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APPENDIX A

Report on Transactability within the Slice of Day Resource Adequacy Framework

February 2026

CALIFORNIA PUBLIC UTILITIES COMMISSION
ENERGY DIVISION

Report Authors:
Zoe Draghi – Senior Analyst, Electric Market Design Section
Jaime Gannon – Supervisor, Electric Market Design Section

Special Thanks to Contributors:
Elijah Cohen – Analyst, Electric Market Design Section
Ryan Grieser – Senior Analyst, Electric Market Design Section
Allyson DiLorenzo – Analyst, Electric Market Design Section
Michele Kito – Program Manager, Electric Costs and Retail Choice Branch
Molly Sterkel – Director, Electricity Supply, Planning, and Costs

Contents

Tables

Figures

1. Executive Summary

This report evaluates whether transactability issues exist under the Slice of Day (SOD) Resource Adequacy (RA) framework and assesses the potential need, benefits, and feasibility of implementing an hourly load obligation trading mechanism. The analysis responds to Commission direction to examine transactability after the first year of binding SOD compliance and draws on Year-Ahead (YA) and Month-Ahead (MA) RA filings, transaction and procurement data, and observed market outcomes for the 2025 compliance year.

Need Assessment

This section examines both YA and MA compliance outcomes from the first year of binding SOD implementation. It specifically looks at whether hourly deficiencies reflected system-wide capacity shortfalls or individual portfolio misalignment, whether Load Serving Entities (LSEs) were able to cure deficiencies using existing RA market mechanisms, and whether compliance outcomes materially differed from those observed under the prior RA framework.

The 2025 RA filings demonstrated that hourly deficiencies could arise at the individual Load-Serving Entity (LSE) level in YA submissions, particularly in September, even when the system is long in aggregate across all hours. These deficiencies were concentrated in specific evening hours and were generally modest in magnitude. More importantly, MA compliance outcomes demonstrated that all LSEs successfully met their MA obligations in every hour, including the nine LSEs that had exhibited deficiencies in the YA filings.

The RA contract price data reflected that LSEs were able to procure a diverse mix of resource types between the YA and MA compliance deadlines, including 24-hour, storage, hybrid, and renewable products.

Comparisons to prior compliance years indicated that 2025 MA outcomes under SOD did not exhibit increased deficiencies or systemic shortfalls relative to the pre-SOD framework, suggesting that hourly compliance requirements did not introduce a material transactability barrier.

The RA filing and contract price data showed that LSEs were able to procure and trade sufficient capacity to meet hourly obligations, with no evidence of unresolved deficiencies or structural market barriers attributable to SOD.

Benefits and Costs

Proponents of hourly load obligation trading argue that allowing LSEs to trade obligations could improve affordability by enabling more efficient portfolio alignment and reducing incremental procurement. In theory, if surplus capacity in constrained hours could be reallocated across LSEs, by way of reallocating hourly requirements, aggregate procurement volumes could be reduced. The analysis acknowledges these potential benefits using observed system surplus in the most constrained hours.

However, several factors limit the extent to which these theoretical savings could be realized in practice. Portfolio outcomes are highly dependent on individual LSE load profiles, resource characteristics, and contracting strategies. The SOD framework already permits bilateral transactions, and the presence of multiple LSEs with differing load shapes inherently constrains the degree to which portfolios can be perfectly optimized.

The analysis also considers potential costs and risks, including impacts on reliability and the implications of further unbundling RA obligations from RA procurement. Separating load obligations from physical resource commitments to participate in the energy markets could complicate the fundamental structure of the RA framework and, if not carefully designed, introduce new sources of risk.

Feasibility

From an implementation perspective, hourly load obligation trading would introduce additional complexity into the RA compliance process. While proposals envision integrating trades into existing filing tools, such a mechanism would require new validation steps, increased coordination across LSEs, and additional Energy Division Staff (Staff) review within already constrained compliance timelines. The interaction between traded obligations, procurement showings, and the California Independent System Operator (CAISO) verification processes would need to be clearly defined to avoid conflicting requirements or unintended compliance gaps.

This report finds that while implementation is technically feasible, it would impose meaningful administrative burdens on Staff, particularly during the early years of SOD implementation.

Conclusion

Given the limited evidence of need, uncertain magnitude of benefits, and heightened implementation risks, Staff concludes that the potential gains do not outweigh the added complexity and risk of unintended consequences. Staff therefore recommends continued monitoring of market performance as the SOD framework matures.

2. Introduction and Background

2.1 Background

The Commission's adoption of the SOD framework marked a significant evolution in California's RA planning and compliance regime. Under the SOD framework, system RA requirements are expressed on an hourly basis rather than on a monthly peak to better reflect changing load shapes, increasing net peak risk, and the growing share of time-variable and use-limited resources within the portfolio. At the same time, the transition to the SOD framework preserves the foundational structure of the RA program, including monthly procurement obligations and compliance filings. The RA product itself, a Must-Offer Obligation (MOO) for capacity to bid into the energy markets, remains unchanged in the transition to the SOD framework. Under the prior framework, LSEs received 12 monthly peak obligations for their RA capacity obligations, whereas under the SOD framework, LSEs receive a 24-hour obligation for each of the 12 months of the year.

SOD replaced the prior Maximum Cumulative Capacity (MCC) peak RA construct, which was a RA program feature that limited individual (and collective) over-reliance on use-limited resources by capping the amount of qualifying capacity that could be counted towards the monthly (single peak number) system RA requirements in defined availability "buckets". The MCC buckets were a simplified way of acknowledging that there are use-limited resources, such as Demand Response, and so the MCC buckets limited the amount certain resource types could be used to fulfill the single monthly peak RA obligation.

Under the MCC framework, resources were grouped into broad monthly availability buckets that included time of day availability windows aligned with CAISO's availability assessment hours. ***Table 1*** reflects the last update to the MCC buckets made in D.22-06-050.

Table 1: Maximum Cumulative Capacity Buckets Adopted in D.22-06-050

Category	Availability	Maximum Cumulative Capacity for Bucket and Buckets Above
DR	Varies by contract or tariff provisions, but must be available Monday – Saturday, **4 consecutive hours between 4 PM and 9 PM, and at least 24 hours per month from May – September.**	8.3%
1	Monday – Saturday, at least 100 hours per month. For the month of February, total availability is at least 96 hours. January - February, May - December, **4 consecutive hours between 4 PM - 9 PM.** March - April, 4 consecutive hours between 5 PM – 10 PM.	17.0%
2	Every Monday – Saturday. January - February, May - December, 8 consecutive hours that include 4 PM – 9 PM. March-April, 8 consecutive hours that include 5 PM – 10 PM.	24.9%
3	Every Monday – Saturday. January-February, May - December, 16 consecutive hours that include 4 PM – 9 PM. March-April, 16 consecutive hours that include 5 PM – 10 PM.	34.8%
4	Every day of the month. Dispatchable resources must be available all 24 hours.	100% (**at least 56.1% available all 24 hours**)

Use-limited resources (e.g., storage or demand response with duration constraints) could only count toward RA requirements up to specified cumulative limits within those buckets. Variable Energy Resources (solar and wind) were allowed to count in Bucket 4 up to a defined limit, as a certain amount of Bucket 4 was required to be met with resources capable of providing 24-hour availability. While the MCC structure sought to ensure reliability by preventing excessive reliance on limited-duration resources, its relatively blunt bucket design was not binding and did not fully reflect the operational realities of the system's most stressed hours and also did not account for storage charging needs. As load patterns evolved and peak periods extended into the net load periods, the MCC construct provided limited visibility into how portfolios would perform across the full 24-hour profile of the system's peak day.

Under SOD, system RA requirements are established on an hourly basis using the monthly peak day profile. This approach enables the Commission to more precisely evaluate whether portfolios can meet demand and maintain reliability during each hour of the most critical day of the month. Rather than relying on broad cumulative caps, SOD introduces greater temporal granularity and explicitly evaluates what use-limited resources can provide hour by hour. This approach better aligns RA compliance with changing load shapes, increased net peak risk, and the growing share of time-variable and limited-duration resources in the portfolio. At the same time, the transition to SOD preserves the foundational structure of the RA program, including monthly procurement obligations and compliance filings.

During the development and implementation of the SOD framework, stakeholders raised questions regarding whether hourly compliance obligations could introduce transactability or efficiency challenges. In particular, some parties expressed concern that the increased temporal granularity of RA obligations could limit LSEs' ability to optimize portfolios that reflect existing monthly RA products, potentially leading to over-procurement and unnecessary costs. In response to these concerns, proposals for hourly load obligation trading were advanced as a potential mechanism to allow LSEs to trade compliance obligations, on an hourly basis, in addition to existing capacity trading mechanisms.

The Commission has considered these hourly load obligation trading proposals on multiple occasions. In D.22-06-050, the Commission identified significant complexity and administrative burden associated with hourly load obligation trading and concluded that LSEs were not precluded from transacting or swapping with one another under the SOD framework to optimize their positions. In subsequent decisions, including D.23-04-010 and D.24-06-004, the Commission reaffirmed this position, emphasizing that considerations of hourly obligation trading would be premature until SOD compliance became binding for the 2025 RA compliance year and observable evidence of transactability concerns had emerged.

In D.25-06-048, the Commission reiterated their prior reasoning and instead directed Energy Division to conduct an evaluation after the first year of binding SOD implementation to assess whether transactability issues exist and, if so, whether the implementation of an hourly load obligation trading mechanism is a reasonable solution. The Commission specified that this evaluation should consider the need, benefits and costs, and feasibility of such a mechanism.[1]

[1] R.25-06-048 at p. 87

2.2 Key Questions and Scope of Report

Consistent with Commission direction, this report is structured around the following key questions:

- **Need Assessment:** Do the SOD compliance filings demonstrate a material transactability concern, such as persistent LSE-level hourly deficiencies concurrent with a system-level net surplus or the inability to cure deficiencies? If so, do these transactability concerns indicate a need for an hourly load obligation trading mechanism?
- **Benefits and Costs:** To the extent inefficiencies are observed, would an hourly load obligation trading mechanism plausibly reduce those inefficiencies? Would the potential optimization lead to cost savings for ratepayers? Would identified potential benefits outweigh the additional complexity, administrative burden, and risk of unintended consequences identified in prior Commission decisions?
- **Feasibility:** Could an hourly load obligation trading mechanism reasonably and effectively be implemented in a manner that incorporates appropriate guardrails, fits with the RA penalty structure, and allows for necessary time for compliance reviews and corrections conducted by Energy Division staff and LSEs?

2.3 Purpose

The purpose of this report is to provide the Commission and parties with a clear, evidence-based assessment of transactability under the SOD framework, grounded in observed compliance outcomes. By distinguishing between aggregate system-level net position, LSE-level compliance, and the resolution of deficiencies over time, this report seeks to clarify whether observed challenges reflect a material need for new market constructs or instead arise from broader market dynamics or fundamental principles of the RA program.

3. Assessing Transactability Under the Slice of Day Framework

A primary question identified by the Commission is whether implementation of the SOD framework has introduced new barriers to transactability that would indicate <u>a need for an hourly load obligation trading mechanism</u>.[2] Specifically, this analysis examines: (1) whether hourly deficiencies observed in YA filings reflect system-level capacity shortfalls or LSE-level portfolio misalignment; (2) whether LSEs with YA deficiencies were able to transact to cure those deficiencies using existing market mechanisms; and (3) whether compliance outcomes observed under SOD materially differ from those under the prior RA framework.

[2] D.25-06-048, at 86-87.

This section evaluates these questions by examining compliance outcomes from the first year of binding SOD implementation, evaluating whether LSEs were able to transact to cure hourly deficiencies, and comparing compliance and procurement trends observed under the previous RA framework.

3.1 Structure of RA, RA Products, and SOD Requirements

The existence of hourly compliance obligations does not, in itself, establish a transactability concern. The SOD framework preserves the foundational structure of the RA program, including the continued use of monthly capacity procurement as the primary compliance product, while layering on an hourly view intended to better reflect evolving system conditions and net peak constraints. In practical terms, SOD improves visibility into how resources contribute during each hour of the peak day, rather than relying on a single monthly value that represents performance across all hours. The primary RA compliance products remain monthly commitments of Net Qualifying Capacity (NQC), and LSEs continue to procure RA capacity largely through bilateral contracting and existing market mechanisms. Regardless of the SOD obligations via the CPUC's RA program, CAISO continues to review generator supply plans to ensure a sufficient number of generators have pledged themselves to participate in the energy markets in a month-ahead time frame. Under the CAISO tariff, CAISO can backstop resources – and charge costs to all load – if there is a collective deficiency. Only the CPUC can penalize individual LSEs for failing to contract with sufficient generation that makes itself available in the supply plans.

