

Integrated Resource Planning (IRP) Mid-term Reliability Analysis & Proposed Procurement Requirements

Workshop

March 10, 2021



California Public
Utilities Commission

Workshop outline

Introduction

Context

**Need
determination**

Need allocation

**Procurement entity
direction, backstop
procurement & cost
allocation**

**Approval,
compliance &
enforcement**

Next steps

Introduction

Logistics & Scope

- Workshop slides are available at the [IRP Procurement Track webpage](#)
- The workshop will be recorded, with the recording posted to the same webpage
- This workshop is not for the IRP proceeding record, but rather to advance stakeholders' understanding during development of written comments
- Out-of-scope:
 - Load-serving entity plan aggregation and Preferred System Portfolio development

Questions (1)

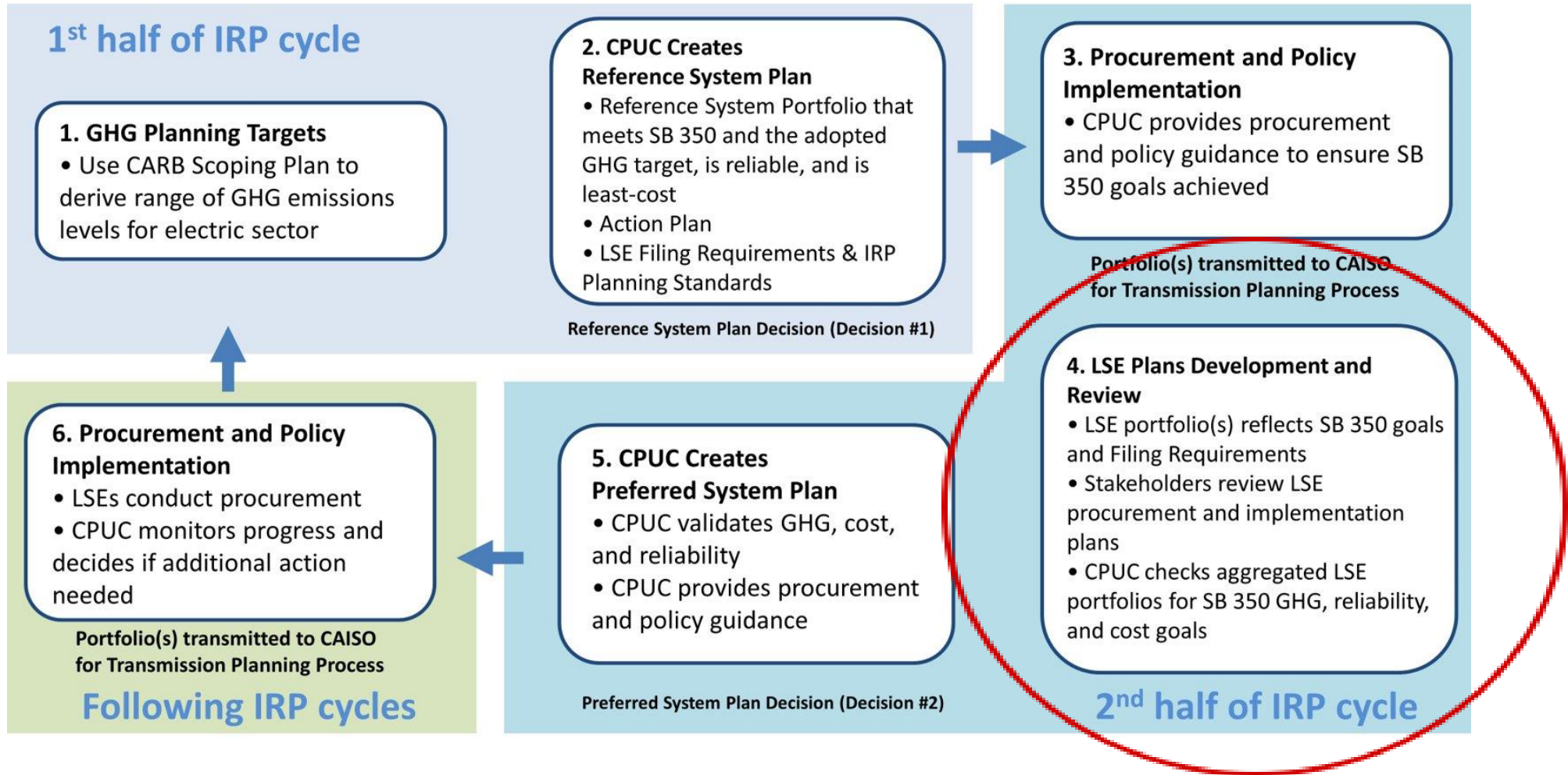
- This workshop is intended to advance stakeholder's understanding of the analysis and proposed procurement requirements in the [Administrative Law Judge's \(ALJ\) Ruling dated 2/22/2021](#) (hereinafter "Ruling" refers to this, unless specified otherwise)
- We invite clarifying questions during the Q&A segment at the end of each topic. This workshop is to support understanding of the analysis that led to the Ruling, for parties to advocate their positions in their written comments.
- Stakeholders have opportunity to provide written comments in response to the Ruling by 3/19/2021 and via reply comments by 4/2/2021
- All attendees have been muted. **To ask questions:**
 - 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

Questions (2)

- 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 to speak until the host calls on you“
 - WebEx host will unmute your microphone and you can proceed to ask your question
 - Dial *3 to “lower your hand”
- Questions may also be typed into the “Chat Room” feature of this Webex, though priority will be given to stakeholders who have “raised their hand”

Context

Where we are in the IRP Process

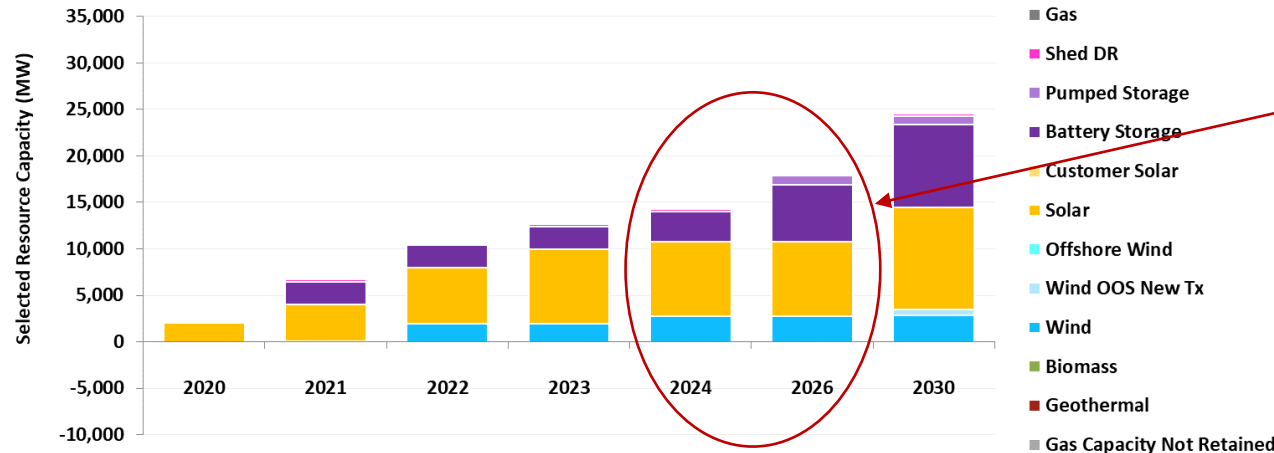


Ruling context: sequence of activities in IRP leading to likely mid-term procurement need

- 2018: California Public Utilities Commission (CPUC) authorized Diablo Canyon Power Plant's closure (D.18-01-022)
- 2019:
 - 2017-2018 Preferred System Plan (PSP) (D.19-04-040) required LSEs to plan for the replacement of Diablo Canyon Power Plant
 - First IRP procurement order: 3,300 MW net qualifying capacity (NQC) reliability procurement (D.19-11-016)
- 2019-2020 Reference System Plan (RSP) (D.20-03-028)
 - Adopted 46 million metric ton (MMT) portfolio, including ~18,000 MW of new nameplate capacity by 2026
 - Required procurement track of IRP to consider ordering large/long-lead time resources beyond those included in RSP, for resource diversity
- 2021-2022 Transmission Planning Process (TPP) (D.21-02-008)
 - Transmitted 46 MMT RSP updated with 2019 Integrated Energy Policy Report load forecast (IEPR), including approximately 650 MW of geothermal + 600 MW of long-duration storage

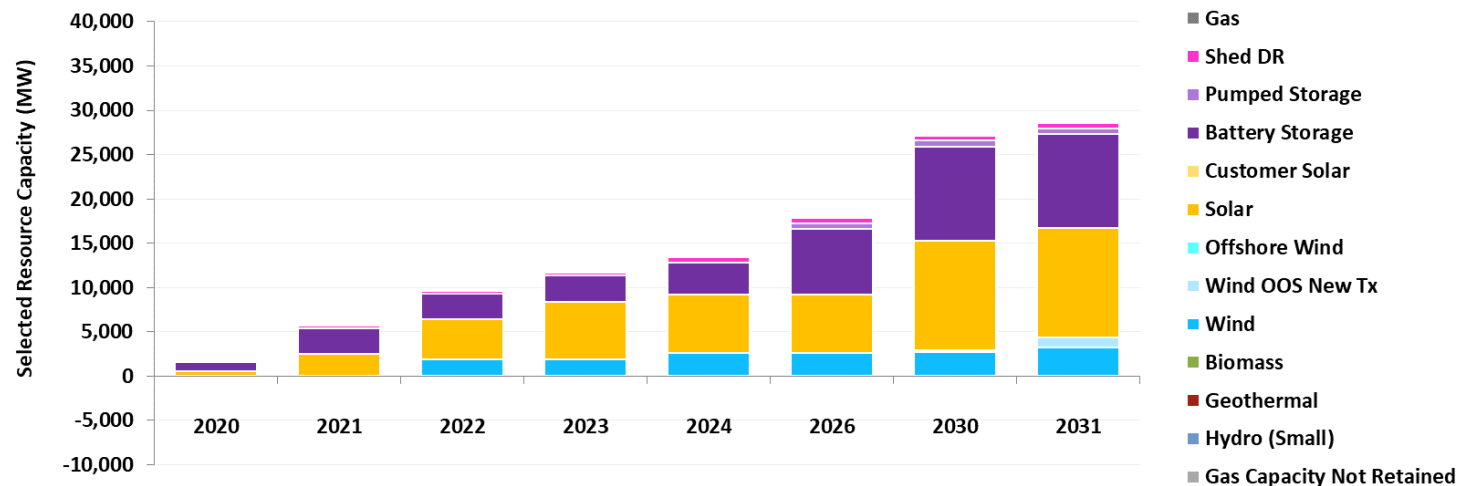
Previously identified capacity additions in mid-decade timeframe – 46 MMT Portfolio

