCPPP need allocations each year, need allocations will remain fixed within T+2. The RPR at T+1 and T+0 of the current year will not be higher than the RPR at T+2 and T+1, respectively, of the prior year.
  - 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.

Need Allocation – Collective Capacity Reserve

- Staff proposes that the CCR be set at 1.5% (minimum) to 3% (maximum) of the initial RPN.
- **Scope:**
  - The CCR will be procured by IOUs, who will serve as the RCPPP-central procurement entity (RCPPP-CPE).
  - Allocated to distribution customers of IOUs on a Transmission Access Charge (TAC) area capacity load ratio share basis.
  - Released for each year (T+0 through T+10).
- **Purpose:**
  - Functions as collective insurance against a variety of events, including RCPPP capacity deficiencies of LSEs (which are unmitigable in real time) and large changes in total load forecast (which will not be allocated to LSEs in T+0 and T+1 since total reliability need will remain constant after T+2).
  - Ensure there is adequate additional capacity to readily address LSE deficiencies that may not be known until T+0.

Need Determination
System-Wide



The resources required to reach the CPUC's reliability standard of 0.1 LOLE assuming all resources are accredited at their marginal ELCC in terms of perfect capacity (i.e., ELCC MW).

A percentage buffer above 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 RA requirements.

The initial RPN, with the addition of the buffer.

$$RPN_f = RPN_i \times \left(1 + \frac{Buffer}{100\%}\right)$$

Need Allocation
Individual LSEs

The RPR is the allocation of the RPN to each LSE. The need allocation uses hourly LSE-specific load forecasts, and allocates the need based on each LSE's pro-rata share of the managed load during the critical hours found during the need determination.

Need Allocation
IOUs only

Staff proposes that the CCR be set at 1.5% (minimum) to 3% (maximum) of the initial RPN. The CCR will be procured by IOUs, who will serve as the RCPPP-central procurement entity (RCPPP-CPE).

Timeline of Reliability Obligations

	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**
2026-2027	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
2027-2028	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
2028-2029	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
2029-2030	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
2030-2031	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040

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.

Need Allocation – Options

- **Option I (New + Existing):**
  - **Scope:** the need that is allocated is total need (i.e., existing and new resources)
  - **Compliance years:** Years T+2 through T+4 will serve as compliance years for Option I, while years T+5 through T+9 are indicative-only to consider updates to the load forecast and load migration.
- **Option II (New Resources + Expanded Multi-Year RA):**
  - **Scope:** the need that is allocated is total *new* need.
  - **Compliance years:** 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.
  - 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, and then divides the new resource RPN into an RPR for each LSE, representing new procurement need.

Relationship to Central Procurement

- Two ways to incorporate new centrally procured resources. Either:
  - (A) included in the need determination, with capacity credits later given to LSEs, or
  - (B) excluded from the need determination, obviating the need for credits to be later given.
- Staff proposes the first approach (A). LSEs may show their credits of centrally procured resources towards their RPR (*i.e.*, centrally procured resources will be credited towards an LSE's allocated need).

4.4 Reliability Compliance & Enforcement

Compliance

- LSEs will submit two compliance filings each RCPPP year:
  - December = preliminary, non-binding, subject to administrative penalty
  - June = final, binding, subject to administrative penalty and deficiency penalty
- **Considerations:**
  - Contracted or owned resources being used for compliance have a Must-Offer Obligation (MOO) for at least the five months of the year that Staff find to include the most significant loss of load hours when determining procurement need, currently May through September.
  - LSEs will receive credits from any eligible centrally procured resources, such as resources from historical IOU CAM, IOU DR, Local CPE or DWR CPE 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.

Compliance: 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)			✓	✓	✓
Percentage of required procurement to be shown in Offtake Contract (for new or existing resources)			100%	75%	50%
Interconnection Agreement (for new resources only)			✓		
Commercial Operations*					

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

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

Option I: Establishing Ongoing Multi-Year Forward Requirements in IRP

Example:

April 2026

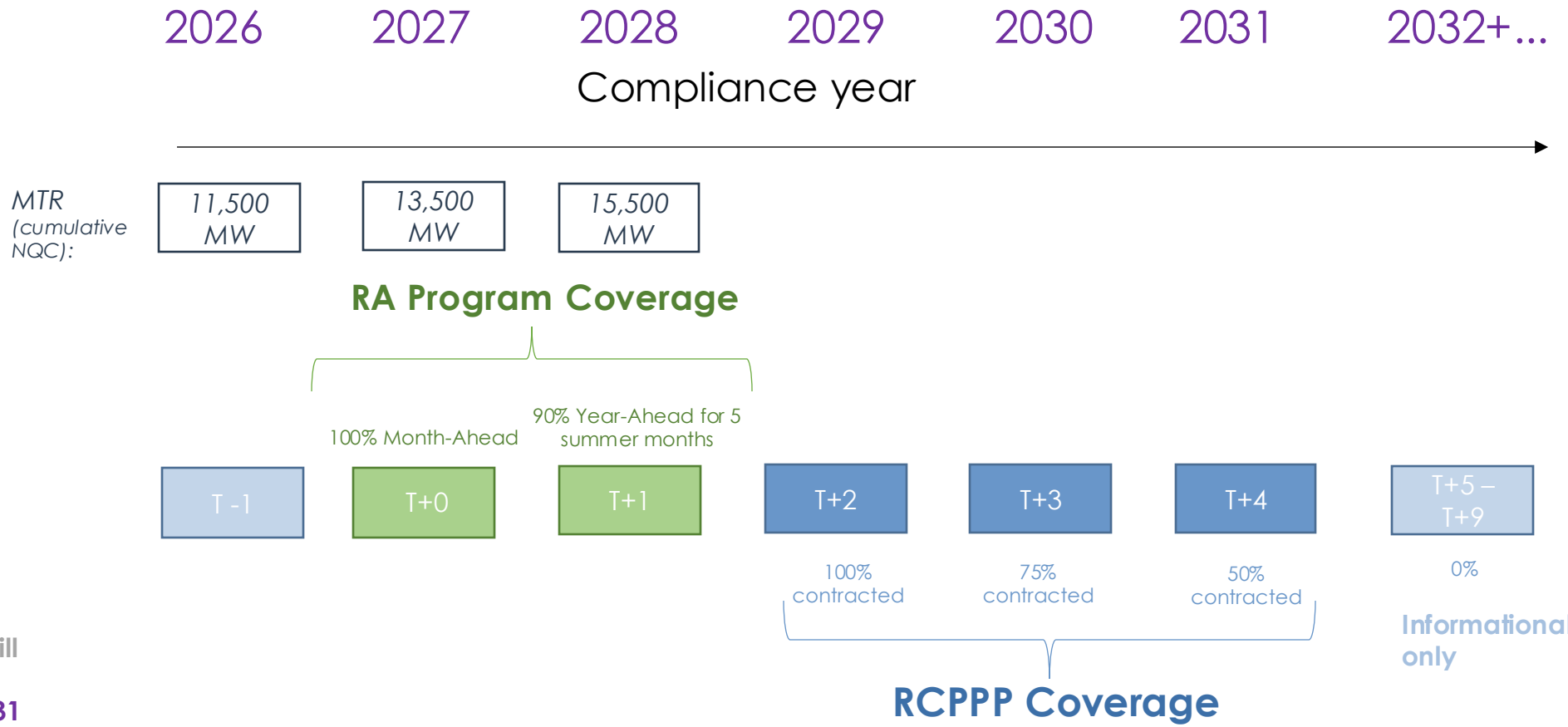
- Staff would release each individual LSEs RPR for **2029 through 2031 (T+2 – T+4)** and provide indicative information for **2032 through 2036 (T+5 – T+9).**
- LSEs start procuring

June 2027

- LSEs submit compliance filings **for T+2 – T+4.** LSEs will be subject a contracting deficiency penalty for **2031 only.**

Passage of time

… Repeat each year



Establishing an ongoing forward requirement, with appropriately high non-compliance penalties, provides the investment signal for LSEs to invest in new resources as needed

Note: System RA program coverage is shown here. The 3-year forward Local RA requirement also has important interaction with RCPPP coverage and is discussed later.

Compliance: Option II

June Milestone Showing	T+0	T+1	T+2	T+3	T+4
RA Slice-of-Day	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 through September contracts)	100% online	90% contracted	80% contracted	70% contracted	60% contracted
Offtake Contract (for new resources)		✓	✓	✓	✓
Interconnection Agreement (for new resources)		✓	✓		
Commercial Operations	✓				

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

† *Milestones needing consideration and adoption concurrently in the RA Proceeding.*

Option II: Establishing Ongoing Multi-year Forward Requirements in IRP; New-Resources Only

Example:

April 2026

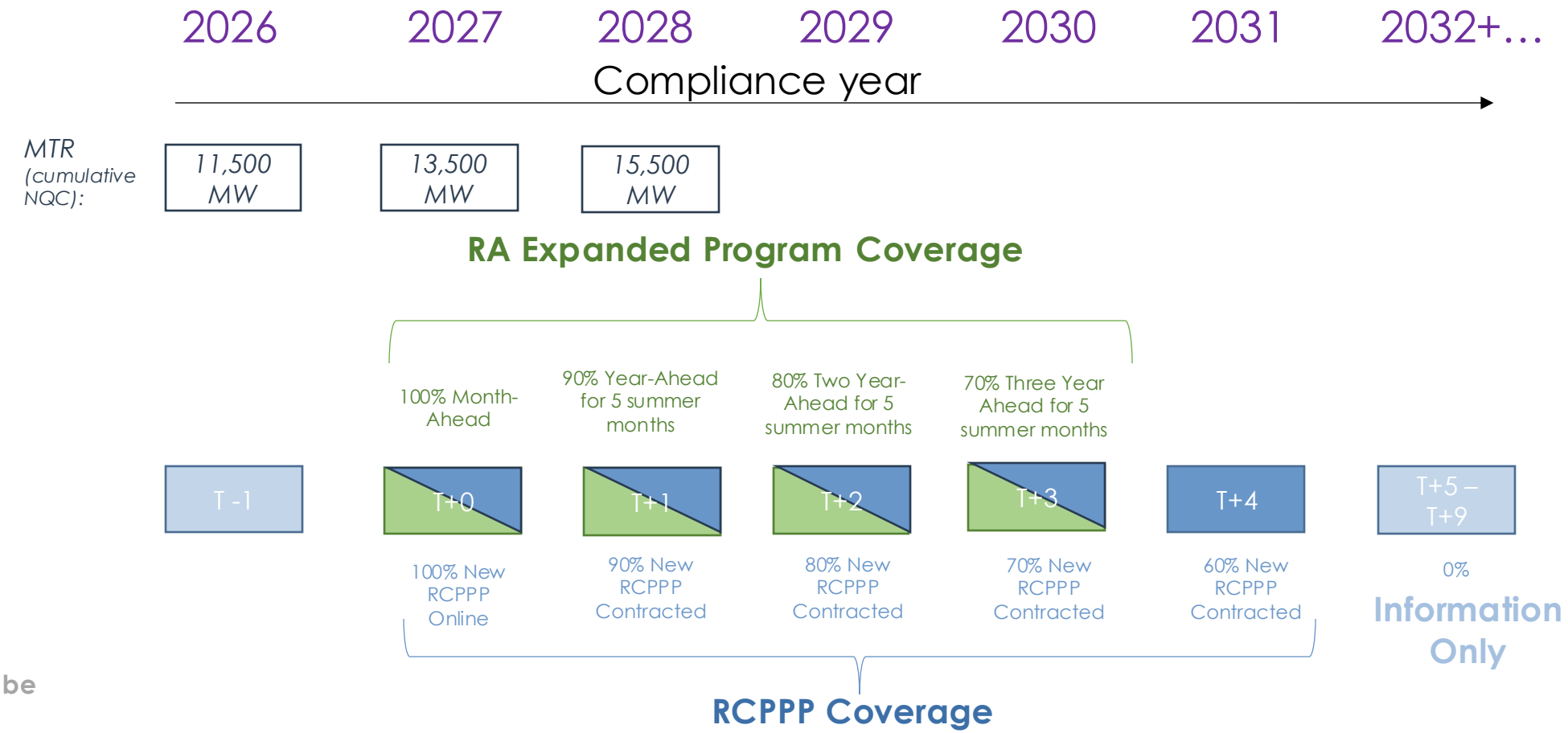
- Staff would release each individual LSEs RPR for 2027 through 2031 (T+0 –T+4) and provide indicative information for 2032 through 2036 (T+5 – T+9).
- LSEs start procuring

Passage of time

June 2027

- LSEs submit compliance filings for T+0-T+4. LSEs will be subject to a contracting deficiency penalty for 2031 only.

… Repeat each year



Establishing an ongoing forward requirement, with appropriately high non-compliance penalties, provides the investment signal for LSEs to invest in new resources as needed

Note: System RA program coverage is shown here. The 3-year forward Local RA requirement also has important interaction with RCPPP coverage and is discussed later.

Enforcement – Option I & II

- Each LSE will be subject to financial penalties based on:
  - 1. The extent to which its procurement for each compliance year does not meet the minimum volumes of its allocated reliability need.
  - 2. The accuracy and timeliness of its compliance filing.
- Financial penalties will be on a rolling basis; LSEs would be penalized for one year but could be penalized year-after-year for continuing to be deficient.
- **Considerations:**
  - Option II also includes resource adequacy penalties for enforcement of additional years added in the multi-year RA extension, whereas Option I only includes existing year-ahead and monthly RA penalties.