SOD introduces hourly compliance obligations by allocating each LSE's monthly RA requirement across 24 hours based on its specific load profile. Similarly, resources shown for RA compliance remain monthly capacity products, but are evaluated against hourly exceedance profiles reflecting how different resource types contribute to reliability across the peak day of each compliance month. In this respect, SOD does not fundamentally alter the underlying procurement paradigm of the previous RA program. Rather, it increases the granularity with which compliance is measured.

This added granularity can reveal hourly differences between an LSE's load obligations and the hourly contribution of its contracted resources. In the early stages of implementation, some degree of portfolio adjustment can be expected as LSEs refine procurement strategies to better align with their hourly load shapes. As further discussed in Section 3.4, this can be directly observed in the compliance comparison across the 2024 SOD non-binding test year and the 2025 compliance filings.

However, increased granularity alone does not necessarily establish a transactability problem. The present policy question is whether LSEs are able to trade for and procure portfolios that satisfy their RA requirements using existing market mechanisms. Accordingly, transactability under SOD can be assessed based on compliance outcomes. Specifically, it can be evaluated based on whether LSEs were able to meet their hourly RA requirements and, where necessary, resolve hourly deficiencies using existing contracting and trading arrangements.

At the same time, RA procurement decisions occur within a broader regulatory environment. LSE portfolios are developed to satisfy multiple overlapping compliance obligations, including Renewable Portfolio Standard (RPS) targets and Integrated Resource Planning (IRP) requirements, each of which shapes portfolio composition and contracting strategies. Portfolios shown for RA compliance therefore reflect multiple regulatory objectives, and precise hourly alignment is not always achievable based on competing needs. Evaluation of compliance outcomes should recognize the inherent complexity of co-optimizing portfolios across multiple compliance standards.

3.2 Analysis of 2025 Slice of Day Compliance Filings

The central question posed by the Commission in this report is whether the first year of compliance filings under the SOD framework indicates potential transactability constraints. To assess this question, we examine whether LSEs were unable to procure or trade for capacity needed to satisfy their hourly RA obligations using existing market mechanisms.

If such a constraint were present, we would expect to observe some of the following outcomes in filings:

- LSE deficiencies could not be cured prior to MA compliance deadlines, despite aggregate system surplus; or
- Compliance outcomes materially diverged from those observed under the prior RA framework.

We can therefore look first to the 2025 SOD filings to evaluate whether these indicators appear in the compliance data.

Year-Ahead (YA) Filings

In the YA filings, across all summer months filed (May through September), aggregate shown capacity exceeded the applicable YA system requirement (90 percent of monthly RA obligations) in each hour. As a result, the system remained net long across the full 24-hour profile in each month. This result is consistent with historic RA program functioning (and system planning in general). The RA regulatory obligation ensures that there are sufficient capacity resources during the periods of time of most stressed system conditions, but in doing so, the entire portfolio for the remainder of the year will likely appear to be "long" relative to the more modest requirements during the remainder of the year.

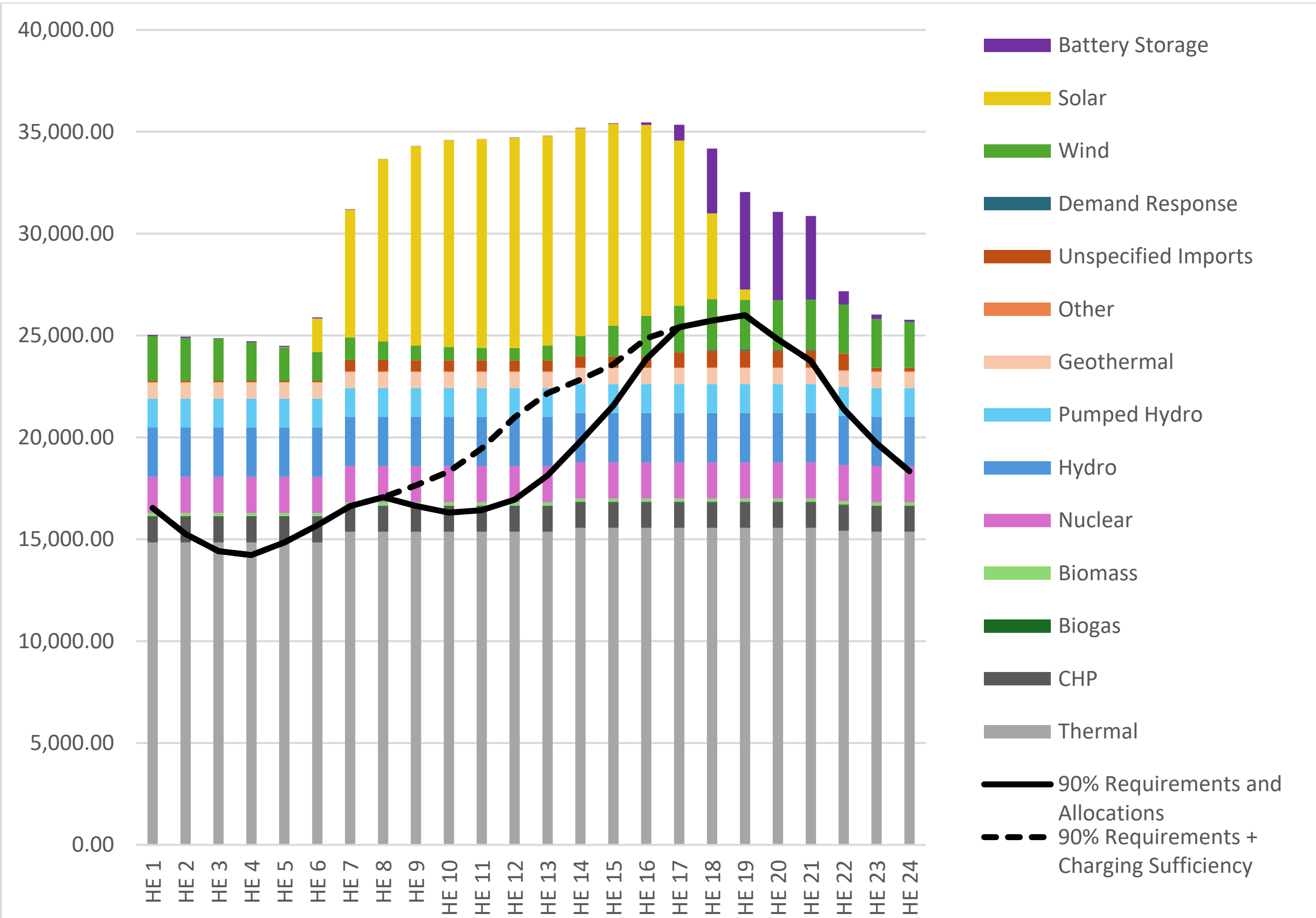
As shown below in ***Figure 1***, May represents a relatively unconstrained month. The tightest system hour occurred at Hour Ending (HE) 19, with a minimum system net position of 6,046 MW relative to the 90 percent YA hourly RA requirement, inclusive of excess energy needed to satisfy charging sufficiency. The charging sufficiency requirement is calculated as a single daily MWh obligation based on storage capacity shown and does not include an hourly allocation. For illustrative purposes in Figures 1, 2, 3, and 6, the charging sufficiency requirement is distributed across higher solar production hours, reflecting the hours during which battery resources would reasonably be expected to charge.

Further, in this context, surplus reflects capacity shown above the aggregate hourly requirement based on individually optimized LSE filings. Because each LSE optimizes its portfolio to meet its own hourly obligation, the aggregate system position reflects specific compliance showings rather than the totality of contracted capacity. This distinction is discussed further in Section 4.1.

Report on Hourly Transactability within The Slice of Day Resource Adequacy

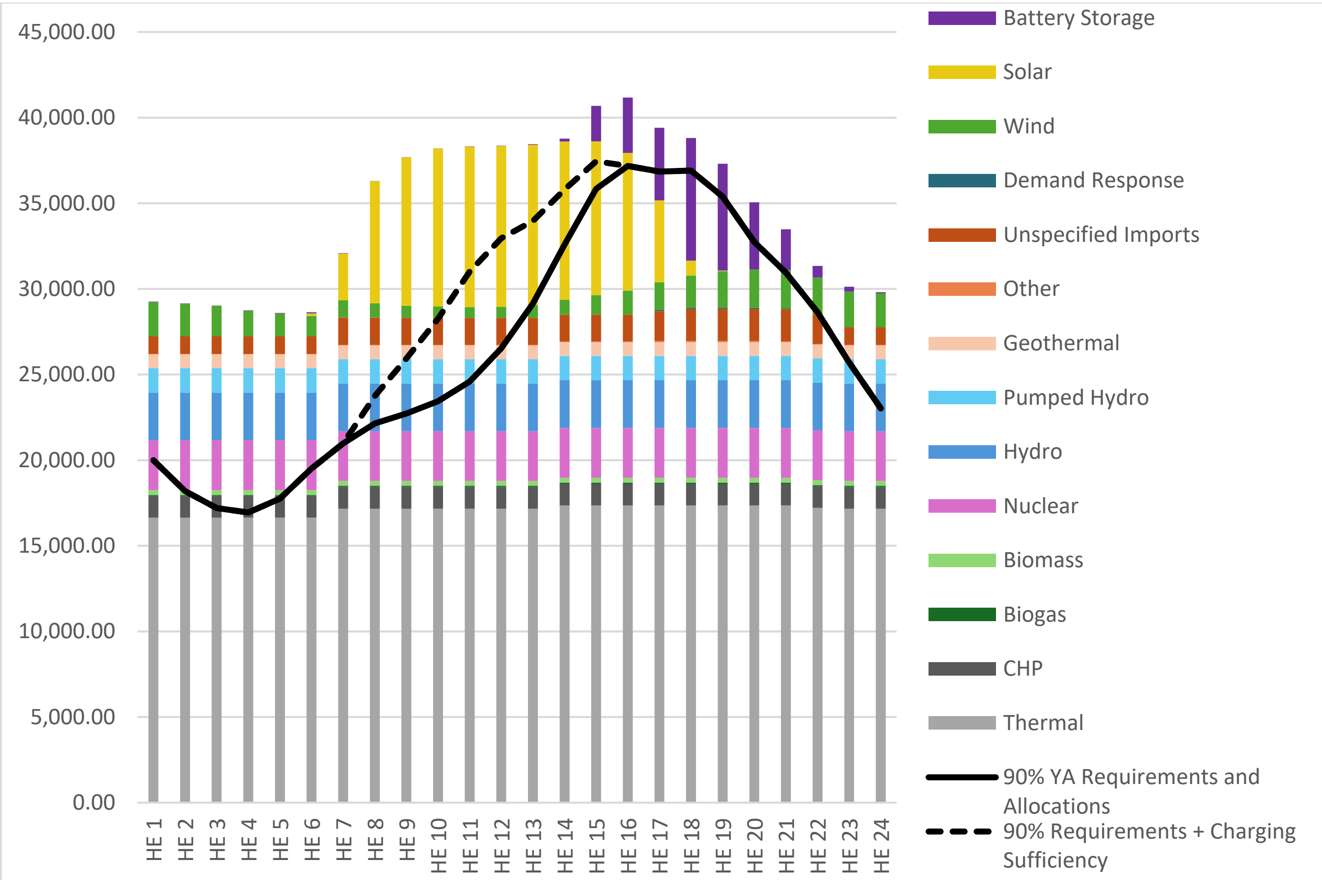
While not shown explicitly below, aggregate shown capacity in the May YA filings also met or exceeded the 100 percent MA system requirement in every hour. May YA filings exhibited no individual LSE deficiencies in any hour, reflecting both system-wide and LSE-specific surplus.

Figure 1: May 2025 YA Aggregate LSE Showings



By comparison, September 2025 YA filings, depicted below in **Figure *2***, exhibited a tighter system than earlier summer months, though the system remained long in every hour. The CAISO system peak hour (HE 16) showed a surplus of 3,991 MW relative to the YA requirement. Though, the tightest system hour (defined as the hour with the lowest MW in exceedance of obligation) occurred at HE 18, nearer to the system net peak, where the aggregate system showed 1,899 MW of surplus capacity.

Figure 2: September 2025 YA Aggregate LSE Showings



Individual LSE Deficiencies in YA Filings

While the system was long in aggregate, September YA filings also exhibited individual LSE deficiencies across all hours. A total of nine LSEs were deficient in at least one hour relative to their September YA requirement.

To distinguish between the aggregate system-wide position and individual LSE deficiencies, ***Table 2*** includes both:

- Aggregate system net position (total shown capacity minus total requirement), and
- Gross LSE deficiencies (the sum of negative hourly positions across LSEs, without netting surplus held by other LSEs).