2019 Reference System Plan (2018 IEPR)



New build required by 2026:
approx. 18 GW of nameplate capacity

Updated 2019 Reference System Plan (2019 IEPR)



Slightly **more** solar, battery storage, and shed DR selected

Slightly **less** OOS wind and pumped hydro storage

Summary of Mid-Term Reliability ruling

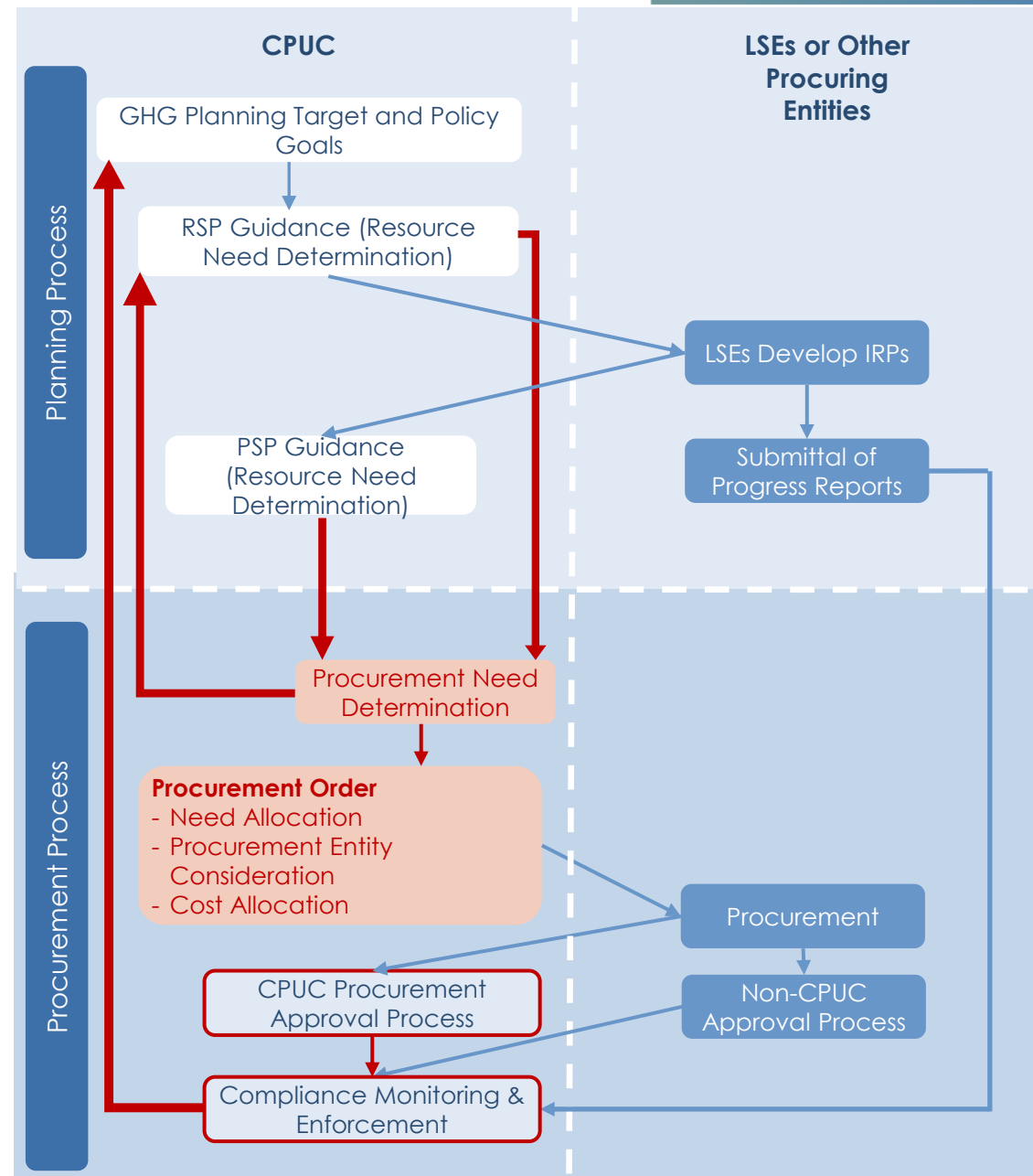
- Proposes 7,500 MW NQC of procurement to come online 2023-2025
 - 4,700 MW and 10,400 MW in "low need" and "high need" cases, respectively
- Driven by need to support California's transition to an affordable and reliable clean energy grid. Seeks to ensure sufficient electric capacity exists to maintain reliability in light of:
 - Planned retirements of Diablo Canyon Power Plant and other generating units by mid-decade, and
 - Possible need for a higher planning reserve margin
- Proposes 1,000 MW of geothermal resources and 1,000 MW of from long-duration storage by 2025
- Proposes to assign procurement responsibility to all Load Serving Entities (LSEs) based on their share of peak demand and their current contractual positions in the mid-decade timeframe
- Proposes other requirements the CPUC could use to order the procurement, including procurement entity direction, backstop procurement, cost allocation, approval, compliance & enforcement

Ruling context: Staff Proposal for Resource Procurement Framework in IRP

- November 2020: ALJ Ruling dated 11/18/2020 provided and incorporated into the record the Staff Proposal for Resource Procurement Framework in IRP (Procurement Framework Staff Proposal)
- December 2020: Staff held a workshop to advance stakeholder's understanding of the Procurement Framework Staff Proposal
- **February 2021: ALJ Ruling dated 2/22/2021 recommends procurement requirements, some of which are based on options and/or recommendations in the Procurement Framework Staff Proposal; per the questions posed in the Ruling:**
 - Stakeholders are invited to comment, particularly where the Procurement Framework Staff Proposal relates to the proposed Mid-Term Reliability procurement
 - Comments on other aspects of the "Phase 1" (i.e., those pertaining to the current IRP cycle) recommendations in the Procurement Framework Staff Proposal are also invited

Links between procurement process and planning process in IRP

- Procurement Framework Staff Proposal seeks to define connections between planning and procurement
 - Blue = existing steps
 - Red = steps to be established or updated
- This Ruling proposes to operationalize some of these



Process timeline

- Ruling releasing Procurement Framework Staff Proposal (11/18/2020)
- Workshop to present Staff Proposal (12/18/2020)
- **Ruling seeking feedback on Mid-Term Reliability analysis and proposed procurement requirements (2/22/2021)**
- **Workshop re: ruling 3/10/2021**
- Comments (3/19/2021) and replies (4/2/2021)
- PD and Decision on Mid-Term Reliability procurement (Q2 2021)

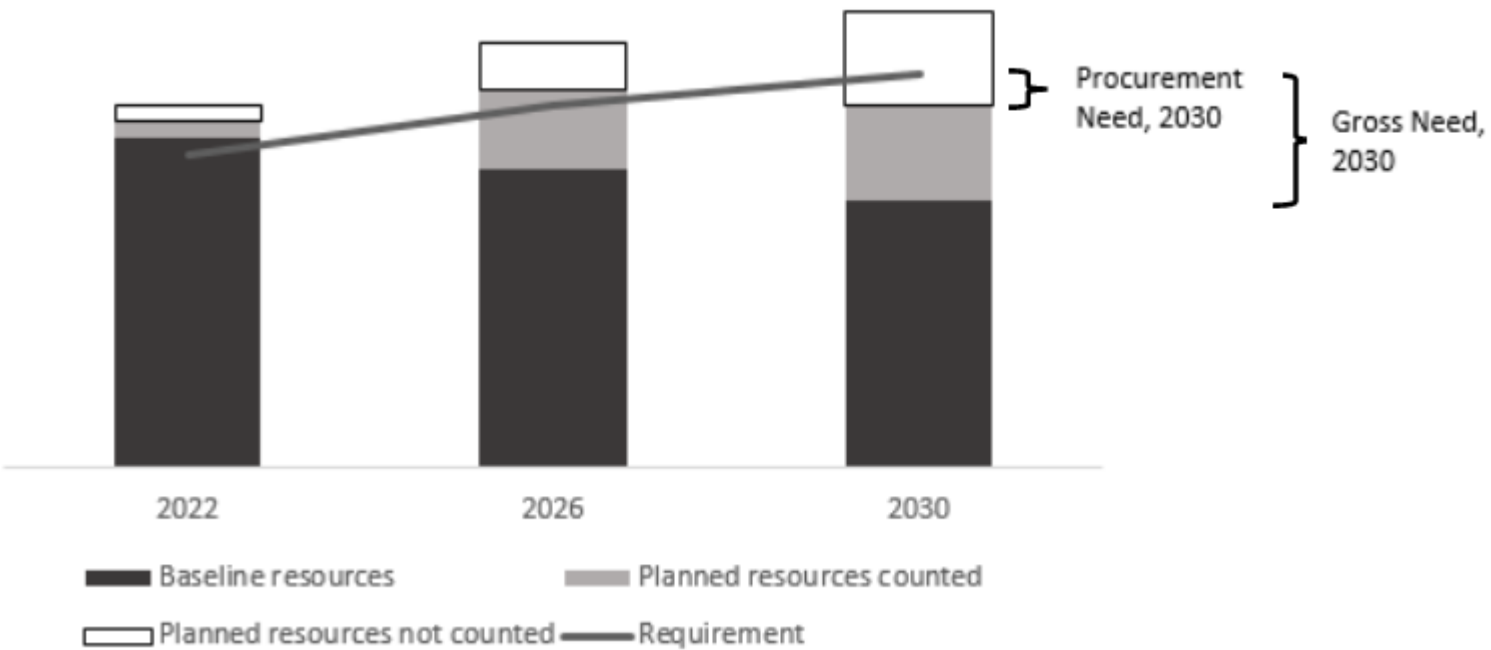
Questions?