Enforcement – Option I & II

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)	N/A

Phasing-In of Penalties

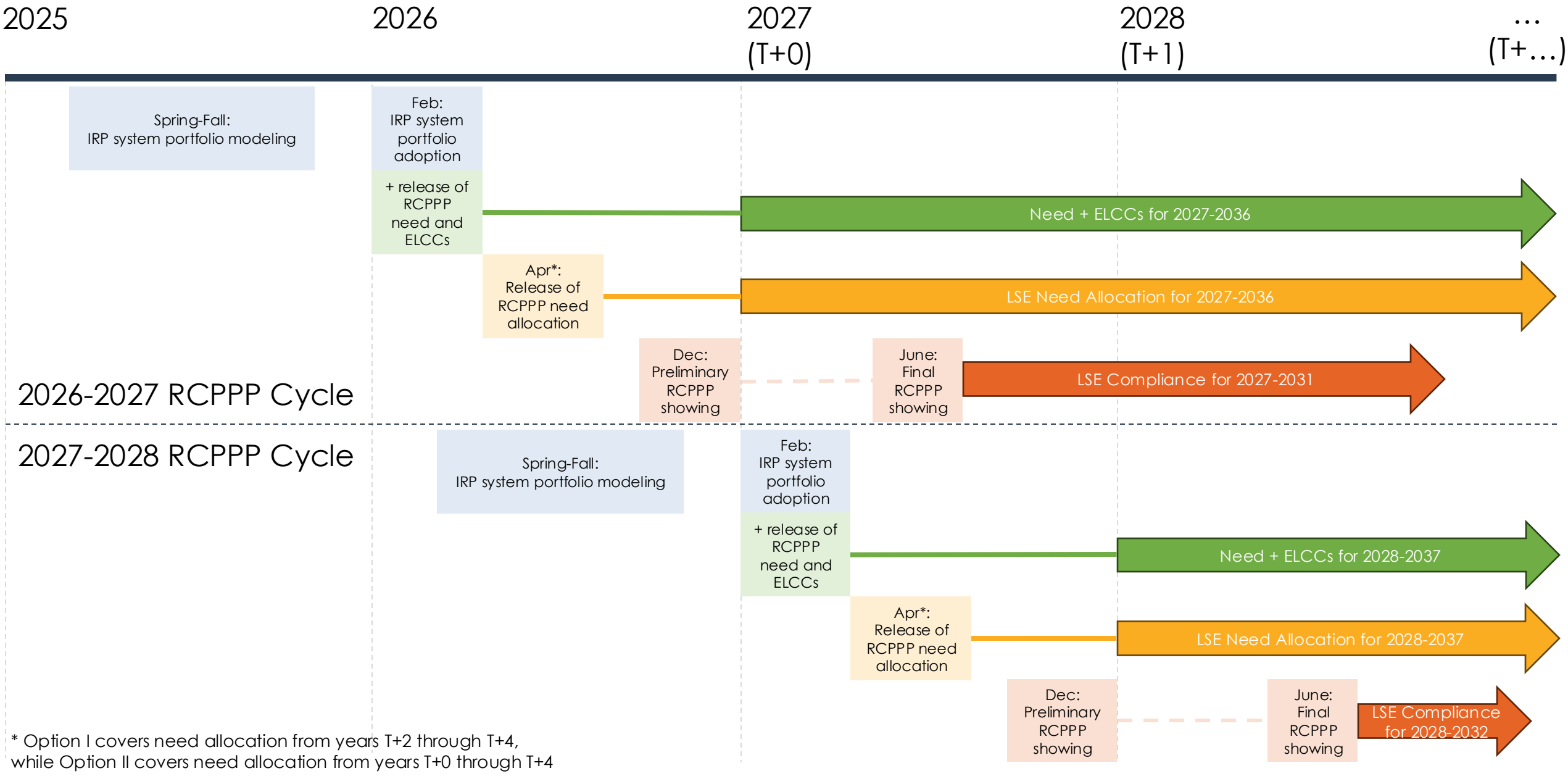
		Calendar Year of Procurement Obligations				
RCPPP Year	Final Filing	T+0	T+1	T+2	T+3	T+4
2026-2027	June 2027	2027	2028	2029	2030	2031
2027-2028	June 2028	2028	2029	2030	2031	2032
2028-2029	June 2029	2029	2030	2031	2032	2033
2029-2030	June 2030	2030	2031	2032	2033	2034

Legend

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

4.5 Summary of RCPPP Reliability Procurement

RCPPP Reliability Timeline



* Option I covers need allocation from years T+2 through T+4, while Option II covers need allocation from years T+0 through T+4

Summary of Reliability Option I: New & Existing Resources

- **Need Determination**
  - Reliability Procurement Need (RPN) calculated based on the accredited capacity to meet 0.1 LOLE using marginal ELCC, plus a 2.5% buffer.
- **Need Allocation**
  - RPN is allocated to each LSE's Reliability Procurement Requirement (RPR) using hourly LSE-specific load forecasts and each LSE's pro-rata share of load during critical hours.
  - RPR is not delineated between new vs. existing resources.
  - RPR is binding for years T+2 through T+4, with indicative information provided for years T+5 through T+9.
  - RPR includes a 1.5% to 3% Collective Capacity Reserve (CCR) collected by IOUs serving as CPE.
- **Compliance**
  - Filings occur in December and June of each RCPPP year.
  - The June filing will be the official milestone for measuring compliance.
  - LSEs must show an offtake contract and interconnection agreement 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.
- **Enforcement**
  - Imposes financial penalties (based on the net CONE) 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. June filings also will be subject to deficiency penalties for online and contracting sufficiency.

Summary of Reliability Option II: New Resources & Expanded Multi-Year RA

- **Need Determination**
  - Reliability Procurement Need (RPN) calculated based on the accredited capacity to meet 0.1 LOLE using marginal ELCC plus a 2.5% buffer, like Option I, but incorporates a rolling 10-year "new" resource vintage definition.
  - Focuses on new 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).
- **Need Allocation**
  - Like Option I, RPN is allocated to each LSE's Reliability Procurement Requirement (RPR) using hourly LSE-specific load forecasts and each LSE's pro-rata share of load during critical hours.
  - RPR is the total new need.
  - RPR is binding for years T+0 through T+4, with indicative information provided for years T+5 through T+9.
  - RPR includes a 1.5% to 3% Collective Capacity Reserve (CCR) collected by IOUs serving as CPE.
- **Compliance**
  - Filings for occur in December and June of each RCPPP year.
  - 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 resources, as well as comply with an expanded RA program from T+0 through T+3.
- **Enforcement**
  - LSEs will face similar enforcement penalties as in Option I for RCPPP new procurement. Multi-year RA deficiencies will be penalized based on existing RA penalty structure.