Table 2: September 2025 YA System Position and LSE Deficiencies

Hour Ending (HE)	YA Total Requirement (MW)	YA Total Shown Capacity (MW)	YA System Net Position (MW)	YA System Position (% of Requirement)	YA Total Gross LSE Deficiency (MW)
HE 1	19,994.09	29,260.09	9,266.01	46%	-59.87
HE 2	18,198.42	29,152.81	10,954.39	60%	-56.31
HE 3	17,201.48	29,025.93	11,824.45	69%	-54.91
HE 4	16,942.12	28,753.38	11,811.27	70%	-59.94
HE 5	17,751.15	28,598.36	10,847.21	61%	-65.35
HE 6	19,507.69	28,631.24	9,123.56	47%	-78.27
HE 7	20,975.83	32,083.99	11,108.17	53%	-67.59
HE 8	22,146.05	36,294.92	14,148.88	64%	-39.11
HE 9	22,720.85	37,686.05	14,965.21	66%	-36.06
HE 10	23,437.55	38,201.25	14,763.70	63%	-39.22
HE 11	24,586.88	38,328.05	13,741.17	56%	-41.03
HE 12	26,529.68	38,365.61	11,835.93	45%	-42.56
HE 13	29,144.61	38,444.57	9,299.95	32%	-66.14
HE 14	32,588.51	38,770.66	6,182.16	19%	-95.78
HE 15	35,843.13	40,686.15	4,843.02	14%	-124.12
HE 16	**37,179.47**	**41,170.51**	**3,991.05**	**11%**	**-159.41**
HE 17	36,853.45	39,407.19	2,553.74	7%	-130.49
HE 18	**36,908.12**	**38,806.95**	**1,898.83**	**5%**	**-210.01**
HE 19	35,385.24	37,302.72	1,917.48	5%	-161.50
HE 20	32,732.75	35,059.14	2,326.39	7%	-129.80
HE 21	30,949.20	33,481.60	2,532.40	8%	-106.21
HE 22	28,635.54	31,338.74	2,703.20	9%	-109.44
HE 23	25,713.78	30,129.91	4,416.13	17%	-77.20
HE 24	23,023.10	29,809.96	6,786.87	29%	-64.23

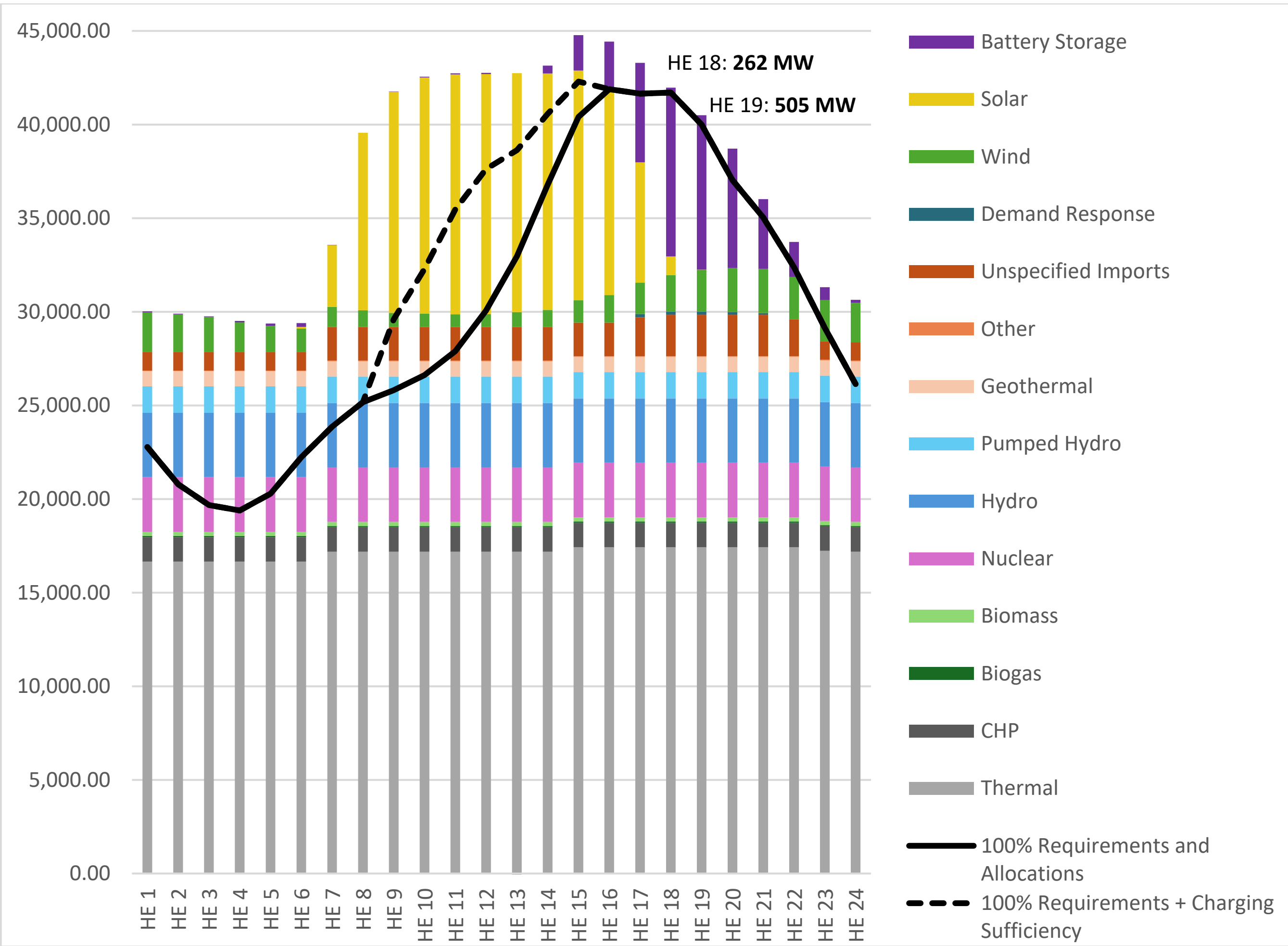
In September, gross LSE deficiencies ranged across all hours and peaked at 210 MW in HE 18. However, in all hours, aggregate system surplus exceeded gross LSE deficiencies.

Month-Ahead (MA) Filings

By the MA filing deadline for all months in 2025, all individual LSE deficiencies observed in the YA filings had fully cured their YA deficiencies and procured enough to meet their MA requirements. Consistent with this outcome, the aggregate system portfolio remained long in every hour against the MA requirement: 100 percent of forecasted monthly load plus a 17 percent Planning Reserve Margin (PRM).

Looking at the September MA aggregate showing, the tightest hour occurred again at HE 18, where the system surplus was just 262 MW.

Figure 3: September 2025 MA Aggregate LSE Showings[3]



The narrowing of aggregate system surplus between the YA and MA filings largely reflects the transition from the 90 percent YA requirement to the 100 percent MA requirement. As shown in ***Figure 3*** above, there was additional capacity reflected in each hour of the September MA showing, compared to the YA. This increase is consistent with expected incremental procurement between compliance timeframes, as well as more targeted procurement undertaken to cure YA deficiencies.

[3] The aggregate system position is labeled across the system tightest hours for clarity.

Filing outcomes show that the system remained net long in every hour, that hourly deficiencies observed in the YA were able to be cured by the MA compliance timeframe, and that all LSEs were able to contract sufficient capacity to meet their individual hourly obligations.

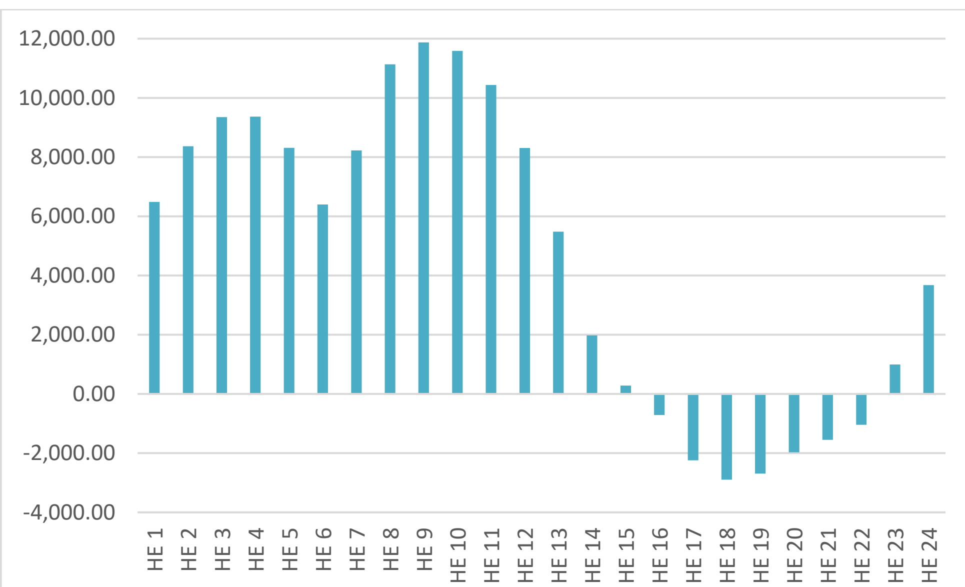
Accordingly, filing outcomes from the first year of binding SOD implementation indicate that LSEs were able to transact within the current RA market to fully meet hourly SOD compliance.

3.3 Procurement Activity Between YA and MA filings

The transactability evaluation, however, extends beyond whether LSEs ultimately achieved compliance. It also requires an examination of how deficiencies were resolved and MA open positions were filled. Specifically, if SOD created a structural constraint, one would expect to observe either an inability to procure incremental capacity or a lack of access to RA products reasonably aligned with MA hourly portfolio needs.

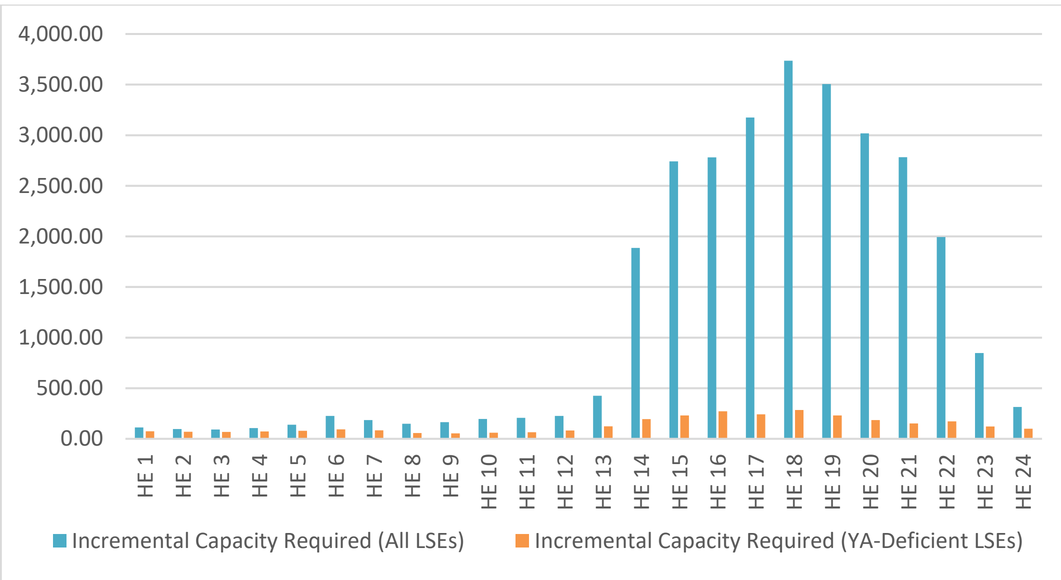
To better understand procurement between these compliance periods, Staff first evaluated the LSE-level incremental procurement needs between the YA showings and MA requirements. ***Figure 4*** illustrates the aggregate YA system position relative to MA requirements (YA shown minus MA requirement) across all 24 hours. As reflected in ***Figure 4***, the aggregated YA showings are sufficient to meet most hourly MA requirements except for the most stressed system hours of HE 16- HE 22.

Figure 4: Aggregate YA System Position Relative to Month-Ahead Requirement, September 2025



Although the YA aggregate system showing was net long relative to MA requirements in most hours (as reflected in ***Figure 4***), some degree of incremental procurement was required across all hours due to individual LSE portfolio needs (as reflected in ***Figure 5***). ***Figure 5*** presents individual LSE gross incremental procurement required between the YA and MA filings, and shows both these values for all LSEs (blue bar) and the 9 deficient LSEs (orange bar) for purposes of better understanding the procurement between YA and MA for deficient LSEs relative to non-deficient LSEs. The difference seen between all LSEs and deficient LSEs widens as you approach the more stressed system hour, meaning more LSEs would need SOD products to fill these higher demand hours.

Figure 5: Gross Incremental Procurement Required Between YA and MA Filings, September 2025



As a secondary step in evaluating procurement between compliance periods, Staff evaluate procurement activity using the RA contract price database which is used to inform Power Charge Indifference Adjustment (PCIA) RA benchmarks. The RA contract price data records RA-only transactions executed by LSEs, organized by contract execution date and compliance month. As such, it provides a comprehensive view of RA-only transactions occurring between compliance timeframes and offers insight into procurement activity undertaken to adjust positions after initial filings.