Need determination

Need determination - *background & context from Procurement Framework Staff Proposal*

- Need determination is the step of identifying what should be procured to meet a planning requirement



Planning standards: background and proposed use in this Ruling

- 15-17% planning reserve margin (PRM) adopted in D.04-01-050 was derived from studies that assumed that load should not be shed more frequently than once in every 10 years (i.e., Loss of load expectation no higher than 0.1)
- In the past, the CPUC has used a planning reserve margin range of 15% to 17% for long-term planning
 - Involves contracting for and building new resources
 - Development risk gives rise to uncertainty about amount of projects that will ultimately materialize
 - “Lumpiness” of new resources should allow some flexibility in determining the most cost-effective set
- For its short-term resource adequacy program the CPUC has used a 15% planning reserve margin
 - Lower end of the long-term planning range because resource adequacy is a year-ahead contracting exercise that is largely made up of resources that are already built
- Ruling recommends 20.7% PRM for 2024-2026 for specific purpose of this proposed procurement, and also seeks comment on whether 20.7% PRM should be used for long-term planning in IRP more broadly

Analysis of need in 2024-26 timeframe - overview

- Assesses difference between resource adequacy requirement and resources
- Resource adequacy requirement set by 1-in-2 annual managed peak plus the assumed PRM
- NQC of expected resources in each year:
 - 2019-2020 IRP RESOLVE/SERVM baseline generator list updated with additional projects added to the CAISO Master File
 - Further changes to this IRP baseline -
 - Additional contracted resources included in the individual IRPs of all LSEs filed on 9/1/2020
 - Inclusion of generic capacity sufficient to meet 100 percent of the 3,300 MW of NQC needed to satisfy the requirements of D.19-11-016
 - Removal of units assumed to retire
 - Alignment of import accounting with SERVM's view, which includes 5,000 MW of unspecified imports plus specified imports from Hoover, Palo Verde, Intermountain Power Plant, and Sutter

Analysis of need in 2024-26 timeframe - overview

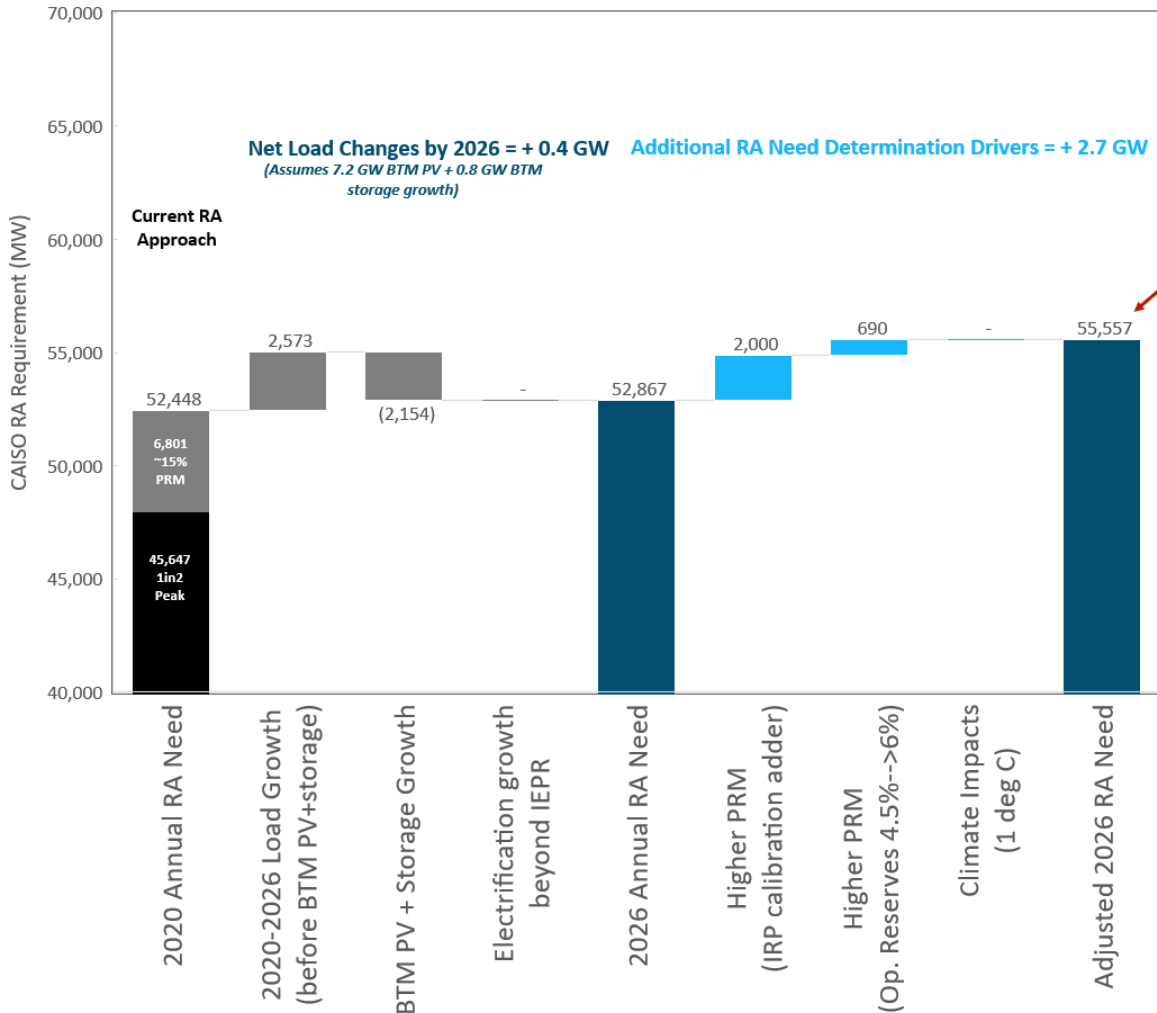
- NQC of expected resources in each year (continued):
 - Adjustments to resources' NQC, by year -
 - Resources on the CPUC's 2021 NQC list use the September NQC
 - The limited number of resources not on the NQC list use a technology-specific NQC multiplier, consistent with the 2019-2020 Inputs and Assumptions
 - For wind and solar resources effective load carrying capability (ELCC) assumptions were developed by transitioning from the resource adequacy program's September ELCC to the RESOLVE ELCC surface model for years 2022 through 2026 (representing annual ELCC values)

Analysis of need – Stack Analysis Model steps

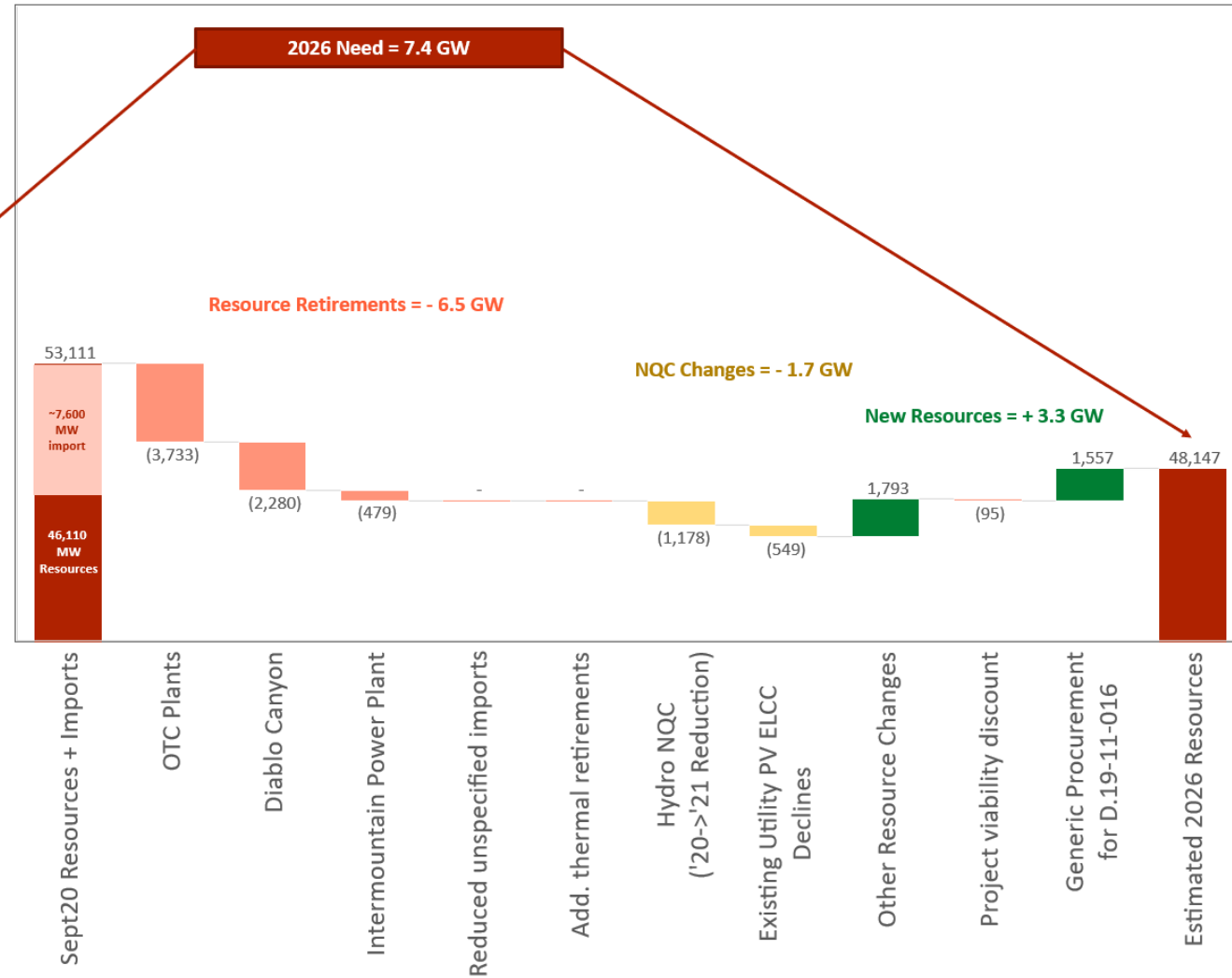
- Stack Analysis Model is available at the [IRP Procurement Track webpage](#)
- “ReadMe” tab provides step-by-step approach to conduct analysis
- Deterministic model
- All inputs and formulae available for stakeholders to review
 - Except details of new in-development resources in LSEs’ 9/1/2020 IRPs, due to confidentiality restrictions
- Some analysis steps are described in the context of the “waterfall” chart that follows, showing changes between 2020 and 2026

Mid Need Scenario (2026): Includes resource changes, discounted in-development resources and PRM