Summary	Reliability Option I					Reliability Option II				
Scope	• New and existing resources					• New resources only, with multi-year RA expansion				
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									
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.									
Compliance (based on June showings)	• LSEs file preliminary, non-binding compliance filings in December and final, binding compliance filings in June of each RCPPP year, showing compliance with the following metrics:									
Year	T+0	T+1	T+2	T+3	T+4	T+0	T+1	T+2	T+3	T+4
RA Program	100% month-ahead	90% year-ahead	-	-	-	100% month-ahead	90% year-ahead	80% two year-ahead	70% three-year-ahead	-
RCPPP	-	-	100% contracted	75% contracted	50% contracted	100% online	90% contracted	80% contracted	70% contracted	60% contracted
Enforcement	• Administrative penalties for inaccurate and late compliance filings equal to $1,000 per incident + $500 per day for first 10 days of late filing (increased to $1,000 for each day late thereafter)									
	• Contracting sufficiency penalties equal to .5 of net CONE ($7.5/kW-mo). May be waived if deficiency cured within 30-days of notice.									
	• Online sufficiency penalized via RA Slice of Day penalties.					• Online sufficiency for new procurement penalized at the net CONE ($15/kW-mo). May be waived if deficiency cured within 30-days of notice.				

4.5 Reliability Questions to Stakeholders

Reliability – Questions for Stakeholders

Reliability Option I vs. Option II

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?

Alternate Timelines for Reliability Procurement

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?

To Bound or Not to Bound?

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?

Reliability – Questions for Stakeholders

Months of Forward Contracting

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?

Buffer Percentage

13. How much more reliable should the system be compared to the 1-day-in-10-year LOLE? Is a buffer of 2.5% a reasonable value? If not, what is an appropriate percentage value for the buffer?
14. How should the affordability impact of the buffer be weighed against its reliability benefit?
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?

CCR Percentage

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?

Incorporating Centrally Procured Resources

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?

10-Minute Break

5. GHG-Reduction Procurement

Rationale for Proposed GHG Reduction Design

- Staff Proposal puts forward one option of a Clean Energy Standard (CES) with backward-looking compliance and zero-emission credits (ZECs); would build on the proven success of the Renewable Portfolio Standard (RPS) program.
- Staff Proposal also asks if existing processes could be used instead, or if parties have alternatives.
- Key Rationale for why CES was further refined over mass-based approach:
  - **Accuracy:** Any accuracy concerns regarding a CES also apply to a mass-based approach.
  - **Outcomes:** A CES may result in more or less GHG reduction than a mass-based approach, depending on how the target is determined and how the electric system operates compared to modelled operations, but in staff's view the potential gap is small.
  - **Administration:** Mass-based approach is more difficult to administer and imprecise on a forward basis (requires forward estimates of thermal unit dispatch, addressing average vs. marginal differences, etc.)
  - **Scalability:** A CES is more scalable due to its use of standardized, trackable, fungible compliance instruments (e.g., Renewable Energy Credits and Zero Emissions Credits).
  - **Avoids Duplication:** A mass-based approach risks inconsistency and duplication with existing mass-based GHG regulation under CARB's cap-and-trade program. RCPPP has a narrower electric sector focus than cap-and-trade and is intended achieve the clean energy goals of SB 100.

Clean Energy Standard (CES) Option

- Would establish an **annual clean energy target as a percent of retail sales** for LSEs.
- Target to be set based on the **amount of clean energy needed to achieve the electric sector GHG target**, as determined in the IRP planning track.
  - At a minimum, targets must achieve the clean energy goals of SB 1020 (2022) and SB 100 (2018): 90%, 95%, and 100% of retails sales supplied by eligible renewable and zero-carbon resources by 2035, 2040, and 2045 respectively
- LSEs would need to demonstrate that they contracted for a steadily increasing **quantity of clean energy (GWh)** sufficient to meet their percentage requirement.
- LSEs would need to contract with **eligible resources**, which would include RPS-eligible resources plus a broader set of GHG-free resources.
- Rules and compliance requirements would be **aligned with the RPS program** (i.e., 3-year compliance periods and penalty of $50/MWh for each deficient MWh).

