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ORANGE COUNTY POWER AUTHORITY  
Load Management Standards Plan

March 19, 2024

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## **Introduction of Load Management Standard (LMS)**

### **LMS Overview**

In 2022, California updated its Load Management Standards (LMS) with amendments aimed at increasing demand flexibility statewide. This supports the state's climate policies and the accelerated adoption of renewable energy technologies. Additionally, the updated LMS will serve as a pivotal regulatory framework with the primary objective of improving the efficiency of Time-of-Use (TOU) electricity consumption. These standards apply to major electricity providers, including investor-owned utilities (IOUs), large publicly-owned utilities, and Community Choice Aggregators (CCAs) that supply over 700 GWh annually.

Under the mandates of the LMS, IOUs and CCAs are required to provide customers with access to rates or programs that offer vital information for optimizing energy consumption. Specifically, CCAs are directed to develop marginal cost-based rates and demand response programs structured according to specified guidelines.

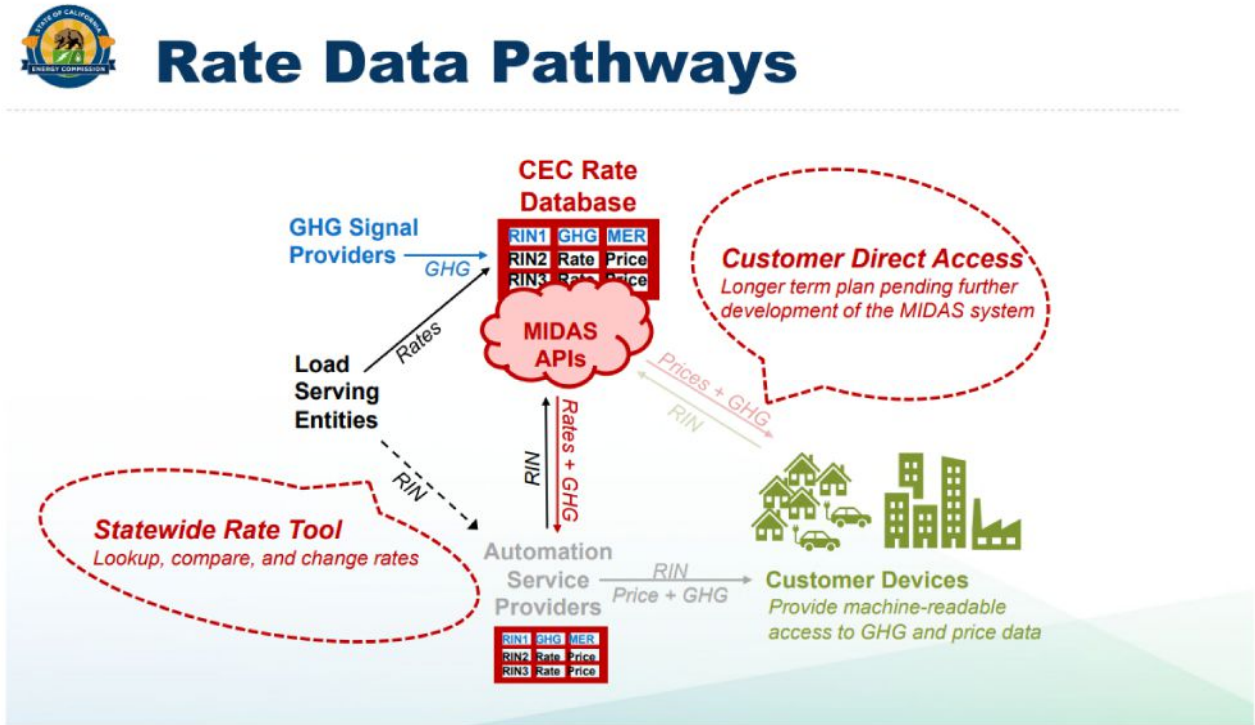
By fulfilling the requirements for the LMS, California Energy Commission (CEC) and participating parties aim to achieve the following goals.

- Reduce Greenhouse Gas Emissions
- Improve Grid Reliability
- Reduce Electrical System Costs
- Increase Customer Choice

### **LMS Implementation and Operation Summary**

Each participating entity is responsible for uploading its time-dependent rates and corresponding Rate Identification Access Numbers (RINs) to the CEC's Market Informed Demand Automation Server (MIDAS). The MIDAS database serves as a central repository for these rates and RINs, providing customers with essential information on time-dependent rates. Subsequently, a user-friendly RIN access tool will be developed by the participating parties, either collaboratively or independently, to enable third parties to assist customers in managing their rate enrollment, with all changes being subject to customer authorization.