For purposes of this analysis, the dataset was limited to contracts executed between November 2024 and August 2025 for delivery during the 2025 summer compliance months (May through September). While RA contract price data does not capture all forms of RA procurement, such as contracts in which RA is bundled with energy or financial settlements, it provides a useful lens for examining RA transactions occurring between the YA and MA compliance windows to address near-term portfolio adjustments.

Some incremental procurement between the YA and MA filings is expected across most LSEs. All LSEs must increase their contracted capacity shown from 90 percent compliance at YA to full 100 percent compliance at MA. LSEs that are deficient in the YA filings would reasonably be expected to undertake proportionally greater procurement in order to both cure those deficiencies and meet their full RA requirement by the MA showing.

Since the implementation of SOD, the RA market has exhibited increased differentiation in how capacity products are described and transacted. We have observed the emergence of specifically defined products across LSE solicitations – such as Flat-NQC (24x7), storage, region-specific wind, and multiple solar configurations differentiated by type and location – that more directly reflect the hourly shapes and contributions of different resource types.[4] While RA compliance products remain monthly NQC commitments and cannot be traded on an hourly basis, this evolution in contracting practices indicates that market participants are adapting procurement structures to better align resource capabilities with hourly portfolio needs under SOD.

However, because the RA contract price dataset does not explicitly identify RA "product types," Staff mapped transactions (using the Resource ID) into representative SOD product categories based on resource characteristics (provided by the Master Resource Database (MRD)), consistent with the RA product distinctions that have developed under SOD. Transactions were categorized as: (1) 24-hour resources; (2) storage; (3) hybrid resources; (4) solar and wind; (5) unspecified imports; and (6) "unknown," for transactions with insufficient reported information to assign a resource category.

Table 3 presents aggregate transactions from the RA contract price dataset for delivery across 2025 summer months (May through September), organized by SOD product category, for contracts executed from November 1, 2024, through August 1, 2025. Duplicates have been removed from the dataset to remove offsetting or mirrored entries and avoid distorting the product mix percentages.

Table 3: Incremental Procured Capacity by Resource Category, all LSEs

	Procured Capacity (MW)	Share of Procured Capacity
24/7	5,040.39	39%
Storage	2,533.56	20%
Hybrid	1,810.97	14%
Solar/Wind	1,748.13	14%
Unspecified Imports	424.00	3%
Unknown	1,374.78	11%
Total	12,931.83	

Across all LSEs, intra-year procurement reflects a diverse mix of resource types. Approximately 39 percent of procured megawatts are associated with 24-hour resources. Storage (including hybrid) resources account for roughly one-third of incremental procurement, while solar and wind resources represent an additional 14 percent. The remaining share consists of unspecified imports and transactions with unknown resource types.

This distribution shows that intra-year procurement was not limited to continuous 24-hour products. LSEs transacted for a range of resource types, including products with more targeted temporal characteristics. The presence of storage, hybrid, and variable renewable resources in incremental procurement proves that

[4] Staff has observed similar product differentiation across recent IOU Balance-of-Year RA solicitations issued since SOD implementation, reflecting increased specificity in how capacity attributes are defined and traded.

market participants had access to multiple RA product configurations when adjusting portfolios between compliance milestones.

To further evaluate whether SOD created a constraint for LSEs that were actually deficient, procurement was examined separately for the subset of LSEs that exhibited deficiencies in the September 2025 YA filings. *Table 4* utilizes the same data set provided in *Table 3* but filters for only the 9 LSEs that were deficient in meeting their September YA RA obligations.

Table 4: Incremental RA Procurement by Resource Category, YA-Deficient LSEs

	Procured Capacity (MW)	Share of Procured Capacity
24/7	1,218.37	78%
Storage	54.00	3%
Hybrid	67.96	4%
Solar/Wind	74.00	5%
Unspecified Imports	0.00	0%
Unknown	154.78	10%
Total	1,569.11	

Table 4 illustrates that for this cohort of LSEs, incremental procurement is more heavily weighted toward 24-hour resources, which account for approximately 78 percent of procured megawatts. Storage, hybrid, and solar/wind resources represent a smaller share relative to the broader LSE group. The heavier reliance on 24-hour resources among YA-deficient LSEs is consistent with the nature of their multi-hour short positions, rather than indicating a structural inability to access more targeted products. In such cases, procurement of 24-hour resources represents a rational portfolio response to broad hourly shortfalls.

Based on Staff analysis, the contract data and the incremental procurement patterns observed do not indicate the presence of an inherent transactability constraint under the SOD framework. LSEs were able to procure incremental capacity between the YA and MA filings sufficient to cure deficiencies and meet full MA requirements, and procurement patterns reflected portfolio alignment decisions consistent with observed hourly short positions.

3.4 2024 Comparison

To further evaluate whether the SOD framework introduced a structural transactability barrier, Staff compared the 2025 portfolio size, resource mix, and compliance outcomes to those observed under the prior RA framework.

The purpose of this comparison is not necessarily to evaluate the two frameworks against one another, but to assess whether the first year of binding SOD implementation resulted in a materially different portfolio mix than the portfolio used to meet requirements under the old framework.

Portfolio Scale

A central concern raised by some parties is that hourly compliance could require LSEs to contract materially more capacity under the SOD framework than under the prior RA framework in order to hedge against hourly misalignment between their resource portfolio and specific hourly requirements.

Table 5 compares total September contracted capacity, reflected in NQC and in nameplate values, across the two compliance years.

Table 5: September Contracted Capacity Comparison (2024 vs. 2025)

	Sep NQC Under Contract (MW) [5]	Estimated Nameplate Under Contract (MW)[6]
2024	45,350.31	63,261.76
2025	49,075.80	68,382.98

Total NQC under contract increased by approximately 3,725 MW (8.2 percent), and nameplate capacity increased by approximately 5,121 MW (8.1 percent).

In interpreting this increase, we need to consider changes to system requirements and resource counting. Load forecasts and resource accreditation updates have evolved across compliance years. For example, in 2024 the NQC for solar and wind was based off monthly Effective Load Carrying Capacity (ELCC) factors whereas in 2025, the NQC is based off the peak hour exceedance value.

Given the differences in NQC accounting between 2024 and 2025, Staff focused on analyzing the September MA portfolios based on nameplate capacity and resource mix. *Table 6* reflects this analysis of nameplate under contract by resource type for September 2024 and September 2025. Imports shown in RA filings are omitted for the purpose of this analysis.

Table 6: September Nameplate Under Contract by Resource Type

	2024		2025	
	Nameplate Under Contract (MW)	Share of Total Resources	Nameplate Under Contract (MW)	Share of Total Resources
Thermal	22,480	35.5%	20,727	30.4%

[5] NQC is compared across both portfolios using the adopted resource accreditation methodology under the SOD framework.
[6] LSE filings report NQC under contract but not contracted nameplate capacity. Accordingly, for each resource, the share of total NQC shown under contract was applied to the resource's total nameplate capacity in the Master Resource Database to estimate the corresponding nameplate capacity under contract.

Biogas	107	0.2%	97	0.1%
Biomass	526	0.8%	332	0.5%
Hydro	3,848	6.1%	4,548	6.7%
Pumped Hydro	1,425	2.3%	1,425	2.1%
Nuclear	2,352	3.7%	2,987	4.4%
Geothermal	1,089	1.7%	1,063	1.6%
Wind	5,863	9.3%	7,401	10.8%
Solar	15,732	24.9%	16,925	24.8%
Battery Storage	9,830	15.5%	12,782	18.7%
Total	**63,252**	100%	**68,288**	100%

Table 6 illustrates a significant decline in thermal nameplate capacity (~1,750 MW) which can be largely attributable to the once-through-cooling (OTC) resources leaving the RA market. The data also highlights a large uptick in battery storage and variable energy (solar and wind) resources. The increase in nameplate capacity for these resource types amounts to ~5,700 MW. This analysis tells us that while the total nameplate capacity increased between the compliance years, LSEs are meeting 2025 compliance with a larger set of use-limited resources than were used to meet 2024 RA obligations.

Compliance Outcomes

Staff also thought it was useful to compare compliance outcomes across the prior RA framework and the binding SOD 2025 framework. This was done to further examine if implementation of SOD introduced transaction barriers that resulted in increased deficiencies. Compliance outcomes provide an additional indicator of transactability. If SOD had introduced meaningful structural barriers, we could expect to see an increase in deficiencies in the YA and MA filings.

Table 7 provides a comparison of compliance outcomes for September MA from 2020 through 2025. The data reflects that across the 2020-2024 RA compliance years, under the prior framework, September MA filings routinely included some deficient LSEs and measurable gross deficiencies.[7] In 2025, by contrast, no LSE deficiencies were observed at the MA stage in any hour. For more information on which LSEs were deficient for particular RA obligations, see the CPUC's RA website for "Resource Adequacy Penalties and Citations".[8]

[7] See 2020 – 2023 RA Reports published on the CPUC Resource Adequacy Homepage for additional information on compliance filings. 2024 and 2025 RA Reports forthcoming.

[8] See CPUC RA program website for a RA Program Citation Briefing (February 2024) and RA Program Citation database (current as of December 2025). https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-power-procurement/resource-adequacy-homepage/resource-adequacy-penalties-and-citations

Table 7: September MA Compliance Comparison, 2020 - 2025

	Total Requirement (MW)	Total Shown Capacity (MW)	Aggregate System Net Position	LSE Deficiencies	Gross LSE Deficiencies (MW)
2020	46,872	46,847	99.9%	2	68
2021	46,439	45,898	98.8%	7	861
2022	46,826	47,105	100.6%	5	1,141
2023	49,162	50,089	101.9%	6	93
2024	49,995	50,190	100.4%	7	279
2025 (HE 18)	48,440	48,705	100.5%	0	0

However, the absence of MA deficiencies does not necessarily establish improved performance or alleviate transactability concerns under SOD. There are many factors, including additional supply coming online, a more punitive penalty structure, and clarity in SOD implementation that we can contribute some degree of increased RA compliance to existing obligations.[9] Even so, the observed trend suggests that LSEs were able to transact and adjust portfolios to meet their RA obligations under the SOD framework.

3.5 Implications for Transactability

If hourly compliance under SOD had introduced a material transactability barrier, one would expect to observe at least one of the following outcomes in 2025 relative to 2024:

- A substantial and disproportionate expansion of contracted capacity;
- A potential shift toward 24-hour products at the expense of more variable resources; or
- An increase in unresolved deficiencies at the MA stage despite aggregate net system surpluses.

The RA filing and contract price data do not support any of these outcomes.

While SOD introduces greater granularity in how obligations and supply are evaluated, the observed portfolio scale, resource mix, and compliance results do not indicate that LSEs were unable to transact for appropriate products or were compelled to materially over-procure capacity to satisfy hourly requirements.

The first year of binding compliance under the SOD framework does not, based on LSE filing data, demonstrate the presence of a structural transactability barrier. However, the absence of a demonstrated compliance failure does not preclude the possibility that a load obligation trading mechanism could yield

[9] Saephan, Xieng (CEC) and Brendan Burns (CPUC). January 2026. Joint Agency Reliability Planning Assessment SB 846 Fourth Quarterly Report. California Energy Commission. Publication Number: CEC-200-2025-026. Figure 1, at 4.

incremental efficiency or affordability benefits. Accordingly, the following section evaluates the potential benefits and associated considerations of an hourly load obligation trading mechanism.

4. Benefits

While the RA compliance data does not demonstrate an inherent transactability barrier under the SOD framework, stakeholders have argued that an hourly load obligation trading mechanism could nevertheless improve portfolio efficiency and reduce procurement costs.

The central argument advanced by some parties is that since hourly compliance may result in situations where surplus capacity held by one LSE in a given hour cannot directly offset a deficiency held by another, LSEs with short positions may procure additional capacity even when the system is long in aggregate, resulting in incremental procurement that might otherwise be avoided if hourly obligations could be reallocated across portfolios.

Under an hourly load obligation trading framework, LSEs with short positions in specific hours could rely on surplus capacity held by other LSEs in the same hours. In theory, this could reduce the need for some incremental procurement, limit over-contracting in non-constrained hours, and improve alignment between contracted capacity and hourly load obligations.

The Commission directed Energy Division to assess not only whether an hourly load obligation trading mechanism is necessary, but also to assess the benefits of a load obligation trading mechanism. In order to do so, we evaluate the potential benefits through the lens of aggregate procurement efficiency. Specifically, Staff evaluated whether hourly load obligation trading could reduce overall capacity procurement by facilitating improved alignment between contracted resources and LSE hourly load obligations.

This section examines those potential efficiency gains using 2025 filing data as a demonstrative benchmark.

4.1 Estimated Cost Savings from Load Obligation Trading

To illustrate the potential magnitude of procurement cost reductions under an hourly load obligation trading framework, Staff evaluated three scenarios using September 2025 MA filing data. These scenarios reflect progressively stronger assumptions about portfolio coordination and optimization efficiency.