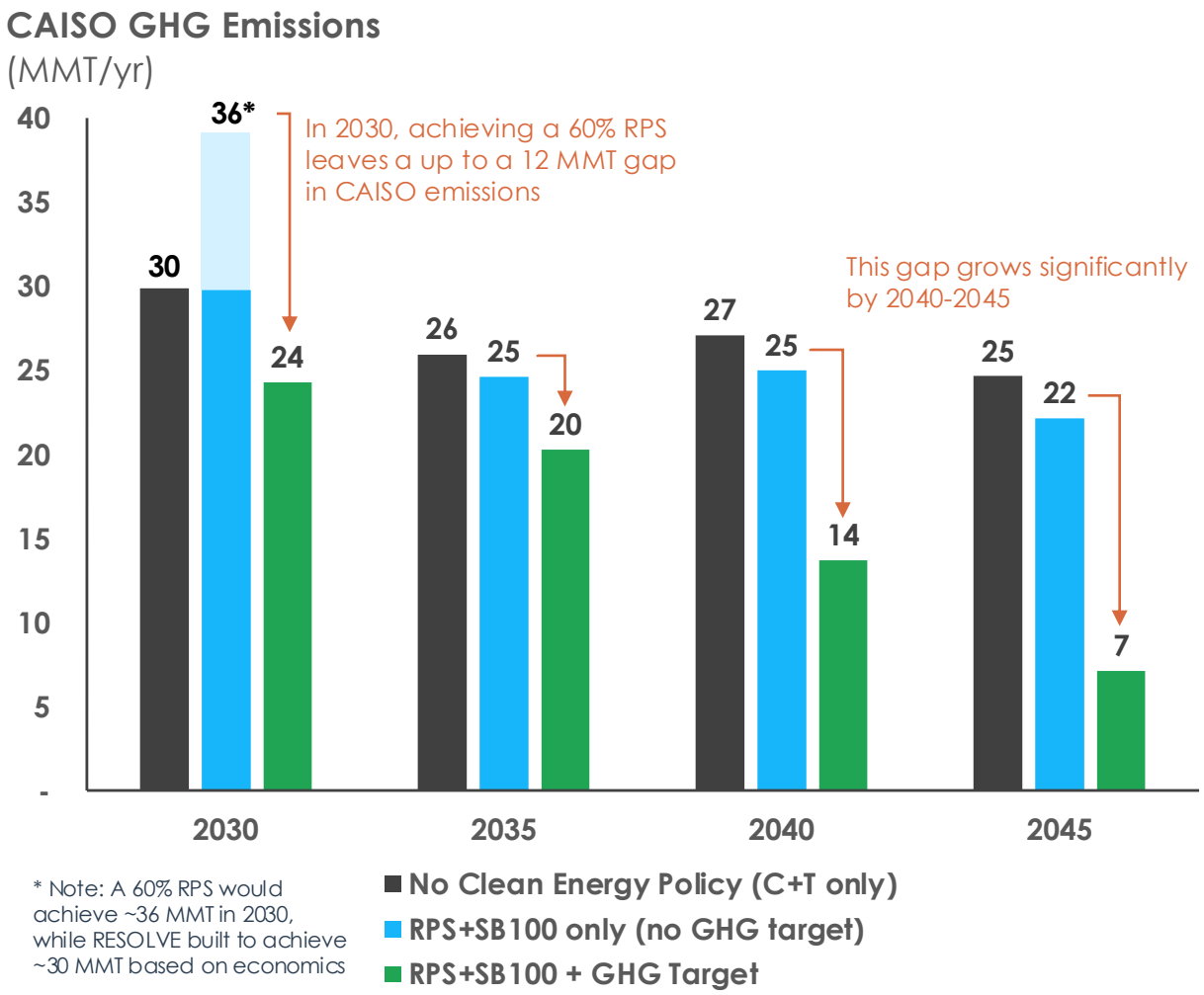
IRP Planning Track: Clean Energy Policies Modeled

- IRP modeling in RESOLVE includes three separate policy constraints
  - **RPS obligations** through 60% in 2030 and beyond (% of retail sales)
  - **Clean resource targets** established in SB100 and SB1020 (% of retail sales, including pumping load)
    - ~75% in 2030, 90% in 2035, 95% in 2040, and 100% in 2045
  - **CPUC's adopted GHG target** within the CARB range* (annual MMT target as required by SB 350 to meet targets in AB 32, SB 32 and SB 1279)
    - 24.3 MMT in 2030, 20.3 MMT in 2035, 13.7 MMT in 2040, 7.1 MMT in 2045
- RPS/CES and GHG modeling in RESOLVE aligns with current counting conventions
  - RPS/CES credits are produced when a clean energy MWh is delivered (including during periods of CAISO exports).
  - GHG emissions are produced when a CAISO gas plant operates (or when unspecified imports occur).

* CARB established a range of 30-46 MMT for the 2030 GHG target. The CPUC has adopted the low end of this range for its jurisdictional entities (30 MMT in 2030 and 25 MMT in 2035).

Modeled CAISO GHG Emissions With and Without Policy Constraints

- Sensitivity analysis in RESOLVE was conducted during the 2023 PSP to assess the impact of the RPS/SB100 and GHG target constraints
  - Case 1: No Clean Energy Policy
    - Includes CARB Cap + Trade (C+T) Price Floor
  - Case 2: RPS+SB100 only (no GHG target)
    - Includes C+T + RPS (through 2030) + SB100/1020 targets (2031-2045)
  - Case 3: RPS+SB100 + GHG Target
    - Includes C+T + RPS (through 2030) + SB100/1020 targets (2031-2045) + GHG Target
- Three constraints above lead to different resource portfolios that produce different emissions results.
- Modeled economics (incl. CARB C+T prices) lead to continued economic GHG reduction (up to a point)
  - Does not necessarily mean that LSEs would pursue this procurement without compliance targets
- By 2030-2035, RPS and SB 100 targets bind & push GHG emissions slightly lower (Case 2)
- ***Achieving the aggressive CPUC-adopted GHG targets require significant further procurement beyond existing RPS targets***