CAISO RA Requirement Changes

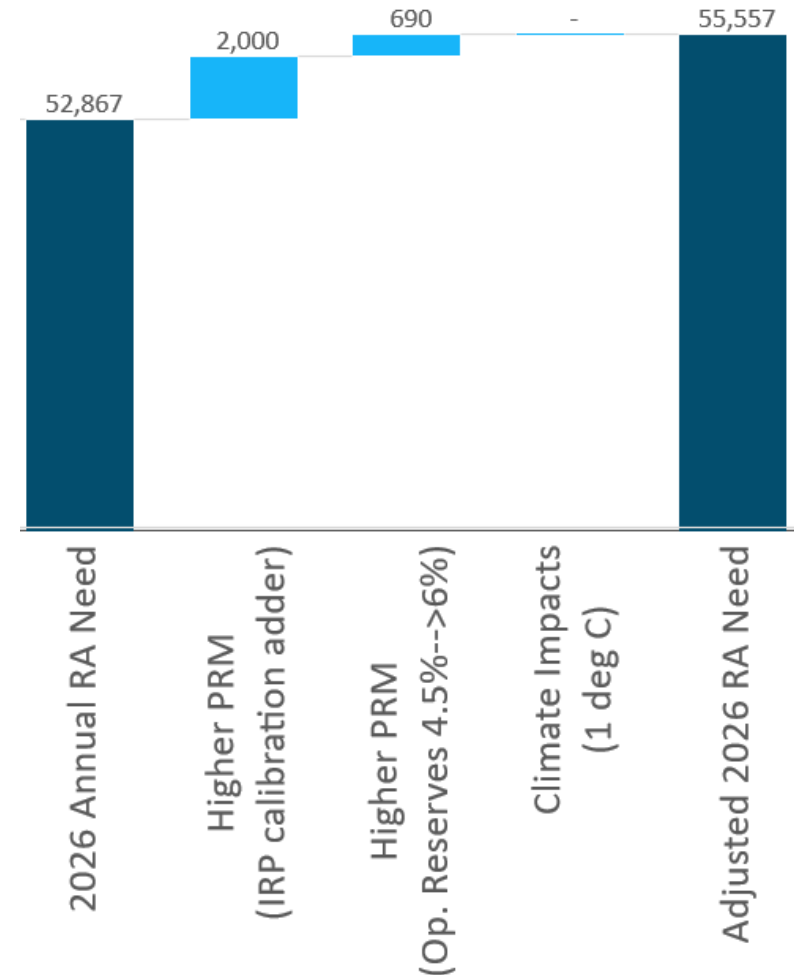


CAISO RA Resources Changes

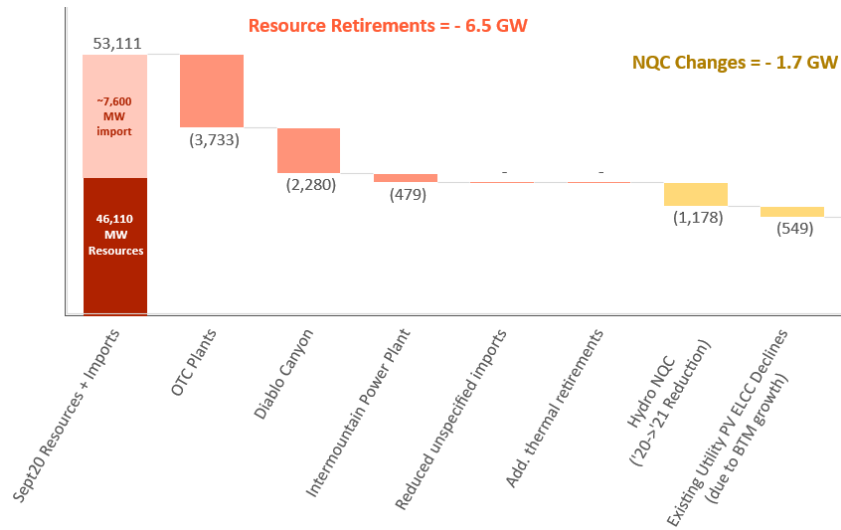


Changes between 2020 and 2024-2026 – planning reserve margin

- IRP calibration adder of 2 GW
 - Represents higher PRM needed to meet 0.1 LOLE, per RESOLVE and SERVVM calibration, from 2026
 - Also includes calibration for some differences in dispatch between RESOLVE and SERVVM models that remained after the 2019 calibration exercise, as flagged during preparation of 2019-20 RSP:
 - Wind, in-state hydro, thermal, intra-hour imports and exports, Pacific Northwest imports
 - Ruling proposes this be applied from 2024 to accelerate procurement, given tightening conditions indicated by August 2020 rotating outages
- Operating reserves increase of 1.5%, from 4.5% to 6%
 - Previously IRP reliability modeling using SERVVM assumed 4.5%
 - CAISO’s interpretation of Western Electricity Coordinating Council’s rules is that 6% is the level at which rotating outages would be initiated



Changes between 2020 and 2024-2026 – resource reductions

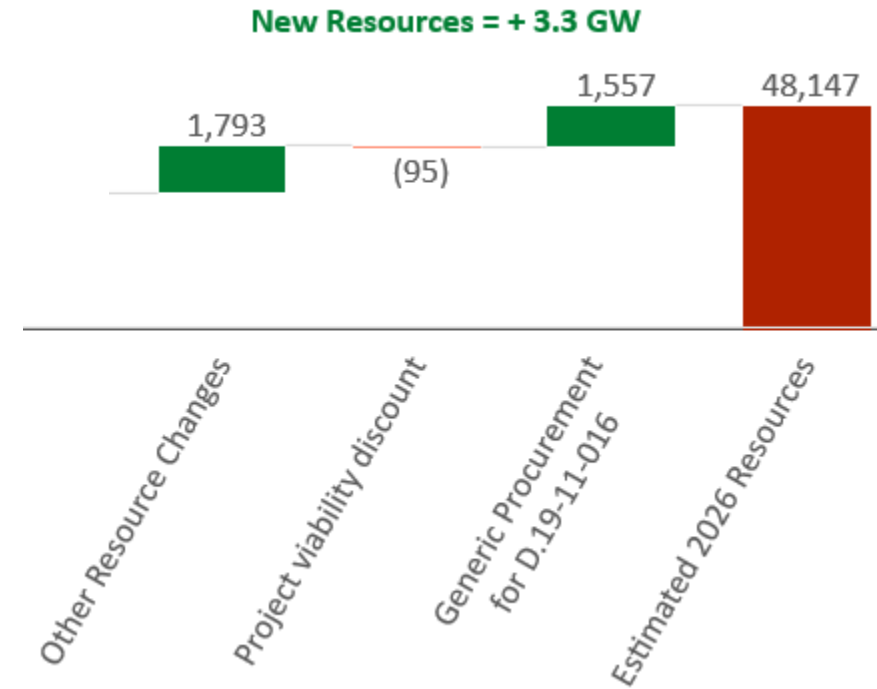


- 2020 resources total 53,111 MW
 - 52,996 MW per 2019-20 IRP baseline
 - 115 MW per LSEs' 9/1/2020 IRPs
- “Mid Need” scenario assumes announced retirements only
- “High Need” scenario assumes reduced imports and additional thermal retirements
- Hydro’s NQC mid-decade assumed to be per 2021 CPUC NQC list: 1.1 GW lower than 2020
- Existing utility-scale photovoltaic (PV) solar’s ELCC assumed to decline by 0.5 GW by mid-decade from current resource adequacy program’s ELCC, due to projected behind-the-meter PV growth, which reduces utility-scale PV ELCCs

Resource Type	Updated 2019-20 IRP Baseline						
	2020	2021	2022	2023	2024	2025	2026
Thermal	29,495	29,315	28,481	28,481	25,627	25,627	25,627
Nuclear	2,280	2,280	2,280	2,280	2,280	-	-
Geothermal	1,242	1,173	1,173	1,173	1,173	1,173	1,173
Biomass	584	572	574	574	574	574	574
Hydro	5,387	4,304	4,304	4,304	4,304	4,304	4,304
Wind	870	870	870	870	870	870	870
Solar	1,646	1,700	1,541	1,336	1,230	1,168	1,097
Hybrid	-	-	-	-	-	-	-
Energy Storage	149	512	512	512	512	512	512
Pumped Hydro Storage	1,622	1,579	1,579	1,579	1,579	1,579	1,579
Demand Response	2,195	2,195	2,195	2,195	2,195	2,195	2,195
Unspecified Imports	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Specified Imports	2,526	1,981	1,981	1,981	1,981	1,502	1,502
TOTAL	52,996	51,479	50,489	50,284	47,323	44,503	44,432

Changes between 2020 and 2024-2026 – resource additions

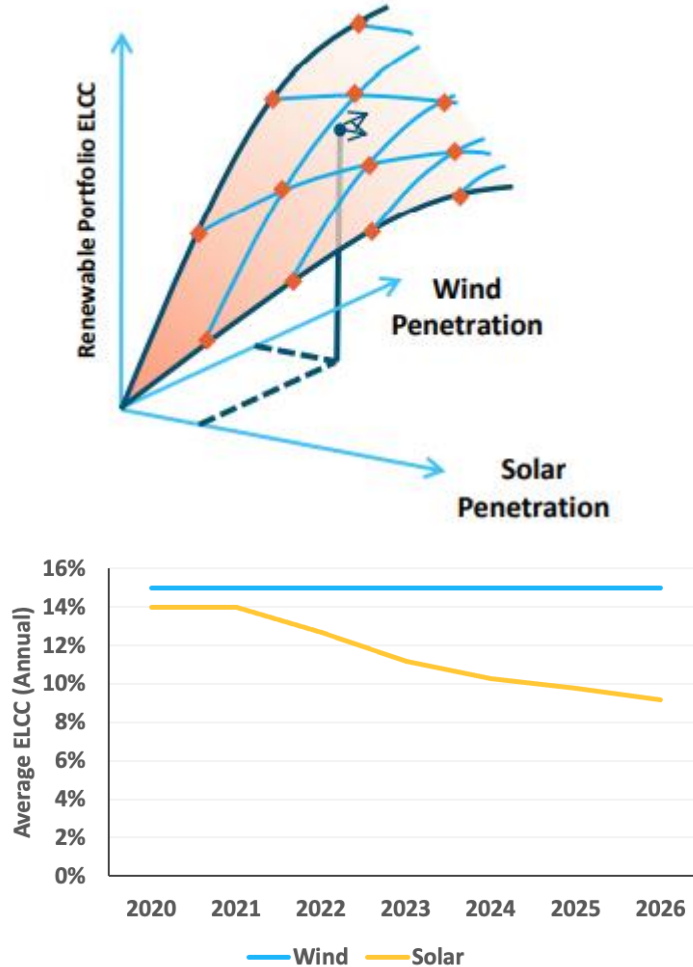
- Additional contracted resources per LSEs' 9/1/2020 IRPs; contracted & approved but not online as at 6/30/2020
- Viability discounting of capacity to account for development risk
 - Derived by staff from ratings provided by LSEs
 - Discount factors reduce over time; small impact by mid-decade
 - 5% discount applied where LSEs did not provide data
- Analysis assumes 100% compliance with D.19-11-016 to avoid finding duplicative procurement need
 - Staff assessed each resource's "incrementality" re D.19-11-016 (i.e., ability to count towards that order)
 - Analysis conducted at system level, not LSE level
 - IOUs' storage projects checked for incrementality for D.19-11-016 vs. meeting Assembly Bill 2514 (2010) storage mandate or other requirements
 - In years where there are insufficient contracted resources to meet D.19-11-016 staff assumed generic capacity would come online one year later