Taken together, they illustrate a range within which potential affordability benefits can be assessed.

Scenario 1: Surplus in the Tightest Hour

In the September 2025 MA filings, the most constrained system hour was HE 18. In that hour, aggregate shown capacity exceeded total system requirement by approximately 262 MW. If, for illustrative purposes, one assumes that hourly load obligation trading could fully eliminate this surplus and reduce the total contracted capacity by an equivalent baseload quantity across all hours, the system portfolio could theoretically be reduced by 262 MW across all hours.[10]

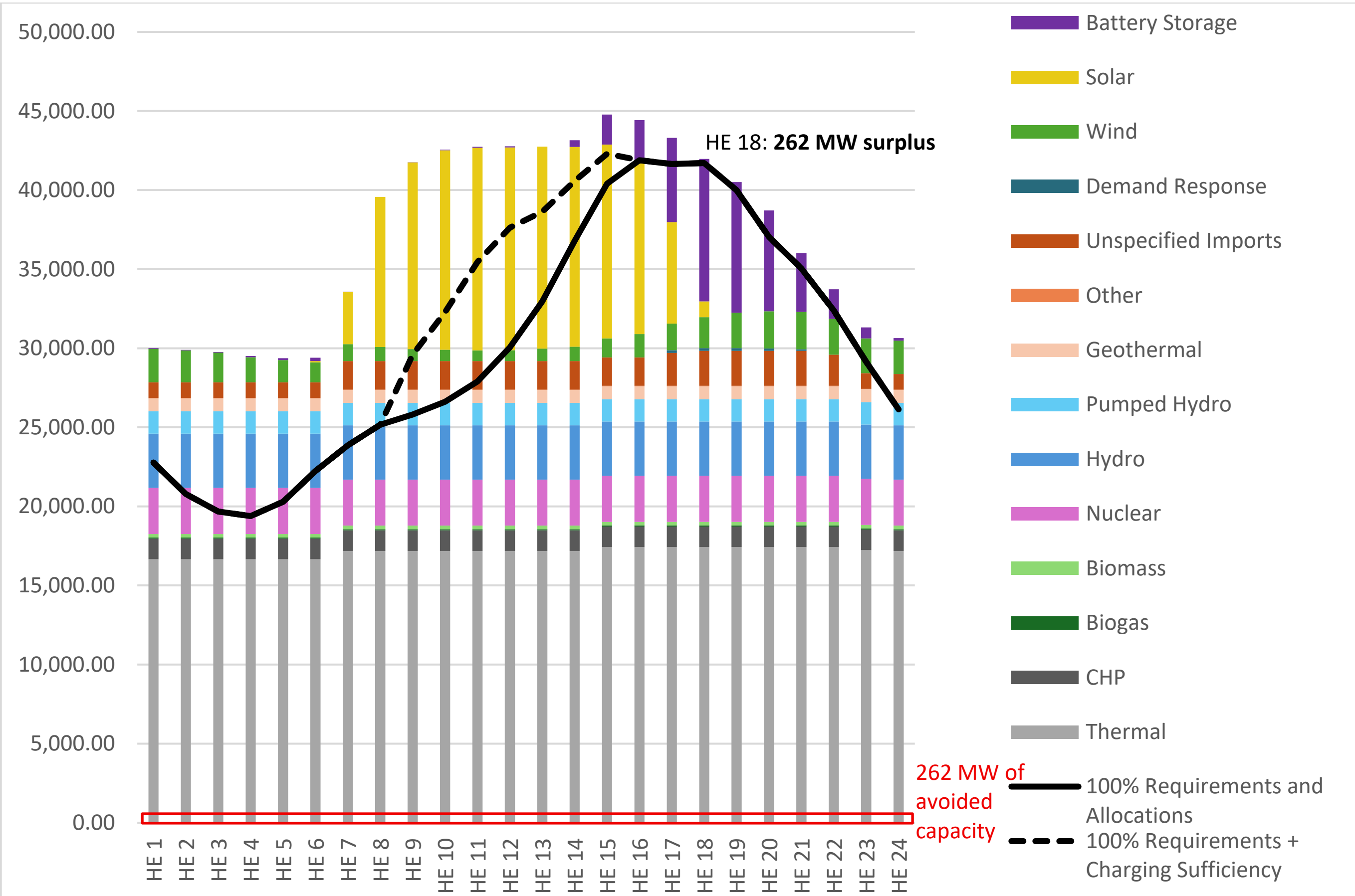
For the purpose of clarity and uniformity across analysis, we will utilize the most recent RA Market Price Benchmark (MPB) of $11.21 per kW-month as a proxy for RA prices.[11] Applying the MPB here to the avoided 262 MW of procurement yields approximately $2.9 million in avoided costs for September.

Figure 6 shows the aggregate surplus in the most constrained hour (HE 18) based on the September MA filings. The red bar at the bottom of the figure represents the 262 MW of baseload capacity that could theoretically be avoided.

[10] For purposes of this analysis, "avoided procurement" refers to a reduction in incremental RA capacity that would otherwise be procured to meet monthly compliance obligations. The analysis assumes that any avoided procurement would occur at the margin and is represented as avoided baseload-equivalent capacity (e.g., thermal or 24-hour RA products), rather than reductions in contracted variable energy resources or storage. Under Scenarios 1, 2, and 3, estimated surplus storage energy (MWh) is converted to a baseload-equivalent megawatt value by dividing total available MWh by 24 hours. This conversion is used solely as a proxy to clearly and consistently estimate the magnitude of potential procurement reductions under increasingly optimized portfolio assumptions.

[11] **Table 1. 2025 Final Market Price Benchmarks Used in PCIA Calculations**, *Market Price Benchmark Calculations 2025*, California Public Utilities Commission (Oct. 1, 2025).

Figure 6: September 2025 MA Aggregate Surplus



This scenario reflects an aggregation of portfolios submitted by individual LSEs and therefore represents the most conservative benchmark in this analysis. This is because many LSE filings use the storage optimizer to allocate storage resources based on their individual compliance needs, including charging requirements. When a storage resource is no longer useful for meeting a given hour's RA requirements, the optimizer excludes it from the filing.

Scenario 2: Accounting for Contracted Storage Not Fully Shown in MA Showings

As noted above, under the SOD framework, LSE portfolios are optimized in the SOD Showing Tool to meet hourly RA requirements, with the storage optimizer determining the placement of storage megawatt-hours (MWh) while minimizing charging obligations. As a result, portions of contracted storage capacity may not be fully utilized in hourly showings if they are not needed for compliance. Consequently, aggregate hourly positions derived from MA filings may understate the total excess supply. To account for the unshown storage, Staff determined the total available energy from storage (calculated as contracted NQC (MW) * 4 hours) and compared that to the total shown MWh of storage. ***Table 8*** reflects the results of this exercise for July, August and September. The results include aggregated unshown storage (MWh) and a base-load equivalent figure (unshown storage MWh divided by 24 hours). As shown in the table below, during the summer months there is measurable contracted storage capacity that is not fully reflected in aggregate hourly system positions due to LSE-level optimization.

Table 8: Storage Capacity not Shown, by Month

	Contracted Storage Capacity Not Shown in MA Filings (MWh)	Baseload Equivalent Additional Capacity (MW)
July	3,221.2	134.2
August	4,639.3	193.3
September	2,657.5	110.7

Using a base-load equivalent translation, September includes approximately 111 MW of additional storage capacity not captured in aggregate hourly positions. If this amount is added to the observed 262 MW surplus in HE 18, the implied surplus increases to approximately 373 MW. Applying the MBP of $11.21 kW-month yields an avoided procurement value of approximately $4.1 million for September.

This scenario represents a more expansive estimate of avoided procurement costs than Scenario 1, while still grounded in SOD compliance filings.

Scenario 3: Fully Aggregated, Optimized System Portfolio

The two scenarios above are based on individually optimized LSE portfolios under the current RA framework, in which 38 CPUC-jurisdictional LSEs independently procure capacity to meet their respective hourly load profiles.

As an additional bookend for this savings analysis, Staff also examined a fully aggregated and system-optimized portfolio. In this scenario, all contracted resources are optimized against a single unified system load profile, removing inter-LSE fragmentation and capturing the diversity benefits of both load shapes and resource characteristics.

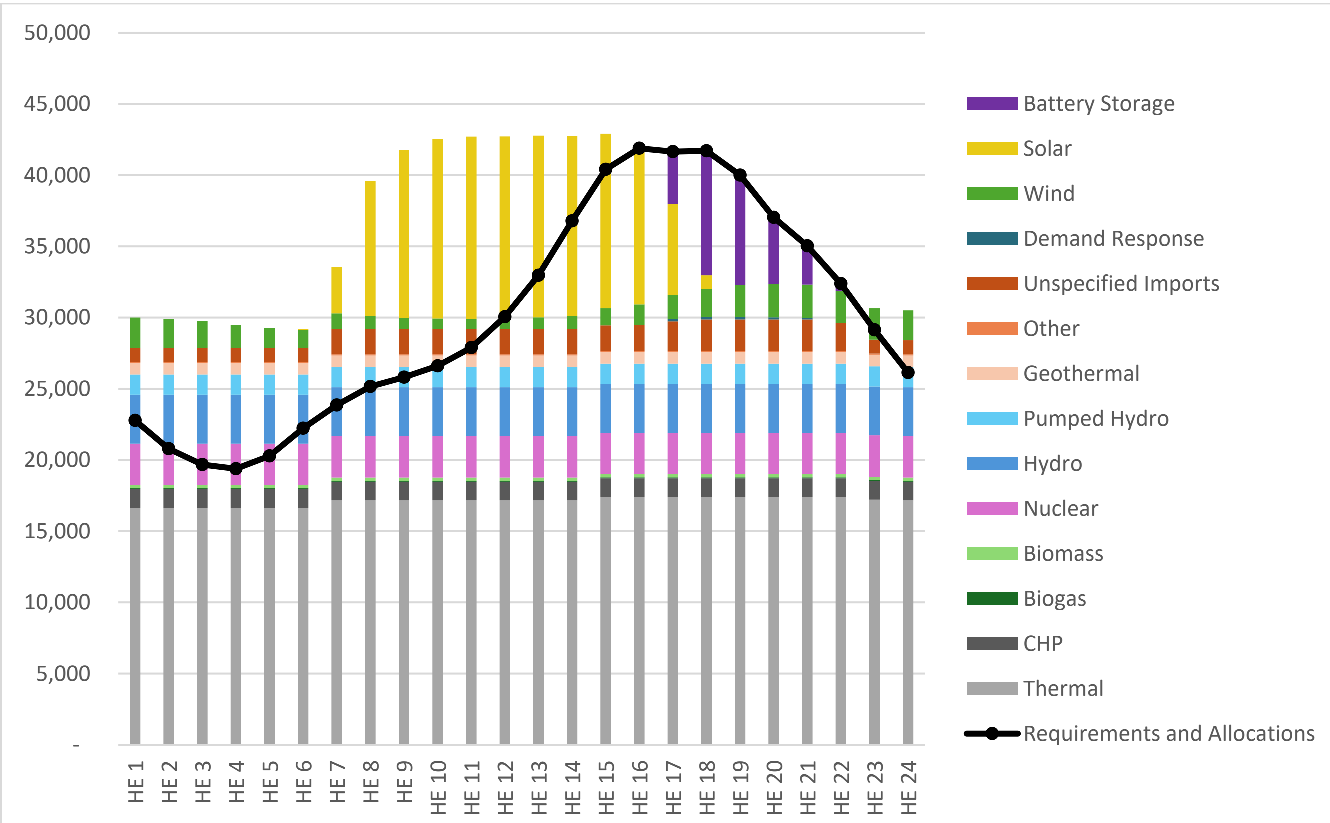
This approach is most comparable to the framework evaluated in CalCCA's April 2025 load trading analysis.[12] In that analysis, CalCCA modeled a centralized, coordinated reallocation of hourly obligations across participating LSEs in a manner that captures diversity across load profiles and resource characteristics. Scenario 3 similarly assumes system-wide portfolio optimization rather than incremental bilateral trades between individual LSEs.

To optimize the aggregate portfolio, all storage resources were set to use the Profile Optimizer feature in the SOD Showing Template to place storage in deficient hours, while adhering to requirements such as state-of-charge and energy sufficiency.

[12] CalCCA, *Effective Mechanisms for Slice-of-Day Resource Adequacy Trading*, April 24, 2025. Available at 4.24.25_Effective-Mechanisms-for-Slice-of-Day-RA-Trading.pdf

This re-optimization further reduced the storage capacity needed to produce a compliant RA showing for September 2025 MA. Results of this analysis identified 16,269 MWh of unused storage, which, when converted to a 24-hour MW equivalent, is 678 MW of unused capacity. Applying the MBP of $11.21 kW-month in this scenario yields an avoided procurement value of approximately $7.6 million. ***Figure 7*** presents the resulting optimized aggregated profile.