Figure 1 (Load Management Standard Implementation by CEC (Docket Numner 23-LMS-01)



## LMS Key Areas

The LMS key areas focus on enhancing the efficiency and responsiveness of the energy market through several strategic initiatives:

- Maintain accurate and up-to-date information on time-dependent rates in the publicly available and machine-readable MIDAS rate database for both existing and future rates.
- Establish a standardized tool that provides access to rate information, enabling third-party providers of demand response and load management services to utilize the data.
- Develop and submit dynamic pricing rates based on locational marginal prices, which update hourly to reflect the marginal costs of wholesale electricity procurement.
- Incorporate educational information about newly implemented time-dependent rates and related automation technologies into customer outreach and education initiatives.

## LMS Timeline

Date	Milestone
2023 April	Load Management Standards go into effect
2023 July	Upload Existing time-dependent rates to MIDAS
2023 - 2024	Submit Compliance Plans
2024 April	Rate Identification Numbers on Customers Bill
2024 October	Submit Rate Information Access Tool
2025	Submit Load Management Rates and Programs
2026 -2027	Implement Load Management Rates and Programs

### Developing Time-Dependent Rates for LMS

The implementation of marginal cost-based electricity pricing, while technically feasible, requires careful consideration of various factors to achieve the desired outcomes envisioned by the LMS. Despite the technological advancements that provide CCAs like Orange County Power Authority (OCPA) with access to essential data on power costs, customer load profiles, and energy consumption patterns across various customer segments, significant steps remain. CCAs, including OCPA, must closely collaborate with energy trading partners and data management experts to facilitate the expedited delivery of hourly variable data, ensuring its accuracy and quality. Understanding the historical correlations within these datasets is crucial for developing cost-effective and appropriate time-dependent rate structures. Regular updates to data operations are vital to reflect changing factors promptly and optimize rate setting accurately. This process will require tight integration with the agency's financial projection. Over the next two years, OCPA is expected to play a significant role in advancing these initiatives to meet the objectives.

### OCPA's Current Status

#### Uploading Hourly Rates to MIDAS Based on Current TOU Rates

Since July 2023, OCPA has diligently created and uploaded hourly rate tables for all three products to MIDAS, in compliance with CEC requirements. These tables, covering the full calendar year for each OCPA TOU rate, are uploaded via the API following CEC guidelines. OCPA has developed internal capabilities to meet these requirements and maintains communication with CEC staff for review. In 2024, the regular uploading task was initially delegated to Calpine, OCPA's billing data management service provider, which also undertook the uploading task for all its CCA customers. However, OCPA will

resume responsibility for this task once the time-dependent rates need to be deployed, ensuring our new rates become effective within a day or less.

### **Rate Identification Numbers (RIN) on Customer Bills**

By April 1, 2024, CEC mandates large CCAs, including OCPA, to include a RIN on customer bills. In compliance with this requirement, OCPA is collaborating with Calpine to implement RIN and QR codes on customer bills starting from April 1, 2024. Furthermore, plans are in place to launch a webpage by October 2024, enabling customers to access their rates using the RIN. Additionally, OCPA is exploring participation in the Statewide Standard Webpage initiative, which is led by California Community Choice Association (CalCCA) and Ava Community Energy.

### **2024 OCPA Demand Response Program**

In 2024, OCPA is piloting its Summer Readiness program, targeting large energy commercial customers within its jurisdiction. This program incentivizes voluntary load shifting or reduction among these customers during peak demand days from July to early September. The Summer Readiness program aims to alleviate grid stress and emergencies caused by unexpectedly high energy consumption during the summer. Participating customers will receive monetary incentives for incremental load reductions achieved, with no penalties for failing to meet reduction targets. Additionally, OCPA has enrolled in Southern California Edison's (SCE) Emergency Load Reduction Program (ELRP), allowing eligible OCPA customers to benefit from SCE's incentives for reducing energy consumption during grid emergencies declared by the California Independent System Operator (CAISO).