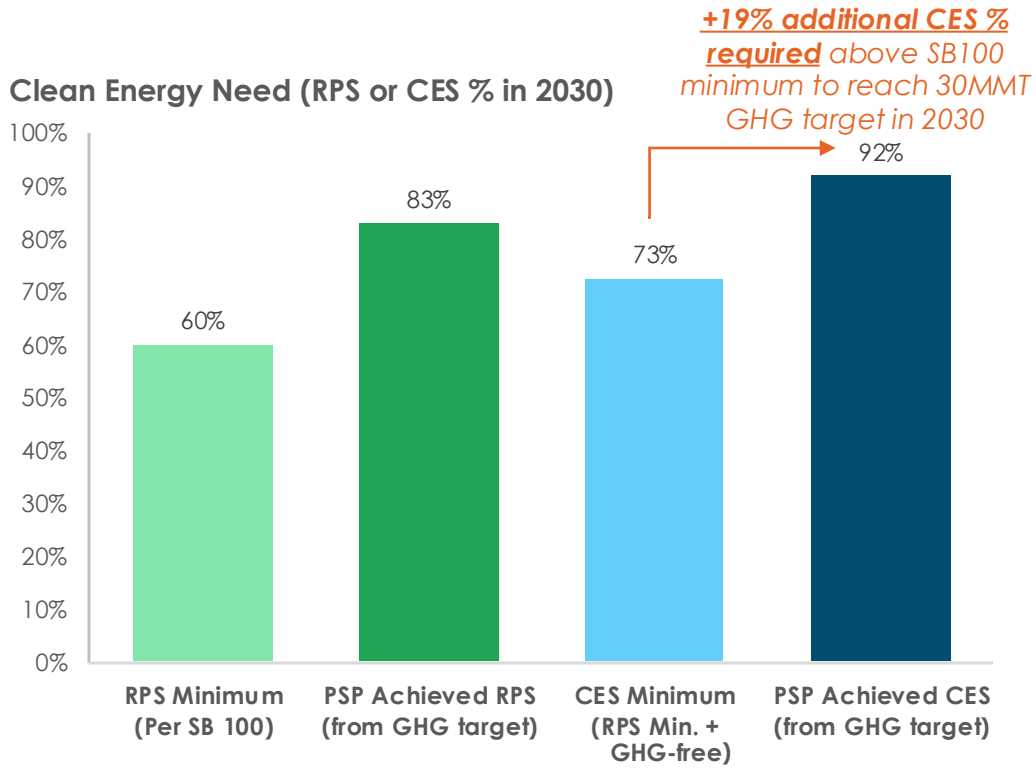


Cap and trade prices = price floor of $31/ton in 2030, climbing to $67/ton in 2045 (real 2022 $)
RPS + SB 100 targets modeled = ~75% in 2030 (60% RPS + existing hydro + nuclear), 90% in 2035, 95% in 2040, and 100% in 2045 per SB100 and SB1020
GHG targets modeled = 24.3 MMT in 2030, 20.3 MMT in 2035, 13.7 MMT in 2040, 7.1 MMT in 2045

5.1 CES Need Determination

CES Need Determination: Deriving an Illustrative Clean Energy Standard from RESOLVE 2025-26 TPP Results

- Steps to set a CES target aligned with the CPUC's GHG target:
  1. **Run RESOLVE with a binding GHG target**
     - If LSE plans drive GHG target to not bind, consider whether planned additions should be removed so the target binds*
  2. **Derive the annual achieved CES %**
     - In doing so, remove RESOLVE assumptions regarding bank usage
  3. **Allocate CES % target to LSEs**
     - CES % targets are defined by CAISO level retail sales and would be allocated using (LSE level retail sales) x (CES target %)



RPS

- Uses retail sales (w/o pumped loads)
- Includes all modeled RPS resources
- Value shown do not include any RPS bank usage

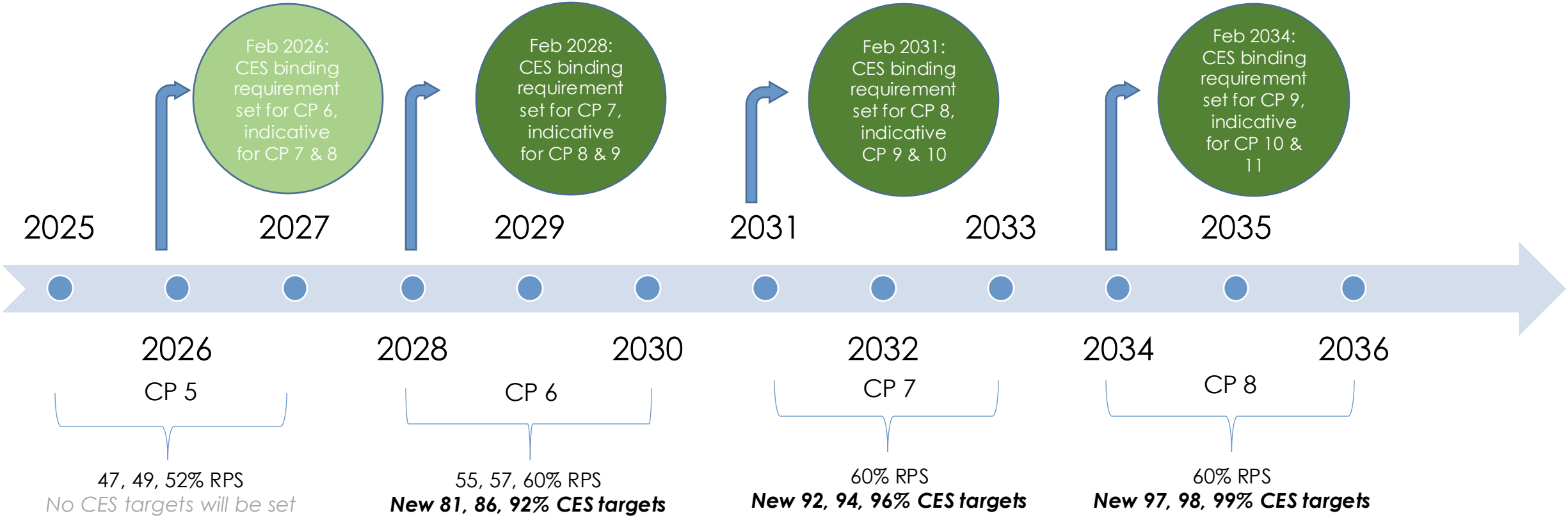
CES

- Uses retail sales (w/ pumped loads)
- Includes all modeled RPS resources + GHG-free resources
- Value shown do not include any RPS bank usage

* If additions from LSE plans or economic additions drive GHGs lower than the target, then it is not feasible to derive the implied CES % from the target itself. If some LSEs choose to exceed their share of the GHG target, driving the target not the bind, the CPUC would not want to force that obligation to other LSEs.