Figure 7: Centrally Optimized System Portfolio, September 2025



To better understand the benefits of a fully optimized (centralized) procurement approach, Staff compared the storage placement from Scenario 1 (the original aggregated September 2025 MA LSE filings) against the re-optimized storage placement from Scenario 3. The results of this comparison are displayed in **Table *9***. This table reflects that when the portfolio is re-optimized as a whole, the storage shown in off-peak hours is no longer necessary and the use of storage resources can be partially reduced in peak hours. The re-optimization of the storage showings can be used as a proxy to estimate best-case avoided procurement under the load obligation trading proposal; since the portfolio is sufficiently long, more capacity was procured beyond what was necessary to comply with the aggregate system RA obligation.

Table 9: Comparison of Scenario 1 and Scenario 3 Storage Showings

Hour Ending	Sept. 2025 MA Filings Shown Storage (MW)	Re-optimized Shown Storage (MW)	Difference (MW)
1	50	0	-50
2	33	0	-33
3	32	0	-32
4	81	0	-81
5	126	0	-126
6	208	0	-208
7	17	0	-17
8	0	0	0
9	16	0	-16
10	41	0	-41
11	59	0	-59
12	69	0	-69
13	87	0	-87
14	562	0	-562
15	2,035	0	-2,035
16	2,696	0	-2,696
17	5,320	3,664	-1,656
18	9,010	8,735	-275
19	8,256	7,722	-534
20	6,374	4,664	-1,710
21	3,729	2,717	-1,012
22	1,878	497	-1,381
23	693	0	-693
24	163	0	-163

Under this fully centralized scenario, required capacity declines further relative to the observed MA portfolios, and system hourly positions in the most constrained hours are more closely aligned with system requirements. The magnitude of the reduction represents a theoretical upper bound of efficiency gains.

This third scenario is based on assumptions that differ from the actual structure of California's RA market and compliance framework. In practice, the current framework relies on individual LSE-based procurement rather than centralized resource acquisition. Load shapes vary across LSEs due to differences in geography and customer mix, and procurement decisions are made in a decentralized manner.

Accordingly, while the aggregated optimization illustrates the maximum theoretical efficiency under centralized portfolio management, it does not represent an outcome realistically attainable through bilateral hourly load obligation trading alone.

CalCCA's analysis similarly models coordinated reallocation of hourly obligations across participating LSEs and estimates that such an approach could yield direct annual savings of up to approximately $60 million, primarily through reductions in external RA purchases.[13] However, CalCCA also acknowledges that achieving benefits at this scale would likely require some form of centralized coordination or intermediary facilitation to efficiently match surplus and deficit positions across LSEs.[14] Without such coordination, decentralized bilateral trading may not fully capture the modeled diversity benefits.

The three scenarios evaluated in this section demonstrate a range of potential avoided procurement costs under varying degrees of coordination and optimization:

- Observed MA surplus: 262 MW of surplus in HE 18 implies a maximum potential of $2.9 million in avoided procurement costs.
- Including unshown contracted storage: Incorporating unshown storage capacity adds 111 MW of baseload-equivalent capacity and increases the implied surplus to approximately 373 MW, or roughly $4.1 million of estimated, avoided procurement.
- Centralized, fully aggregated system optimization: Representing a centralized re-optimized bookend scenario, this identifies 678 MW of baseload-equivalent excess capacity, and an estimated $7.6 million in potentially avoided procurement costs.

The results suggest that improved portfolio alignment could yield measurable system-wide savings. Hourly load obligation trading may help facilitate incremental efficiency gains by allowing surplus capacity to be reallocated across LSEs. However, the extent to which such trading could achieve the full level of avoided procurement reflected in either Scenario 1 or Scenario 2 remains uncertain, and this mechanism would not replicate the outcomes of full portfolio centralization under the existing RA framework.

Additional considerations of the potential savings warrant further examination. For example, reduced LSE procurement under any scenario may not ultimately produce savings if CAISO determines that the avoided capacity is still needed to maintain local reliability and procures it through its backstop mechanisms. Similarly, avoided procurement savings may not accrue to load if the avoided procurement is held by LSEs with long positions that are unable to sell surplus capacity due to reduced demand resulting from load obligation trading.

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[13] *ibid*

[14] *ibid*

4.2 Net Cost Effects and Trade Related Costs

The analysis thus far has assumed that estimated cost savings would accrue to load, on the premise that benefits would be realized through reduced procurement volumes from suppliers. These savings are best understood as aggregate load (i.e., total LSE) savings, rather than savings attributable to any single LSE. Hourly obligation trades would themselves carry a cost, likely reflecting the value of relieving an LSE of a portion of its RA obligation in a given hour. It is reasonable to assume that such costs would be lower than the cost of incremental procurement and, because trades would occur among LSEs rather than with resource suppliers, any net savings would flow to aggregate load.

However, the assumption that the cost savings are delivered to aggregate load is only true if avoided supply is not already held by LSEs (load). The original RA product obligation between a generator and load likely already includes all 24 hours, so even if various LSEs can optimize their portfolios relative to their load shapes – the initial contract for the full generator obligation was likely for the full 24 hours and thus, already held by load. For instance, while one LSE may benefit from the avoided procurement cost in a single hour of obligation, another LSE may lose due to a decline in excess sales revenues from selling a slice of its portfolio. Take for example, an IOU that has lost significant volumes of load and is a net RA seller that must prudently manage its portfolio including selling off excess RA volumes. If avoided procurement, due to load obligation trading, results in less sale revenue to its bundled and departed customers (via the PCIA) then load will not have realized the potential benefits. While such an IOU could attempt to optimize its position by selling both supply products and load obligations, introducing this additional layer of transactional complexity would likely increase administrative costs across all 38 LSEs.

To illustrate how potential benefits may flow to load, Staff examined the RA contract price dataset referenced in Section 3.3 (***Table 3***), to assess the share of capacity sold by LSEs versus non-LSE entities. The results of this analysis are reflected in ***Table 10***. The data set reflects a total of 12,973 MW transacted between November 1, 2024, and August 1, 2025. The majority of MW (approximately 60 percent) were sold by LSEs, as compared to "Other Market Participants" which include resource suppliers, municipal utilities, non-CAISO Balancing Area Authorities. Some ESPs not only serve large commercial load but also have retail marketing supply arms. In these situations, it can be difficult to tell which entity is selling the capacity. Therefore, when Staff were not sure whether the seller of capacity was a third-party energy marketer or an LSE, those MW were conservatively assumed to be in the Other Market Participant category.

Based on this analysis, it cannot be assumed that reduced procurement volumes would necessarily translate into savings for load, as a significant share of avoided transactions may otherwise have resulted in revenues to LSEs themselves. While not shown in the table below, Staff also examined the prior 2024 compliance year using the same approach and observed very similar percentage breakdowns between seller types, with LSEs representing around 60 percent of sales.

Table 10: Contracted November 2024 – August 2025 Capacity by Seller

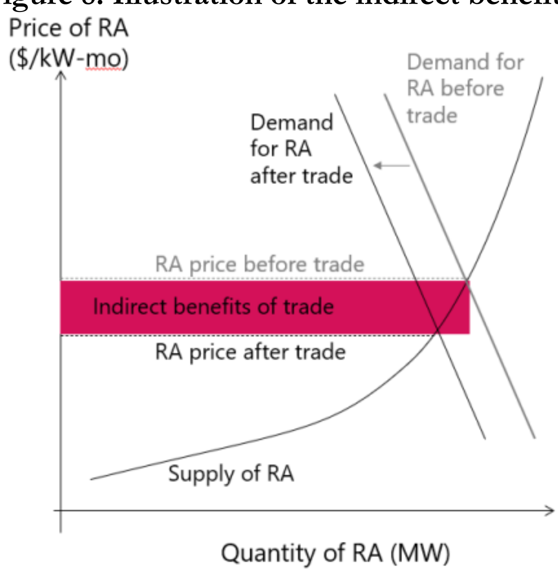
	LSE	Other Market Participant	Total MW
MW Delivered May – September 2025	7,574.57	5,357.26	12,931.83

4.3 Potential Indirect Benefits

In addition to potential direct reductions in incremental procurement, hourly load obligation trading has the potential to generate broader market-wide affordability effects. The underlying theory raised by CalCCA, displayed in ***Figure 8***, is that by allowing surplus capacity to offset deficits across LSE portfolios, aggregate demand for incremental RA procurement, particularly in the most constrained hours, could decline.[15] If marginal demand is reduced in tight hours, market prices for RA capacity could moderate accordingly.

In a tight RA market, even modest reductions in marginal demand during peak or near-peak hours could, in theory, produce broader price effects beyond the immediate volume of capacity displaced. To the extent that hourly load obligation trading reduces the frequency or magnitude of incremental procurement in constrained hours, it could indirectly lower procurement costs across LSEs by reducing price pressure on capacity transactions that remain necessary.

Figure 8: Illustration of the indirect benefits of trade from lower RA market prices (CalCCA)[16]



[15] *ibid*

[16] *Ibid.* Figure 11 (Illustration of the indirect benefits of trade from lower RA market prices).

If hourly obligation trading reduces the need for such incremental procurement, the resulting reduction in marginal demand could reduce upward price pressure across the broader market.

However, evaluating this effect is dependent on two conditions:

1. Whether hourly load obligation trading would materially reduce aggregate procurement volumes in constrained hours; and
2. How sensitive RA market prices are to relatively small changes in demand.

Taking September 2025 MA filings as an example, the filing data established that the aggregate system surplus in the tightest hour was 262 MW. Even under expanded assumptions accounting for unshown and centrally optimized storage, the potential reduction in required capacity ranges from 262 MW to 678 MW. Relative to total system portfolio near 45,000 MW in September, this represents, at most, approximately one percent of total capacity contracts.

While hourly load obligation trading could plausibly reduce marginal procurement volumes in constrained hours, the magnitude of any resulting market-wide price effect is uncertain. Indirect price moderation effects should be viewed as contingent on market tightness conditions and the scale of obligation trading, rather than as inherent or proportional outcomes.

4.4 Structural Constraints and Market Fragmentation

The potential affordability benefits described above must be considered within the institutional structure of California's RA program.

Under the current framework, 38 CPUC-jurisdictional LSEs independently procure and demonstrate compliance against individual hourly load obligations. Procurement occurs through bilateral contracts, portfolios are optimized at the LSE level, and load profiles differ across LSEs due largely to geography and customer composition. As a result, compliance is achieved through decentralized portfolio management rather than through coordinated system-wide optimization.

Potential diversity benefits could arise from a more coordinated portfolio alignment across LSEs. When load profiles and resource stacks are aggregated and optimized against a single system requirement, diversity across load shapes and resource characteristics can reduce aggregate capacity needs relative to the sum of independently optimized portfolios.

However, this diversity benefit reflects a theoretical construct in which procurement decisions, resource dispatch characteristics, and load obligations are centrally optimized. The CPUC-jurisdictional market does not currently operate under such a centralized structure. Instead, capacity procurement occurs within a limited supply pool through bilateral transactions among multiple independent entities, each managing distinct compliance obligations.

In this context, observed market friction arises from two related features:

- A finite and often tight supply of qualifying RA resources; and
- decentralized procurement by numerous LSEs seeking to align individualized hourly positions within that supply pool.

Hourly load obligation trading may improve coordination at the margin by enabling surplus in one portfolio to offset deficits in another. However, it would not alter the underlying decentralized nature of procurement decisions. Accordingly, while obligation trading could reduce certain portfolio alignment inefficiencies, realizing the full extent of these benefits would depend on a degree of centrally coordinated procurement planning that does not occur in today's market.

These considerations suggest that while hourly load obligation trading could provide incremental affordability benefits under certain conditions, those benefits should be weighed carefully against the costs, complexity, and structural limitations inherent in the current RA framework.

5. Potential Costs and Tradeoffs

The preceding section illustrates that hourly load obligation trading could, under certain assumptions, reduce aggregate procurement volumes in constrained hours, equating to avoided procurement costs of up to $2.9 to $4.1 million for September 2025. Any such potential affordability benefit must be evaluated alongside the reliability and structural implications of modifying the RA compliance framework.

5.1 Reliability Considerations

The RA program is designed to ensure that sufficient deliverable capacity is available to CAISO energy markets, through a Must-Offer Obligation (MOO), across all hours of the year under peak monthly conditions, rather than to produce a perfectly optimized hourly portfolio. RA requirements are based on forecasted load plus a PRM, set at 17 percent in the 2025 compliance year. Actual system conditions, however, may deviate from forecast due to extreme weather, forced outages, transmission constraints, or demand volatility. For this reason, some degree of aggregate system surplus provides reliability benefits. The lumpiness of procurement is a potential inconvenience to individual LSEs, but it provides a collective benefit.