D.19-11-016 Incrementality Accounting							
	NQC MW						
	2020	2021	2022	2023	2024	2025	2026
Procurement Requirement	-	1,650	2,475	3,300	3,300	3,300	3,300
Progress towards D.19-11-016	311	746	1,245	1,513	1,533	1,593	1,635
Remaining Generic for D.19-11-016	-	-	754	1,080	1,637	1,617	1,557

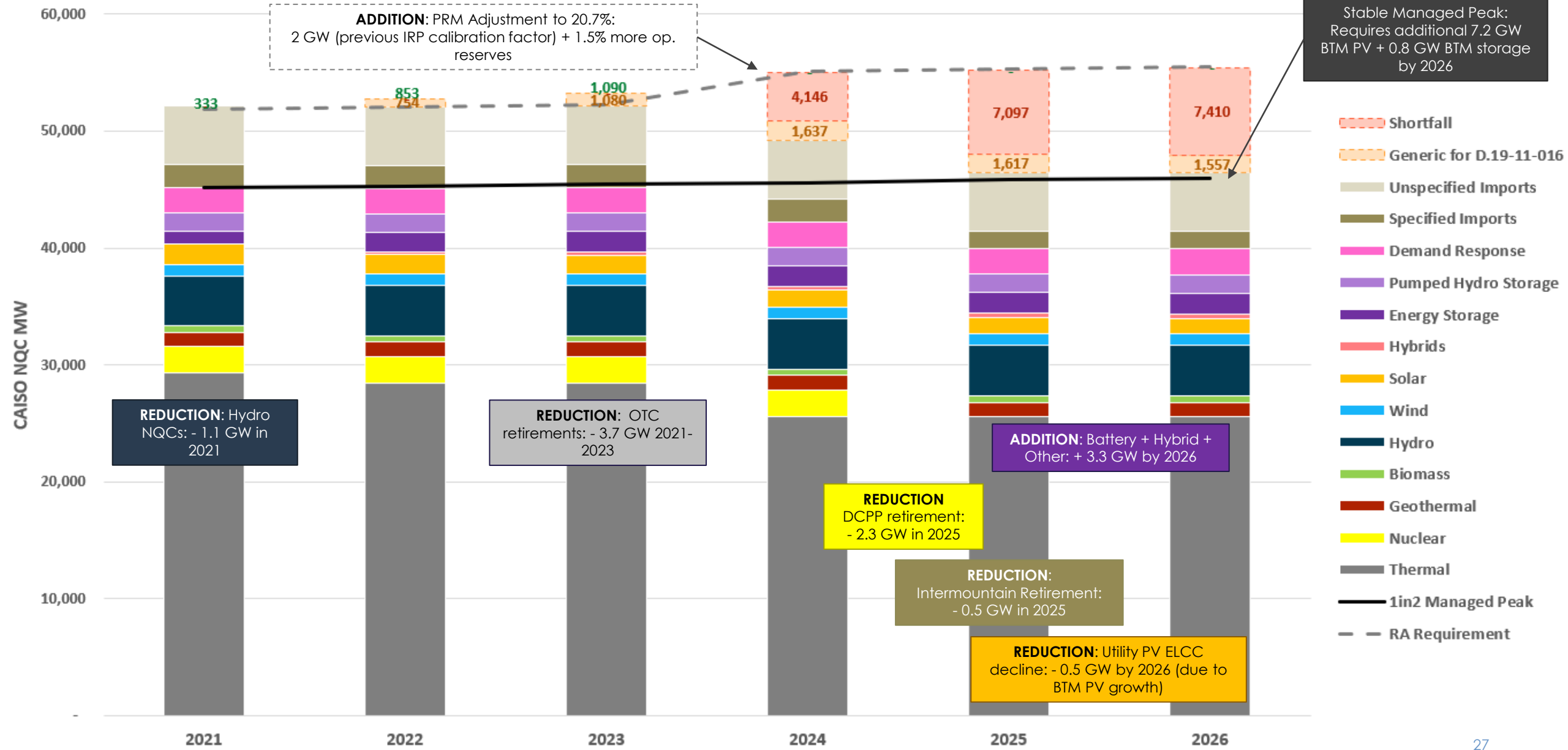
Changes between 2020 and 2024-2026 – NQC assumptions

Technology	NQC %
Biomass	75%
Geothermal	78%
Small Hydro	51%
CHP	64%
Nuclear	99%
Thermal	96%
Hydro	68%
Pumped Hydro Storage	83%
Thermal	96%
Energy Storage	100%
Demand Response	100%
Imports	100%
Specified Imports	100%

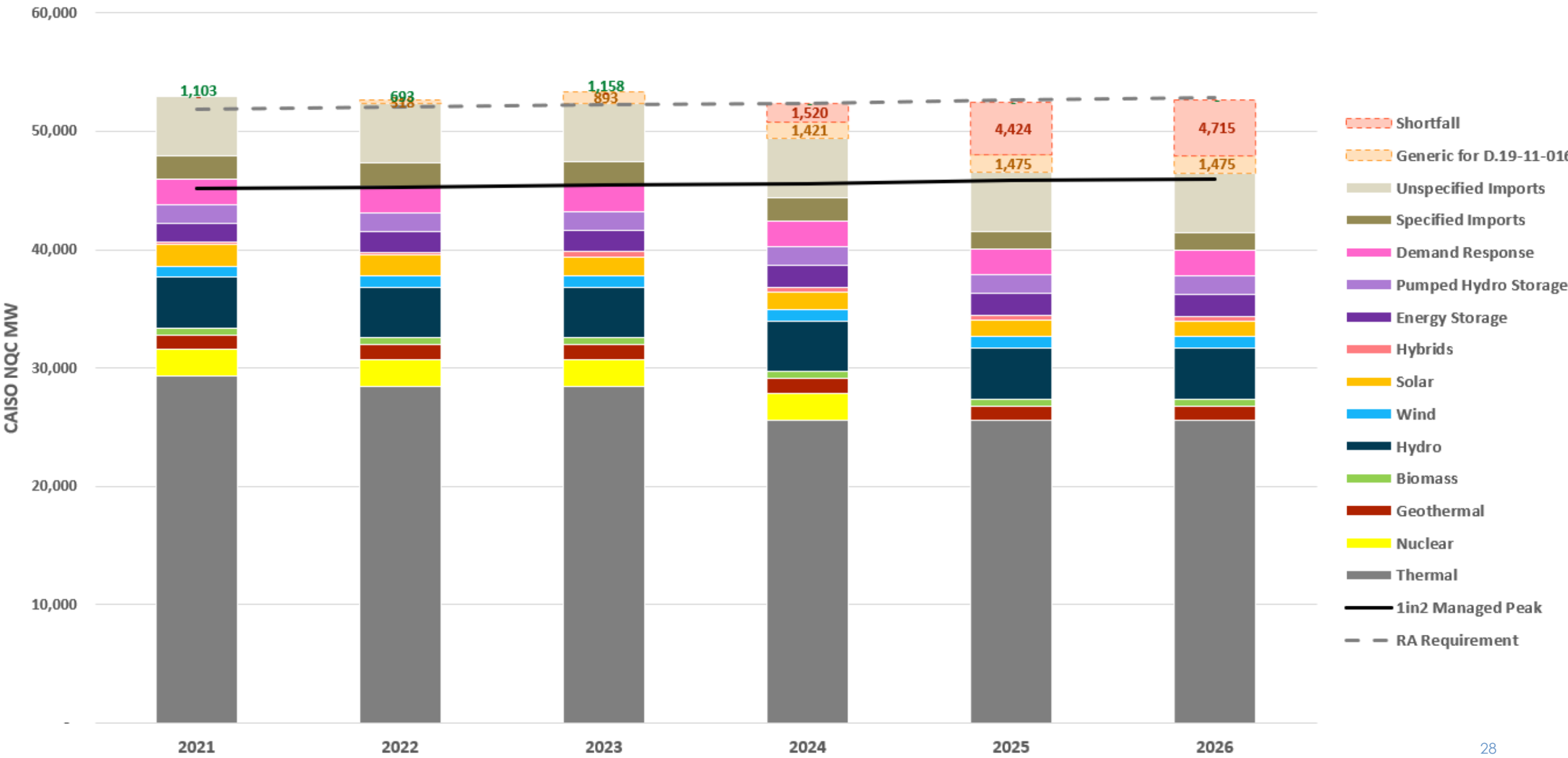


- Consistent NQC % for non-wind and solar applied across all years of analysis
- NQC % for wind and solar:
 - Developed using RESOLVE's ELCC surface
 - Surface provides annual portfolio ELCC for behind-the-meter (BTM) PV + utility PV + wind
 - BTM PV credited at IEPR peak reduction (per resource adequacy program approach)
 - Wind ELCC kept constant at Sept 2020 15% value
 - Utility PV ELCC declines with increasing BTM PV penetration (14% in 2020 to 9% in 2026)

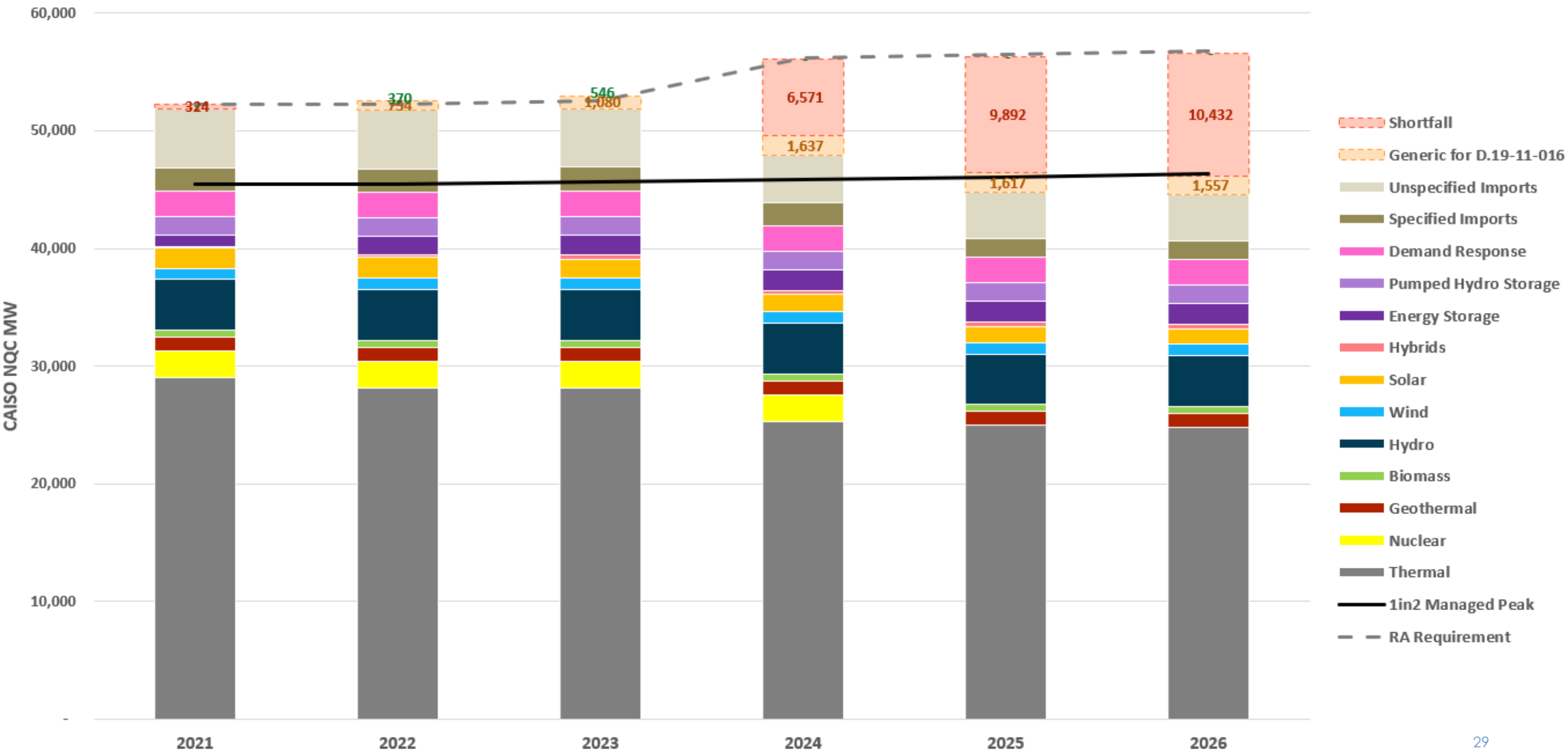
CAISO RA Stack by Resource Type (Mid Need)