CES: Need Determination (con't.)

- CES compliance periods (CP) would match the current RPS compliance periods.
- The first year of the program will be slightly different; the need determination will be released in 2026 (T-2).
- In all other years, binding CES requirements will be set at the beginning of the prior compliance period (T-3).



CES targets shown are the achieved CES targets from the draft 25-26 TPP base case portfolio released in September 2024.

5.2 CES Need Allocation

CES Need Allocation

- Same allocation methodology as currently used in the RPS program to set RPS targets: LSEs would be required to match a **% of their annual retail sales** with renewable and/or zero-carbon energy
  - The CES requirement increases as:
    - The electric GHG target goes down, necessitating a higher CES % target
    - An LSE's load grows, driving an increased CES MWh procurement requirement even if the LSE's CES % requirement does not change
- Each LSE's CES target would be the **same as the percentage target set at the Need Determination stage**, with each LSE's need being defined as its annual retail electricity sales multiplied by the CES percentage
- LSE need metric is an annual **percentage target of CES-eligible generation as a share of retail sales**

5.3 CES Compliance & Enforcement

CES Compliance

- Like RPS, years would be grouped into **multi-year compliance periods (CPs)** with compliance assessed at the CP level
- The CPUC also establishes **annual procurement targets** for each year within a compliance period
- Annual compliance reports and achievement of LSE annual procurement targets would be used to **inform Energy Division staff about LSE compliance progress** and **provide an early indication** of potential compliance issues
  - Whether an LSE achieves their annual procurement target would **not inform CES compliance** and would **not be the basis for enforcement action**
- CES compliance, and subsequent enforcement action if needed, would be based on whether LSEs **meet their multi-year CP requirement**, as reported in their Final Compliance Report

CES Compliance – Leveraging RPS

- CES would exist alongside RPS, leveraging RPS compliance rules and program infrastructure to the extent applicable
- Under the RPS program, retail sellers submit two annual filings:
  - **RPS Procurement Plans**, Public Utilities Code §399.13(a)(1)
    - Demonstrates that LSEs are procuring consistent with the goal of increasing California's reliance on renewable resources
  - **RPS Compliance Reports**, Public Utilities Code §399.13(a)(3)
    - Once the compliance period is over and the CEC has issued its Verification Report for the compliance period, LSEs submit Final RPS Compliance Reports to the CPUC for a final compliance determination
- Staff proposes to expand both filings into RPS/CES Procurement Plans and RPS/CES Compliance Reports
  - All existing RPS reporting requirements would remain
  - New reporting requirements and tools would be developed to implement and measure progress toward CES procurement requirements

CES Compliance – ZEC Creation and Tracking

- CPUC would work with WREGIS to establish **Zero Emission Credits (ZECs)** as the metric for CES compliance to be created for each **MWh of GHG-free generation** from non-RPS eligible resources
- Definition of eligible resources for which ZECs would be created and tracked: to be established in the IRP proceeding
- ZECs would include an **e-tag system** to track where generation geographically occurs, which would be used as a basis for establishing eligibility
- **Both RECs and ZECs could be used to comply with the CES**
  - To promote fungibility between RPS and CES, **the same REC** could be used to meet RPS and CES compliance, similar to how new RPS resources can count toward IRP requirements under recent decisions

CES Enforcement

- Enforcement trigger: at end of each compliance period based on the LSE's Final Compliance Report; penalty amounts are set at $50 per MWh
  - Backward looking – Following the CPUC's final compliance determination regarding whether the LSE retired the minimum quantity of eligible RECs and ZECs to satisfy its compliance requirement
- Under the RPS Program, penalty amounts are set at $50 per REC and are applied to the REC shortfall from a retail seller's RPS procurement obligation
- In establishing a citation program, the CPUC could 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)).

5.4 Summary of RCPPP CES

GHG Reduction: Clean Energy Standard (CES) Option

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

GHG Reduction – Questions for Stakeholders

Approaches to GHG Reduction

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 an 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. Next Steps

RCPPP Staff Proposal: Next Steps

- Opening comments due July 15th, 2025
- Reply comments due August 5th, 2025
- Second workshop TBD

7. Verbal Questions

Verbal Clarifying Questions

- We invite stakeholders to ask clarifying questions verbally
- In Webex:
  - Please "raise your hand"
  - Webex host will unmute your microphone and you can proceed to ask your question
  - Please "lower your hand" afterwards
- For those with phone access only:
  - Dial *3 to "raise your hand." Once you have raised your hand, you'll hear the prompt, "You have raised your hand to ask a question. Please wait until the host calls on you."
  - Webex host will unmute your microphone and you can proceed to ask your question

Thank You

California Public
Utilities Commission