In the September 2025 MA filings, the tightest system hour (HE 18) exhibited approximately 262 MW of surplus relative to the full 100 percent requirement plus PRM. This surplus represents roughly 0.5 percent of total system requirements in that hour. The excess surplus exists – but it is quite modest – revealing that there is a bit of collective benefit offered but it is not leading to significant cost to load.

Rather than focusing solely on surplus megawatts, we can also evaluate system conditions relative to the required PRM. In HE 18, the observed PRM in the MA filings was approximately 17.7 percent—only modestly above the required 17 percent threshold. However, including the "unshown storage capacity" identified in *Table 8*, which incorporates contracted storage capacity that is not fully reflected in optimized LSE showings, the observed reserve margin increases to approximately 21 percent in that hour.

Viewed through a reliability lens, this incremental margin is not simply "excess" capacity, but represents additional contracted, deliverable resources that may provide value under conditions that exceed forecasted load. Resources under RA obligation must offer bids to the energy market and in doing so they keep a competitive energy market that will likely clear without price spikes, and hopefully when supply far exceeds demand in energy markets consumers benefit from energy market prices that clear as close as possible to marginal cost- which keeps the energy portion of LSE bills low even if there is a minor cost to the incremental capacity portion of LSE bills. Accordingly, while hourly load obligation trading could, in theory, reduce incremental RA capacity procurement by reallocating capacity surplus across LSE portfolios, doing so would move the system closer to the bare minimum PRM threshold in constrained hours, reducing reliability margins and exposing LSEs to more energy market volatility. The 2025 filing data does not show evidence of unusually large over-procurement during those peak hours; rather, observed surplus remains modest relative to total system requirements and broadly consistent with prior years.

It is also important to recognize that the RA framework has long managed uncertainty through multiple intentionally overlapping conservative planning constructs. Under the prior ELCC construct, resources were assigned a capacity value reflecting their expected contribution during stressed conditions. That accreditation inherently assumed performance would vary across hours, though procurement obligations were not reduced simply because a resource might over-perform in certain hours. Similarly, under SOD, the PRM is applied on a monthly, rather than hourly, basis to account for load forecast error, forced outages, and extreme weather conditions.

Any reduction in RA procurement obligations facilitated by hourly load obligation trading would therefore need to be evaluated against this reliability objective. Moving portfolios closer to the minimum compliance threshold may increase exposure to forecast error and operational uncertainty, and such tradeoffs should be considered in the context of RA's primary role as a binding resource sufficiency framework, rather than as a tool for optimizing contracted capacity. To the extent incremental surplus is observed in constrained hours, it reflects this conservative reliability architecture – a feature of the RA program, not a bug. There are multiple aspects of the RA program, including its load forecast and resource accreditation framework that provide similar margins of conservatism.

5.2 Unbundling RA Obligations and RA Procurement

Under the current RA framework, LSE compliance reflects both an obligation to serve load and the procurement of qualifying RA capacity sufficient to meet that obligation. An LSE's compliance position therefore links contracted capacity directly to its hourly load profile. This structure creates clear accountability and incentives for LSEs to align procurement decisions with their individualized load characteristics.

Hourly load obligation trading would partially unbundle these elements by allowing LSEs to transfer hourly compliance obligations without transferring responsibility for procuring the underlying capacity.

Stakeholders supporting hourly load obligation trading contend that such a mechanism could mitigate observed inefficiencies under the SOD compliance framework. As demonstrated in the 2025 filings, there is system-level surplus alongside LSE-level hourly deficiencies. In principle, allowing obligation trades could reallocate surplus positions across LSEs and reduce incremental procurement.

However, separating load obligations from procurement responsibility introduces broader policy considerations. Unbundling may weaken the direct link between contracting decisions and compliance outcomes, potentially complicating accountability, enforcement, and procurement incentives. There is also the consideration of how such a mechanism would flow if at all into the Reliable Clean Power Procurement Program (RCPPP) being considered in the IRP proceeding.[17] New procurement is based on load responsibility just like RA requirements are. The RCPPP design is looking to ensure existing resources are contracted and new resources are getting procured to meet each LSE's share of the future load needs. It is worth considering how various RCPPP options being considered would, if at all, interact with such a mechanism, even if load trading is limited to just one year out procurement requirements.

6. Feasibility

This section evaluates the feasibility of implementing an hourly load obligation trading mechanism within the existing SOD framework, with particular focus on administrative complexity, compliance review timelines, coordination with CAISO processes, and interaction with the current penalty structure. As a starting place we examine how CalCCA's proposed implementation, put forth in R.23-10-011, would feasibly work with the current SOD compliance tools and review processes. We highlight that while CalCCA's proposed implementation is designed to integrate into existing filing tools, implementation would require meaningful changes to review processes and introduce several implementation challenges.

6.1 Integration with Existing Filing Tools and Processes

In R.23-10-011, CalCCA proposed incorporating hourly load obligation trades directly into the existing SOD Showing Tool, with both counterparties reflecting the transaction in the "LSE Showing" and "Custom Profile" tabs of their respective filings. The selling LSE would reduce its hourly obligation, while the buying LSE would increase its obligation by a corresponding amount. ***Figure 9*** and ***Figure 10*** illustrate what this would look like within the existing SOD Showing Tool for the two trading LSEs.[18]

[17] CPUC Energy Division, *RCPPP Staff Proposal*, R.20-05-003 (Apr. 29, 2025).
[18] CalCCA, *Track 3 Proposal,* R.23-10-001.

Figure 9: LSE SOD Showing Example (CalCCA Track 3 Proposal)

LSE 1

Contract ID	Resource ID	NQC Under Contract (MW)	Local RA (MW)	Committed Flexible RA (MW)	Capacity Effective Start Date	Capacity Effective End Date	SCID or Counterparty if not available	MCC Bucket 4	Unspecified Import	Use Default Profile
CAM Storage	CAM Storage Allocation Single Cycle	4.58	0.00	0.00	2025-07-01	2025-07-31	Allocation	FALSE	FALSE	TRUE
CAM Storage	CAM Storage Allocation Multi Cycle	2.92	0.00	0.00	2025-07-01	2025-07-31	Allocation	FALSE	FALSE	TRUE
CAM Peakers	CAM Peaker Allocation	4.61	0.00	0.00	2025-07-01	2025-07-31	Allocation	FALSE	FALSE	TRUE
	PALOMR_2_PL1X3	425.00	425.00	425.00	2025-07-01	2025-07-31	Gen 1	FALSE	FALSE	TRUE
	TOPAZ_2_SOLAR	125.00	0.00	0.00	2025-07-01	2025-07-31	Solar 1	FALSE	FALSE	TRUE
	Load Obligation Purchase	18.00	0.00	0.00	2025-07-01	2025-07-31	LSE 2	FALSE	FALSE	FALSE

LSE 2

Contract ID	Resource ID	NQC Under Contract (MW)	Local RA (MW)	Committed Flexible RA (MW)	Capacity Effective Start Date	Capacity Effective End Date	SCID or Counterparty if not available	MCC Bucket 4	Unspecified Import	Use Default Profile
CAM Storage	CAM Storage Allocation Single Cycle	1.84	0.00	0.00	2025-01-01	2025-12-31	Allocation	FALSE	FALSE	TRUE
CAM Storage	CAM Storage Allocation Multi Cycle	1.18	0.00	0.00	2025-01-01	2025-12-31	Allocation	FALSE	FALSE	TRUE
CAM Peakers	CAM Peaker Allocation	1.86	0.00	0.00	2025-01-01	2025-12-31	Allocation	FALSE	FALSE	TRUE
	JOANEC_2_STABT2	15.00	0.00	30.00	2025-01-01	2025-12-31	BESS 2	FALSE	FALSE	TRUE
	ARCOGN_2_UNITS	50.00	0.00	0.00	2025-01-01	2025-12-31	CHP 2	FALSE	FALSE	TRUE
	ATHOS_5_AP2X2	10.00	0.00	0.00	2025-01-01	2025-12-31	Solar 2	FALSE	FALSE	TRUE
	GEYS11_7_UNIT11	86.00	0.00	86.00	2025-01-01	2025-12-31	Geothermal 2	FALSE	FALSE	TRUE
	VOYAGR_2_VOYWD2	65.00	0.00	0.00	2025-01-01	2025-12-31	Wind 2	FALSE	FALSE	TRUE
	Load Obligation Sale	18.00	0.00	0.00	2025-07-01	2025-07-31	LSE 1	FALSE	FALSE	FALSE

Each LSE would then input the MW quantities and hours transacted in the "Custom Profile" tab within the LSE Showing Template.[19]

Figure 10: Example Load Obligation Trade in Custom Profile Tab (CalCCA Track 3 Proposal)

LSE 1

Contract ID	Resource ID	Resource SubID	MW																							
			HE 1	HE 2	HE 3	HE 4	HE 5	HE 6	HE 7	HE 8	HE 9	HE 10	HE 11	HE 12	HE 13	HE 14	HE 15	HE 16	HE 17	HE 18	HE 19	HE 20	HE 21	HE 22	HE 23	HE 24
	Load Obligation Purchase		0	0	0	0	0	0	0	0	0	0	0	0	10	13	5	14	18	8	0	0	0	0	0	0

LSE 2

Contract ID	Resource ID	Resource SubID	MW																							
			HE 1	HE 2	HE 3	HE 4	HE 5	HE 6	HE 7	HE 8	HE 9	HE 10	HE 11	HE 12	HE 13	HE 14	HE 15	HE 16	HE 17	HE 18	HE 19	HE 20	HE 21	HE 22	HE 23	HE 24
	Load Obligation Sale		0	0	0	0	0	0	0	0	0	0	0	0	0	0	-10	-13	-5	-14	-18	-8	0	0	0	0
CPUC Check for differences			0	0	0	0	0	0	0	0	0	0	0	0	10	13	-5	1	13	-6	-18	-8	0	0	0	0

CalCCA's proposed implementation describes the validation process as also working similar to the current process for identifying and correcting mismatches with supply plans. They provided three examples of mismatches that could be resolved by allowing the LSEs with the mismatches the opportunity to correct their showings and resubmit, noting that "[this] process follows the process used today when an LSE shows a resource that is not included in a supply plan".[20]

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[19] ibid.

[20] ibid, at 15.

Energy Division has examined CalCCA's proposed implementation in more detail for feasibility and complexity. While the approach CalCCA put forward attempts to leverage the existing SOD filing structure and avoids the need for a separate filing template or an additional tab to be created, the examination highlights some barriers and complexities that require further consideration.

Staff begins reviewing monthly compliance filings at T-45 by examining RA filings and supply plan validations against fixed YA CPUC allocations. Based on these reviews, Staff drafts correction notices and continues refining them between T-45 and T-37 as supply plan validations are updated. Supply plans are extracted directly from CAISO's CIRA system multiple times during this period, which is necessary because initial T-45 validations often show high levels of mismatches that are resolved in the days following submission.

Correction and deficiency notices must be sent by approximately T-37 to provide LSEs five business days to cure issues before CIRA locks supply plans at T-30. To meet these tight deadlines, Staff uses automated scripts that perform validation checks, including cross-validation against multiple vintages of supply plans pulled between T-45 and T-37. Each new vintage is used to update and refine the correction notices. Because RA requirements are locked, correction notices only change in response to updates in supply plan validations during this period.

Hourly load obligation trading would disrupt this process by making obligations variable during the compliance review window. Before staff could validate supply plans or assess procurement sufficiency, obligation trades would need to be reconciled across multiple LSE filings. Any unresolved mismatches would prevent staff from determining which LSE is responsible for meeting a given hourly obligation, forcing deficiency notices to become conditional and undermining their effectiveness. Given the number of LSEs, hours, and transactions involved, even a limited number of unresolved trades could delay or impede the MA compliance review.

While one potential approach would be to introduce an intermediate step to validate and lock obligation trades before supply plan review begins, doing so would add an additional layer of review to an already compressed timeline and increase the risk that compliance notices could not be issued before CAISO locks supply plans at T-30.

Validation Scripts would also have to be updated to accommodate hourly trading obligations as the current scripts and templates are tied to the MRD and the LSE allocation tab. Based on CalCCA's proposed implementation (in the last RA proceeding), the implementation would occur on the supply side rather than the load side. This means that RA requirements which are informed by the LSE allocation tab and associated PRM would not change in the tool (essentially, the PRM becomes unbundled from the load trade). Because the PRM is applied as a percentage of each LSE's load obligation, modifying obligations through hourly trading would also implicitly modify the associated PRM requirement. Unbundling the PRM from fixed load allocations introduces additional complexity in ensuring that reserve margins remain consistently applied and transparently reflected in compliance determinations.

In sum, although CalCCA's proposal seeks to build upon the existing SOD framework, implementation would require meaningful modifications to the validation process. The shift from fixed to effectively variable obligations during the compliance window would prompt necessary changes to the review process that warrant careful consideration.