CAISO RA Stack by Resource Type (Low Need)



CAISO RA Stack by Resource Type (High Need)



Need determination – scenario comparison

- Mid Need: Includes resource changes and PRM increase
- Low Need: Resource changes only, with no viability discount, and no PRM increase
- High need: Even higher PRM and less imports

Ruling Table				
Item	Mid Need	Low Need	High Need	
Assumptions (by 2026)				
PRM	20.7%	14.9%	22.5%	
Unspecified imports (NQC MW)	5,000	5,000	4,000	
OTC unit retirements (NQC MW)	(3,733)	(3,733)	(3,733)	
Diablo Canyon retirement (NQC MW)	(2,280)	(2,280)	(2,280)	
Additional thermal retirements (NQC MW)	(479)	(479)	(1,294)	
Other resource changes incl. additions (NQC MW)	1,793	1,792	1,795	
Outputs				
2024 NQC shortfall (MW)	4,146	1,520	6,571	
2025 NQC shortfall (MW)	7,097	4,424	9,892	
2026 NQC shortfall (MW)	7,410	4,715	10,432	

Timing of proposed procurement

- Need starts in 2024 but Ruling proposes a significant proportion should come online from 2023 to manage risk of delay leading to reliability shortfall

Table 2. Need Determination by June 1 of Each Online Year (MW NQC)

Need Determination and Required NQC	2023 (Aug 1)	2024	2025	2026	Total
System Resource Adequacy Need (cumulative)	-	4,146	7,097	7,410	7,410
System Resource Adequacy Need (annual additions)	-	4,146	2,951	313	7,410
Accelerated capacity requirement (approx. 40% by prior year)	1,658	3,668	1,896	188	7,410
Accelerated capacity requirement, conversion to round numbers (recommendation)	1,800	3,700	2,000	-	7,500

Resources eligible to meet identified need

- Ruling proposes that of the total procurement:
 - Geothermal and long-duration storage to each comprise at least 1,000 MW NQC, to provide firm capacity and resource diversity, consistent with RSP findings
 - Remainder to be “all source” except fossil-fuel development at new sites
- Rationale:
 - Retiring resources are firm capacity resources;
 - More resource diversity will augment the significant volumes of solar, battery storage, and solar plus storage procured in recent years; and
 - RSP identified need for some resources (chiefly long-duration storage) with long development lead times that would need to start development now to begin commercial operation by mid-decade

Table 3. Total Recommended Mid-Term Procurement Requirements (in NQC MW)

Type of Resource	2023	2024	2025	Total
Geothermal resources	-	-	1,000	1,000
Long-duration storage resources	-	-	1,000	1,000
Any type of resource	1,800	3,700	-	5,500
Total	1,800	3,700	2,000	7,500

Questions?



Need allocation

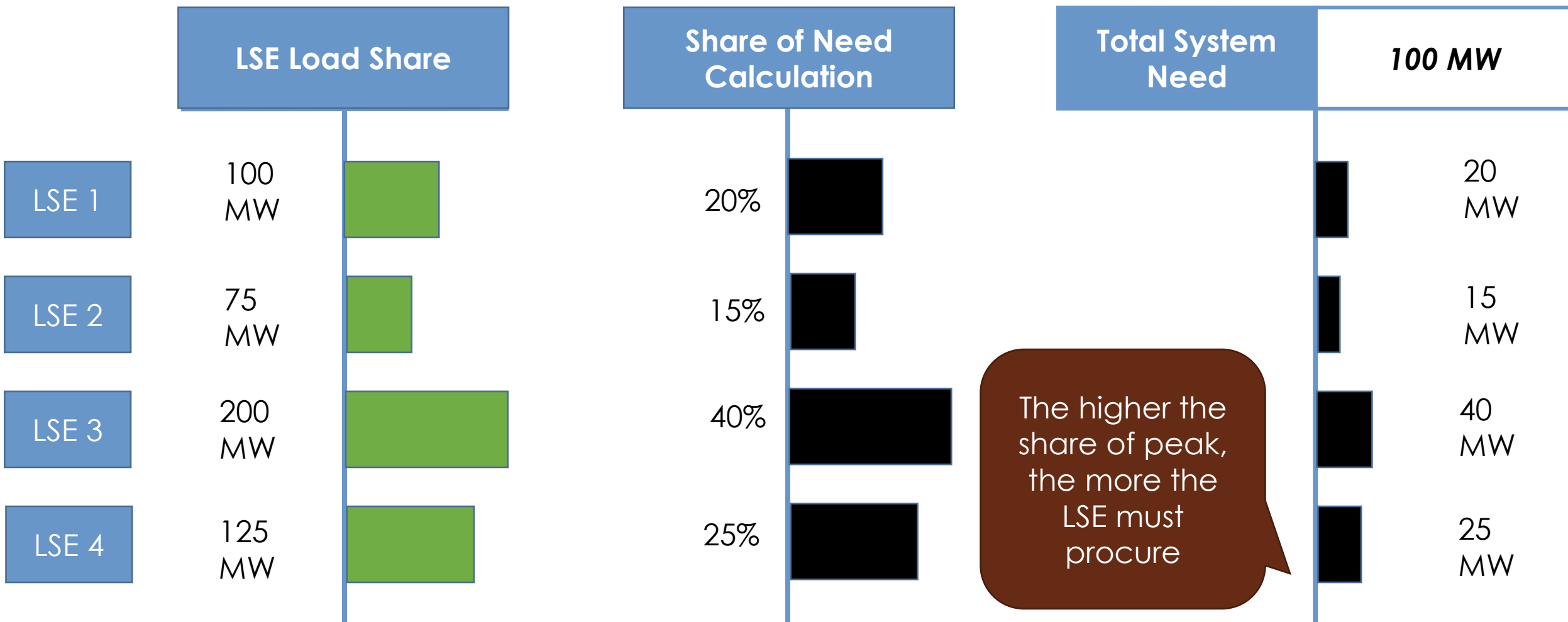
Need allocation – overview

- Allocate the MW need based on:
 - Share of peak demand only
 - LSE contract position by mid-decade
- Both approaches assign responsibility for full amount identified in the Need Determination stage
 - Accounting for contracts in addition to an LSE's share of peak demand skews more responsibility to those LSEs who make up a larger share of the projected capacity shortfall
- Taking contract positions into account allocates relatively more new procurement responsibility to electric service providers (ESP) and community choice aggregators (CCA), and less to investor-owned utilities (IOU), since IOUs have relatively more contracts in place by mid-decade

Need allocation – based on LSE Peak Share

- This approach is consistent with how the CPUC established need allocation in D.19-11-016
- Method:
 - Assign requirement to each LSE: share of system peak plus “PRM”
 - Need allocation formula:
 - "Peak Share Allocation": $\text{LSE A need} = \text{System need} \times \text{LSE A peak share}$

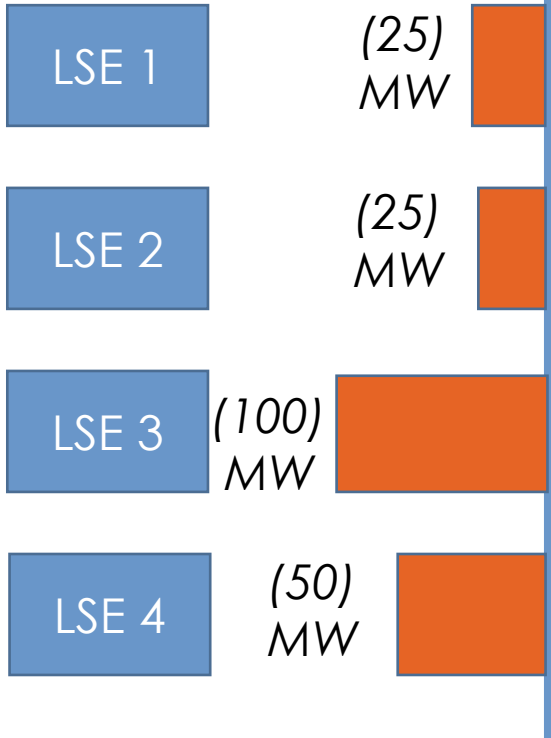
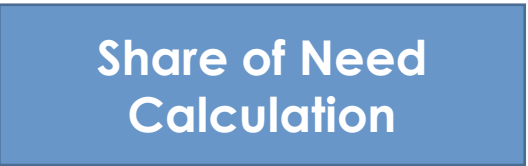
Need allocation – based on Peak Load Share



Need allocation – based on LSE Contract Position

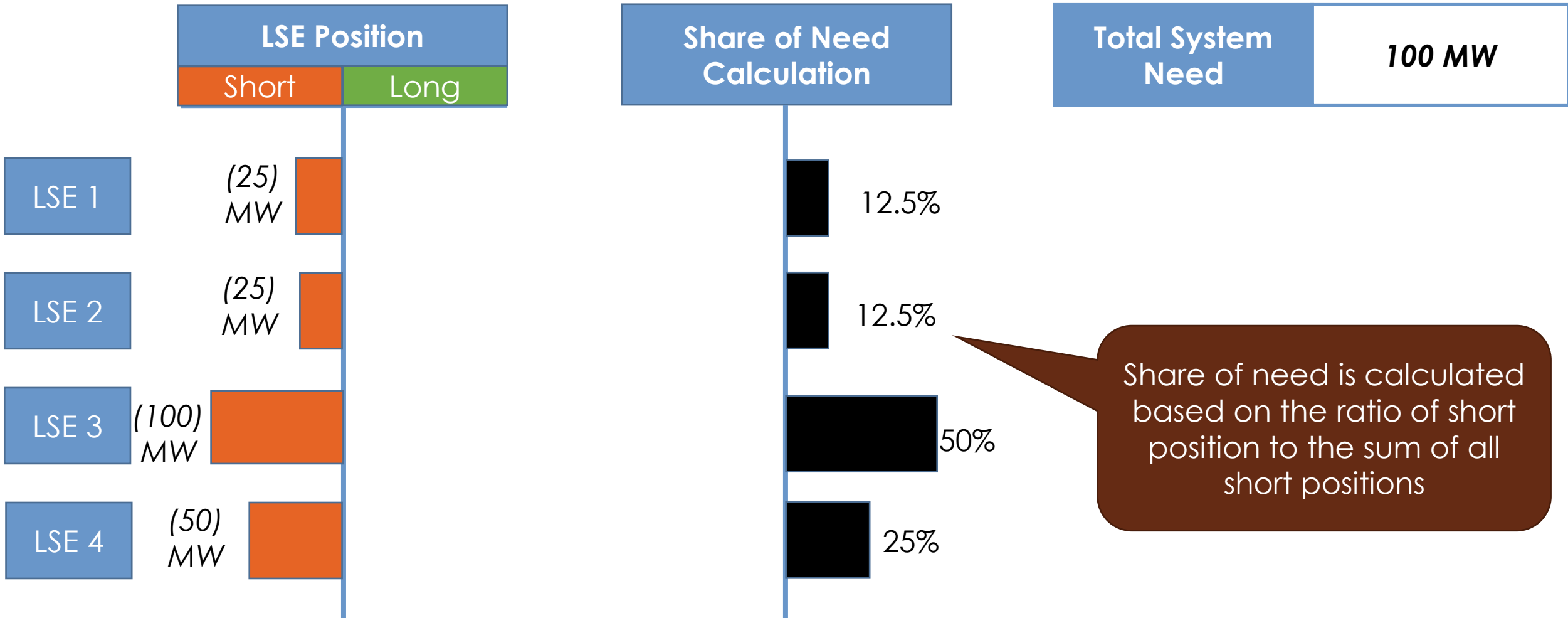
- Draft LSE Contract Position method pro-rates need based on LSEs' current portfolio positions from 2024-2026
- Method:
 - Extract relevant data from LSEs' 9/1/20 IRP filings: contracted September NQC by resource by year, existing resources and development resources as of 6/30/2020
 - Accounting for resources that have already been CAM'd: remove resources that non-IOUs counted as CAM resources, then allocate all CAM resources to all LSEs using the 2021 RA peak load share
 - Any LSEs short on D.19-11-016 procurement are assumed to fulfil that need with generics
 - Assign requirement to each LSE: share of system peak plus "PRM"
 - Subtract each LSE's requirement from their contracted resources, by year; negative value is a shortfall, positive is a surplus
 - Need allocation formula (for each year of the system need):
 - "LSE Contract Position" allocation: $\text{LSE A need} = \text{System need} \times \text{LSE A shortfall} / \text{Total LSEs' shortfall}$

Need allocation – based on LSE Contract Position

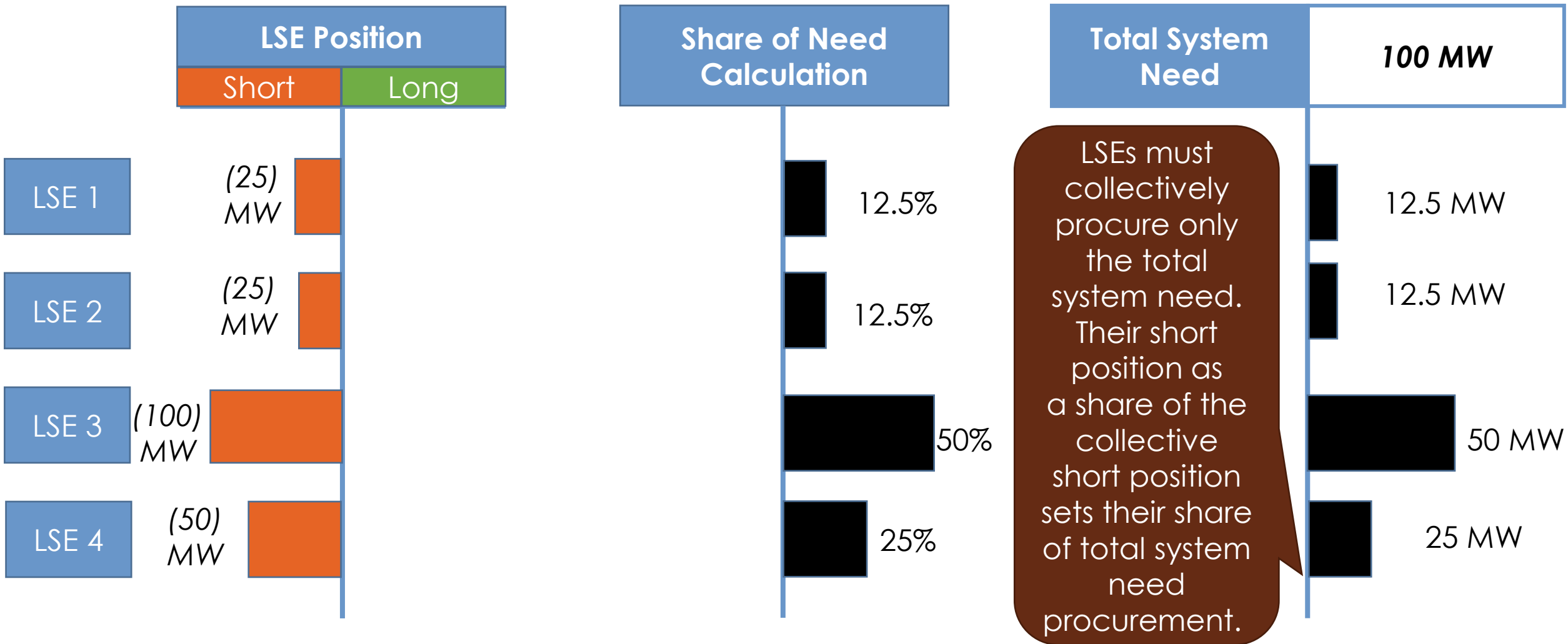


Based on Resource Data Template (RDT) contract data, the size of each LSE's short position is determined for each year

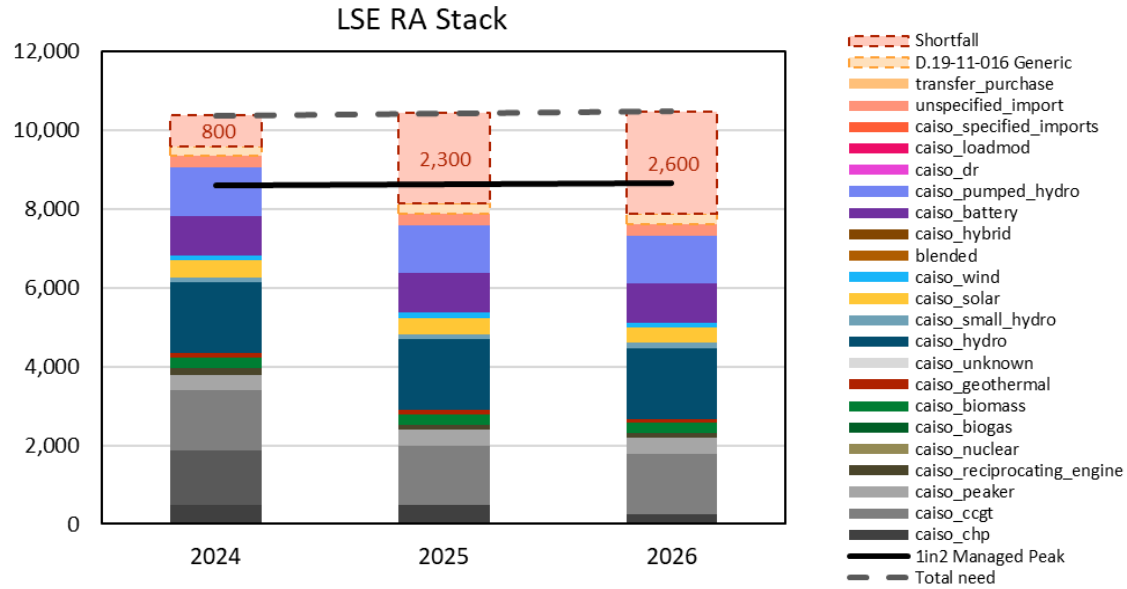
Need allocation – based on LSE Contract Position



Need allocation – based on LSE Contract Position

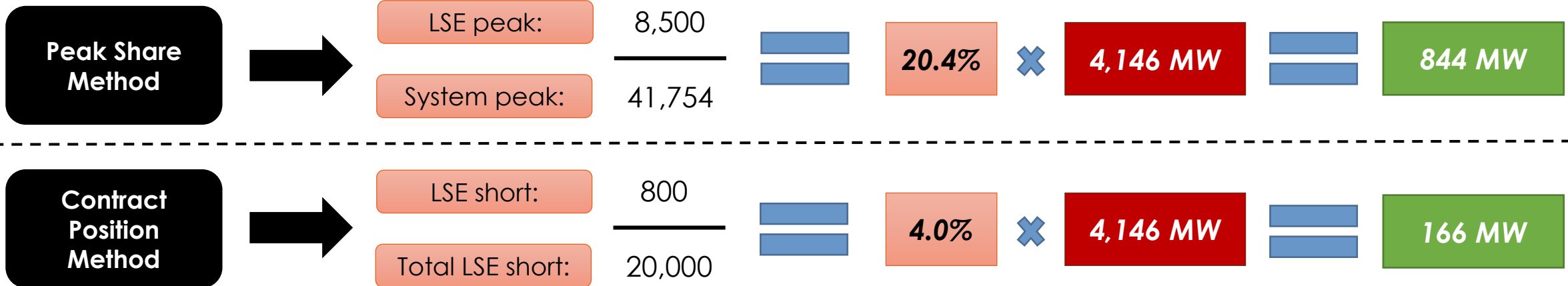


Need allocation example, LSE A – 2024



- LSEs with higher peak load shares may have to procure more under the Peak Share Method compared to the Contract Position Method