6.2 Additional Compliance Review Steps

Even with integration into the current tool, hourly obligation trading would materially alter how filings are reviewed. Unlike contracted resources shown, which rely on independently verifiable capacity values and count toward fixed, binding hourly requirements, obligation trades would require verification and reconciliation across LSE showings and alter the hourly requirements that resources are being shown to meet. Any obligation trade mismatches would necessitate follow-up with the involved LSEs and potentially require revised filings before staff could even proceed with supply plan compliance verification.

These reconciliation steps would need to occur before Staff can assess whether an LSE has procured sufficient capacity to meet its adjusted obligations, as the trades themselves modify the underlying requirement. As a result, obligation trading introduces an additional dependency in the review process that does not exist under the current framework.

Energy Division typically has approximately four to five business days to review all MA RA filings across 38 LSEs. Within that limited timeframe, Staff must validate requirements have been satisfied by preforming multiple compliance tests, and validating RA filings against CAISO supply plans.

Hourly load obligation trading would add several new review steps, including:

- Initial cross validation of load obligation trades – Validate LSE load trades ahead of validation of supply plans. This will lock requirements for the respective MA.
- Correct Load Trade Mismatches – Send correction notices to LSEs to resolve *load obligation trade* mismatches within a shortened cure period.
- Final cross validation of load trading obligation – Validate resubmitted load trades.
- Incorporate Final Cross Validation into allocations and lock revised allocations (based on validated load obligation trades) for use in MA filing – This enables the locking of compliance obligations that LSEs will use to determine what they need to include in their filings to comply with their new RA obligations.

These additional steps would increase Staff workload and introduce new potential failure points in the compliance process. Even a small number of mismatched trades could delay review of the entire filings across multiple LSEs, given the interdependence of load obligation adjustments and compliance checks.

One potential mitigation would be to require hourly obligation trades to be submitted in advance of the standard filing deadline, such as two business days prior to the T-45 deadline. While this could provide Staff additional time to validate trades and adjust requirements, it would also impose new procedural requirements on LSEs and add more days each month where Staff is reviewing compliance filings.

6.3 Interaction with CAISO Validation

Under current practice, LSEs must ensure consistent RA capacity commitments are demonstrated both to the CPUC and CAISO, allowing for aligned verification of RA obligations and resource capacity across the two programs. CAISO's verification process determines whether reliability backstop procurement (CPM) is necessary. While CAISO currently uses a monthly peak load forecast for its validation and the CPUC uses a 24-hour peak day load forecast, the resulting peak load hour values are aligned for each month, enabling consistent evaluation of peak-hour obligations.

If an LSE were to reduce its CPUC RA obligation for the peak hour through hourly load obligation trading, it would correspondingly be able to procure or show less capacity in its SOD filings. However, unless CAISO were to recognize and incorporate such obligation trades into its own compliance framework, the LSE would continue to be evaluated by CAISO against its original peak load obligation. In that case, an LSE could appear compliant for CPUC purposes while simultaneously appearing deficient under CAISO supply plan validation.

We note that there is already misalignment between the CPUC's SOD validation processes and CAISO's peak-hour validation process. In short, CAISO's process only looks at one hour whereas the CPUCs process looks at 24-hours of both load requirements and resource value. Adopting hourly load obligation trading at the CPUC without corresponding treatment at CAISO would further widen this misalignment. While obligation trading could cure short positions for CPUC compliance purposes, it could also increase the likelihood that an LSE appears deficient under CAISO review.

If CAISO were to initiate reliability backstop procurement to address a collective shortfall, the associated costs would be allocated to LSEs deemed deficient under CAISO rules, rather than based on CPUC-adjusted obligations. This would create a misalignment between cost responsibility and the obligations established for CPUC compliance, weakening the link between RA requirements and reliability outcomes.

In practice, if obligation trades are reflected only in CPUC filings, LSEs may be limited in how much they can trade without risking CAISO compliance deficiencies. Even if CPUC rules allow the trading mechanism, LSEs may be reluctant to use it if it increases their risk of noncompliance with CAISO requirements. As a result, CAISO requirements could limit the use of hourly load obligation trading and reduce its potential benefits.

As discussed in CalCCA's proposal and elsewhere in this report, hourly load obligation trading should not create aggregate system deficiencies, since such trades net to zero across the system and do not reduce total RA requirements. Because the counterparty assuming additional load would be required to demonstrate sufficient resources to CAISO to serve that load, obligation trades would preserve overall system adequacy from a reliability perspective.

Under current tariff provisions, CAISO retains authority to address deficiencies through its Capacity Procurement Mechanism (CPM) but generally does not initiate backstop procurement based solely on individual LSE shortfalls. As a result, an LSE may assess the risk of CAISO enforcement related to hourly load obligation trading as relatively low, particularly where such trading avoids CPUC RA deficiencies and does not result in a system-wide shortfall.

Nevertheless, CAISO has authority to procure capacity via the CPM for a variety of reasons, including system wide shortfalls, local reliability shortfalls, flexible capacity shortfalls, operational needs for exceptional dispatch and for significant events[21]. If that were to occur, cost allocation would be based on CAISO's view of LSE obligations, not on CPUC adjusted positions, which may expose LSEs engaged in obligation trading to backstop costs despite being compliant with CPUC RA requirements. We have seen instances where the collective over procurement of RA by CPUC LSEs has supported and avoided CAISO backstop procurement.

These issues highlight how adopting hourly load obligation trading at the CPUC without corresponding recognition at CAISO could increase uncertainty for LSEs and further widen the divergence between the two RA programs, even where such trading does not decrease aggregate RA requirements.

6.4 Penalty Structure and Dispute Resolution

CalCCA proposes that the existing RA penalty structure remain unchanged under an hourly obligation trading framework.[22] In the event of a dispute or error related to a trade, the responsibility for any resulting deficiency would default to the LSE originally assigned the obligation, and penalties would be assessed accordingly.

While this approach preserves continuity with the current penalty regime, it introduces additional complexity in determining responsibility when deficiencies arise as detailed in Section 6.1 and 6.2. Disputes over load trades (including the volumes and hours) would require Staff to reconstruct obligation assignments under tight timelines, particularly if deficiencies are identified late in the compliance review process.

Moreover, the prospect of penalties reverting to the original obligation holder may affect LSE willingness to engage in trading or could necessitate additional contractual protections between counterparties, further complicating the market for obligation trades.

As noted in Section 6.1 (Integration with Existing Filing Tools and Processes), not having clear tools and processes to communicate deficiencies to LSEs could have downstream impacts on the ability to enforce compliance.

[21] CAISO Tariff 43A.2 Capacity Procurement Mechanism Designation.
[22] CalCCA, *Track 3 Proposal,* R.23-10-001.

6.5 Example: Administrative Complexity of Hourly Load Obligation Trades

To illustrate the implementation and compliance challenges associated with hourly load obligation trading, this subsection presents a simplified, hypothetical example of how such trades might occur under the SOD framework, and the administrative implications that would follow.

Hypothetical Load Obligation Trading Scenario

Assume three LSEs – LSE A, LSE B, and LSE C – with differing hourly positions in a given MA compliance month:

- LSE A is long in HE 15 – 18.
- LSE B is deficient in HE 15 – 20.
- LSE C is long in HE 16 – 20.

To address its short positions, LSE B enters into two bilateral hourly obligation trades:

- LSE B sells 40 MW of obligation to LSE A for HE 15 – 18.
- LSE B sells 30 MW of obligation to LSE C for HE 16 – 20.

Individually, each trade appears straightforward. However, together they modify hourly obligations across three entities and overlap in HE 16 – 18. As a result, the compliance position of each LSE becomes dependent on the accuracy and validity of the other parties' filings.

Compliance Review (Sections 6.1 and 6.2)

Under the current MA review process, Staff evaluate each LSE's showing against fixed hourly requirements and allocations. Compliance determinations can be made independently because obligations do not change during the review window.

In this scenario, however, the obligations of LSE A, LSE B, and LSE C remain unsettled until both trades are confirmed across counterparties. Staff cannot finalize supply plan validation or determine procurement sufficiency until the obligation transfers are verified and effectively "locked." This creates a new prerequisite step in the review process: cross-LSE validation of trade entries before the compliance review can begin.

The interdependency becomes more pronounced if a mismatch occurs across trades. For example, if LSE C reports 25 MW rather than 30 MW in HE 16 – 20, LSE B's adjusted obligation would differ from what it expected when preparing its filing. Staff would need to notify both counterparties and allow coordinated correction. During this period, neither LSE's compliance status could be conclusively determined.

Unlike resource showings, where a discrepancy typically affects only the submitting LSE, an error in a load obligation trade directly alters another LSE's requirement. A single incorrect trade entry can therefore impact compliance outcomes for both parties and require Staff to re-run validation checks across multiple

LSE submissions. This interdependence increases the likelihood that one LSE's filing error delays or complicates the review of others.

Interaction with CAISO Validation (Section 6.3)

The same concern extends to CAISO validation. If LSE B reduces its CPUC obligation through trading, it may show less capacity in its SOD filing. Unless CAISO recognizes the same adjustment, LSE B could appear compliant under CPUC review but deficient under CAISO supply plan validation.

In that case, the consequences of the trade extend beyond SOD hourly compliance: one LSE's obligation transfer could shift risk exposure under a separate regulatory framework. The divergence between CPUC-adjusted obligations and CAISO-evaluated obligations introduces additional uncertainty for trading counterparties.

Enforcement and Attribution (Section 6.4)

If a trade were invalidated late in the review process due to a mismatch, untimely correction, or rescission, the resulting deficiency would revert to the original obligation holder under the proposed penalty construct. Determining responsibility would require reconstructing the trade sequence under compressed timelines.

Where trades overlap across multiple hours and counterparties, tracing the source of a deficiency becomes more complex. Compliance outcomes for one LSE may depend not only on its own filing accuracy, but on the accuracy and timeliness of multiple counterparties' submissions.

Scaling Adds Additional Complexity

Although this example involves only three LSEs and two trades, the complexity scales quickly as participation in load obligation trades increases. If multiple LSEs execute hourly obligation trades in a given month, Staff would need to:

- Reconcile numerous bilateral trade entries across counterparties and hours;
- Validate obligation adjustments before initiating supply plan review;
- Update compliance scripts and allocation references to reflect adjusted requirements;
- Re-run downstream compliance tests after each correction cycle; and
- Monitor alignment with CAISO validation timelines.

As the volume of trades increases, so does the number of potential mismatches and revision cycles within the compressed T-45 to T-37 window. The review process, which currently relies on fixed allocations and largely parallel validation across LSEs, would shift toward a more iterative and sequential structure. Even where most trades are entered correctly, the additional validation layers introduce new dependencies and expand the scope of monthly compliance review.

Implications for Feasibility

This example demonstrates that hourly load obligation trading would not simply add an additional product to the SOD framework; it would modify the structure and sequencing of compliance review. Trades ultimately impact the underlying hourly requirement rather than the supply used to meet it, requiring obligation adjustments to be validated, locked, and incorporated into allocations before procurement sufficiency can be assessed.

In addition to cross-LSE reconciliation, implementation would require updates to validation scripts, changes to review timelines, potential adjustments to filing deadlines, and coordination considerations with CAISO processes. These added steps increase administrative burden and introduce new points of compliance risk.

Accordingly, while hourly load obligation trading may be conceptually straightforward at the bilateral level, its integration into the existing SOD compliance framework would require meaningful process redesign and careful consideration of review timelines, tool modifications, and inter-agency alignment.

7. Conclusion

This report evaluates hourly load obligation trading under the SOD framework through the lenses of need, potential benefits and costs, and feasibility, consistent with the Commission's prior direction. Based on the first year of binding SOD compliance, the filing record does not indicate a systemic inability for LSEs to meet hourly requirements using existing procurement and contracting mechanisms. While YA deficiencies occurred at the individual LSE level, those deficiencies were resolved by the MA filings, and aggregate system conditions remained long in all hours evaluated.

Our analysis of the recent RA transactions taken from the RA contract price database (used to calculate PCIA benchmarks) reflects that LSEs are transacting for a diverse set of SOD products enabling them to meet monthly SOD obligations.

Our analysis of the benefits confirms that hourly trading could result in lower overall procurement levels through realizing the diversity benefits of aggregating load. While in theory the potential benefits of such a mechanism will allow the load diversity benefit to be captured, it's uncertain what quantity of benefits could actually be realized given the complexities of the bilateral market, CAISO backstop mechanisms, and lumpiness in having 38 LSEs managing procurement portfolios.

Our analysis of the feasibility of implementing an hourly load obligation trading mechanism demonstrates the significant administrative complexity it would introduce, particularly within the already compressed MA timeline under which Staff administers the RA program. Staff conclude that the potential benefits of such a mechanism do not justify the added complexity and risk of unintended consequences associated with its implementation. Accordingly, Staff recommend continuing to monitor market performance as the SOD framework continues to mature.

(END OF APPENDIX A)