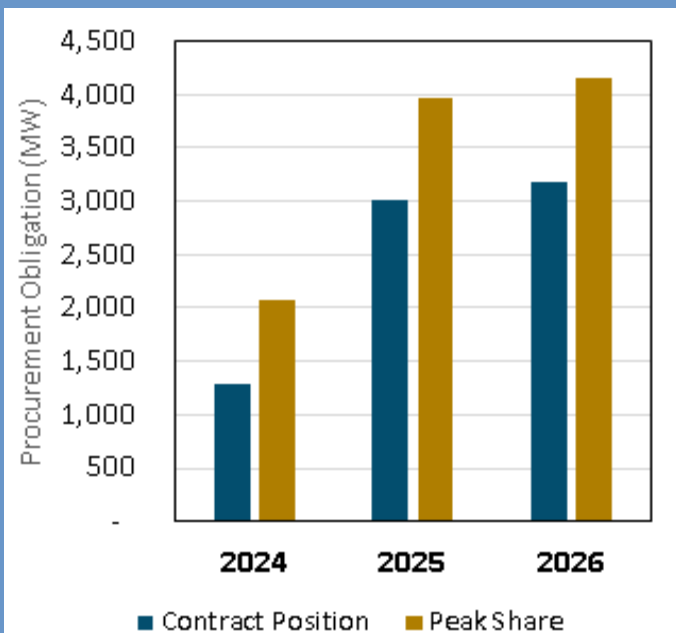
LSE Share of Procurement: System Shortfall: LSE procurement need:



Need allocation – methodology comparison

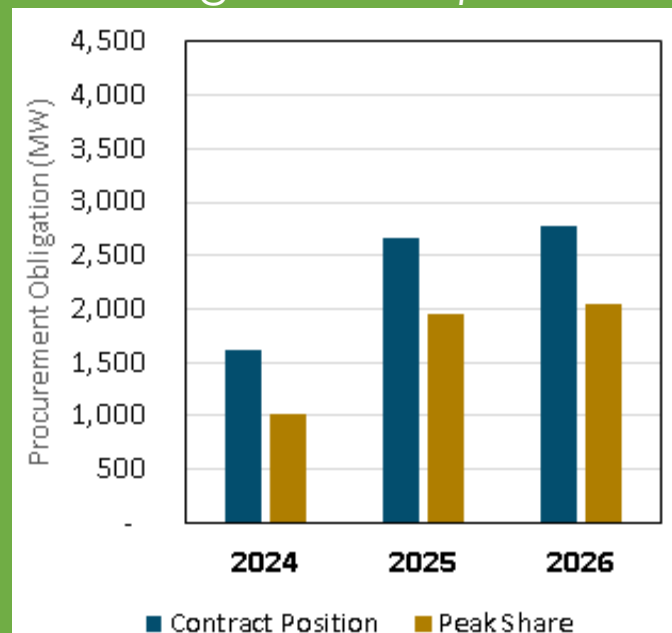
IOUs

IOUs have the largest 2025-2026 procurement in both cases



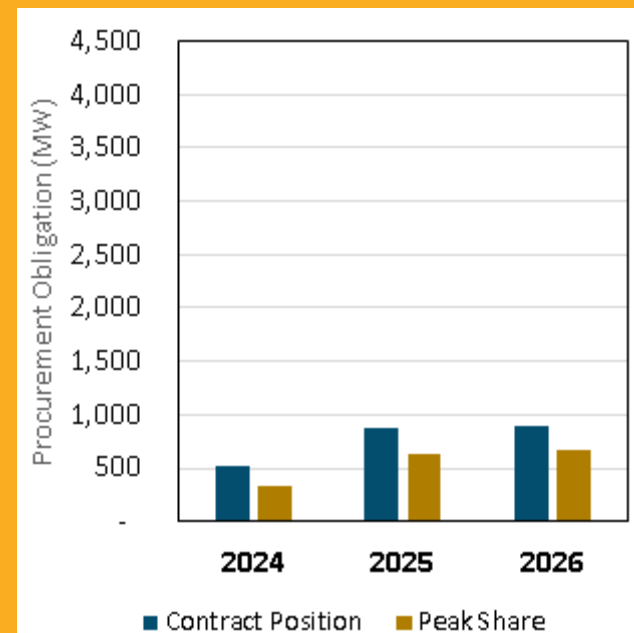
CCAs

CCAs and IOUs have similar need using *contract position*



ESPs

Smaller total procurement need w/ less variation across cases



Data Vintage

- Under the LSE contract position method, LSE positions would be determined based on their 9/1/2020 IRP filings
 - Only existing resources and development resources with executed and approved contracts as of 6/30/2020 are considered for need allocation
- While this data will not include more recent procurement (i.e. LSEs will have entered into new contracts since 6/30/2020 that are not being counted here), the relative impact on any LSE should be minimal
 - If newer data was used instead and more recent contracts were counted in an LSE's baseline, their shortfall and need allocation would decrease, but those contracts could not be counted for compliance
 - If an older data vintage is used and more recent contracts are not included in an LSE's baseline, their shortfall and need allocation will increase, but those contracts can be counted for compliance

Confidentiality

- Under the LSE contract position method, LSE positions would specifically come from LSE "Resource Data Templates" (RDT), which contain confidential contract data
- Different LSEs claimed varying levels of confidentiality over their plans. Some narrowly claimed confidentiality for specific fields in their RDTs, while others claimed blanket confidentiality for their entire template.
- Is an LSE's aggregate contract position in the 2024-2026 timeframe confidential?
 - This will determine if the CPUC can publish LSE-by-LSE procurement obligations, as was done in D.19-11-016

Load Migration

- Two options considered to account for load migration that will inevitably occur by 2026
 - Set procurement obligations based on LSE load at the time of the order and account for any load migration through cost allocation (recommended in ruling)
 - More details on this in the following section
 - Adjust allocations annually as new LSE load forecasts, as well as data about contracts and online resources, becomes available
- The CPUC must balance precision in assigning procurement obligations with maintaining regulatory certainty for LSEs and market participants

Questions?



Procurement entity direction, backstop procurement & cost allocation

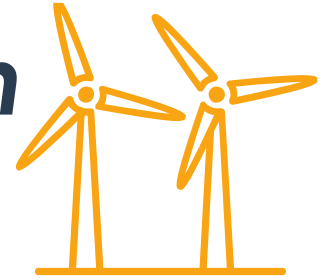
Procurement entity direction

- Refers to requirements the CPUC may have regarding which entities conduct procurement
 - Can be distinct from which LSEs are allocated need
 - Procurement entities are those which will enter into some form of offtake contract with the resource owner, or may own the resource directly
- Ruling proposes that all LSEs be required to self-provide their allocated procurement need

Backstop procurement

- IOUs to backstop in the event of non-compliance by non-IOUs
- Geothermal and long-duration storage resources:
 - Ruling proposes 8/1/2023 as key milestone for the CPUC assessing LSEs' progress and potentially appointing IOUs to take over as procurement entities for these resources
- Other resource types, of up to 5,500 MW NQC of the procurement need:
 - Ruling proposes that aspects of D.19-11-016 associated with backstop procurement, recently adopted in D.20-12-044, be continued for this new procurement. In broad terms, this means:
 - Continuing biennial compliance filing requirements (currently scheduled on February 1 and August 1 of every year) through at least 2026, and
 - Triggering backstop procurement to be performed by the IOUs after each February showing, to the extent LSEs do not show enough progress toward meeting the capacity requirements for the upcoming summer season
 - There would also be an additional summer trigger point, to occur after the final compliance filing associated with the new procurement requirements

Cost allocation - *background & context from Procurement Framework Staff Proposal*



- Required when an entity procures a resource to serve customers that it is not responsible for serving; closely related to
 - Need allocation; and
 - Procurement entity direction
- Cost allocation mechanism (CAM)
 - Since adoption in Long-term Procurement Plan (LTPP) proceeding, CAM has been applied to support new generation to support reliability
 - Limited to instances where IOUs procure on behalf of all customers in their territory
- D.19-11-016 requires "modified CAM"
 - Live topic in IRP proceeding
- Enabling action to developing IRP Procurement Framework:
 - Consider cost allocation challenges associated with procurement need determination and allocation approaches discussed earlier

Cost allocation

- Ruling proposes self-provision, which helps reduce cost allocation between LSEs
- Power charge indifference adjustment (PCIA) vintaging to address cost of load migration from IOUs to non-IOUs
 - Procurement obligations based on LSE load at the time of the order
 - The current PCIA mechanism would allocate the costs from load-shifting for the vintage of contracts involved here (2023-2025)
 - Alternatively, the vintage could reflect the date when the procurement order is issued
- “Modified cost allocation mechanism” to be developed pursuant to D.19-11-016 to address costs arising from backstop procurement

Questions?



Approval, compliance & enforcement

Approval & compliance

- IOUs to seek approval via Tier 3 Advice Letters or applications, at their discretion
 - Except full application required for any contract with a fossil-fueled resource
- To be compliant resources must be:
 - Of an eligible resource type, discussed in the need determination
 - Incremental to the baseline used in the need determination
 - Not already being used to count towards D.19-11-016 or the storage mandate
 - Contracted for at least 10 years from the compliance date required
- Compliance to be determined based on marginal ELCC projected by the CPUC

Penalties for non-compliance

- In addition to backstop provisions, ruling proposes a penalty for failure to provide the required capacity
- Applicable to any LSE
- In form of citation and penalty set at cost of new entry (CONE) in the event of non-compliance
 - CONE is published annually by the California Energy Commission

Relationship with future procurement in IRP

- Staff are currently analyzing and aggregating LSEs' IRPs filed on 9/1/2020 to determine whether additional procurement, incremental to that proposed in this ruling, should be ordered out to 2030 to address both reliability and environmental goals
 - Potential for CPUC to adopt a 38 MMT target
 - Additional procurement for the mid-term timeframe may overlap with procurement proposed in the Ruling
- Sequence of procurement orders may lead to complex compliance and monitoring arrangements
- Additional challenges: load migration and dealing with resource eligibility (new vs. existing, and technology type)
- Ruling seeks comments on whether it would be more straightforward to address the longer-term capacity requirements via approaches such as:
 - Modifications to the resource adequacy program requirements
 - Instituting a forward system resource adequacy requirement

Questions?



Next steps

Next steps

- Remaining clarification questions?
- Comments (3/19/2021) and replies (4/2/2021)
- PD and Decision on Mid-Term Reliability procurement (Q2 2021)

Questions?



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California Public Utilities Commission

IRP Procurement Track

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