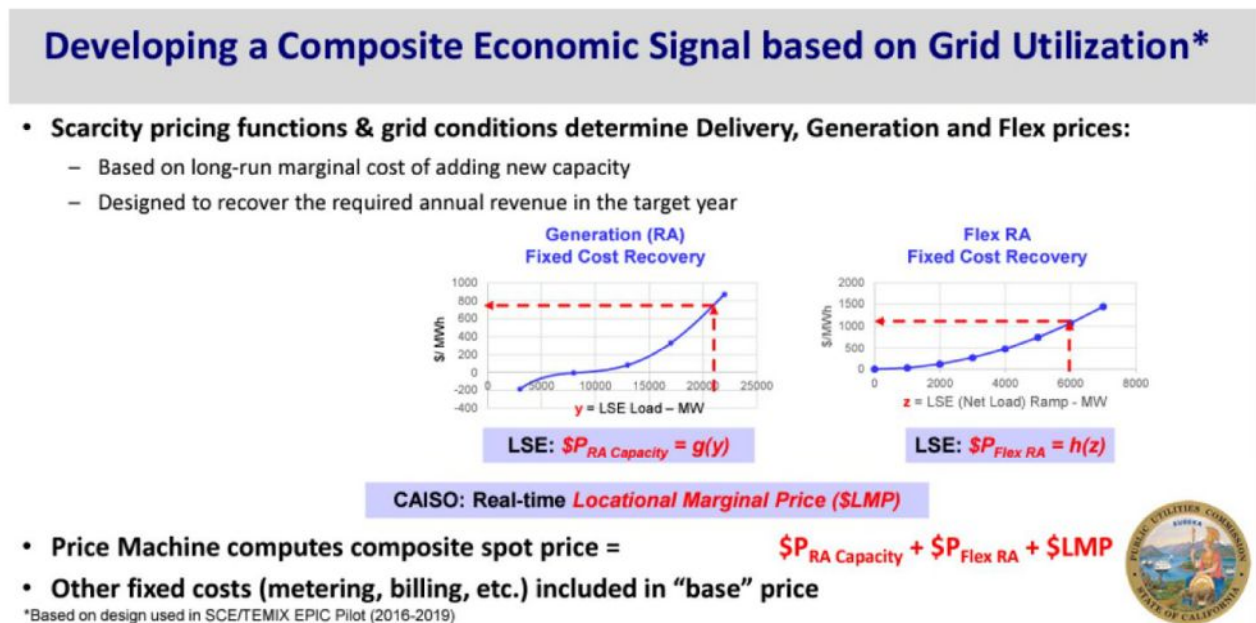
## **OCPA's Future Projects**

### ***OCPA's Time-Dependent Rate Development***

By July 1, 2025, qualified CCAs and IOUs are required to submit a dynamic rate for board approval. Subsequently, by July 1, 2027, they must offer their customers the option to voluntarily participate in this rate. The development of dynamically changing rates necessitates ongoing communication regarding cost-effectiveness and technological feasibility, as well as clarity about the expected outcomes, such as load shifting, with the CEC, other utilities, and CCAs.

When establishing dynamic rates, it is essential to consider a variety of factors, both known and unknown. These factors include real-time Locational Marginal Price (LMP) with fixed cost recovery, which impacts Resource Adequacy (RA) costs, and quantifiable Greenhouse Gas (GHG) emission factors that serve as success metrics for the LMS. Additionally, as a financially reliable agency, it is crucial to assess the fiscal impact of customers changing their load shape. Continuous communication with SCE regarding the outcomes of their Dynamic Pricing Pilot, the CEC's expansion plans related to the LMS, and the technological feasibility of these initiatives is paramount for ensuring our future success in rate-setting (see Figure 2).

Figure 2. Developing a Composite Economic Signal based on Grid Utilization



### ***Effectiveness of Developing Time-dependent Rates for OCPA: Perspectives from Grid Reliability and Carbon Emission Goal***

As previously discussed, the success criteria for the long-term project with the CEC are twofold:

1. Enhancing grid reliability through voluntary load shifting.
2. Decreasing carbon emissions by shifting load away from peak hours.

Figure 3 illustrates the hourly fluctuations in actual SP 15 prices in late July 2023, while Figure 4 displays the hourly breakdown of energy sources within the CAISO for the year



2020. An analysis of the spike in CAISO's LMP after 4 pm reveals a heavier reliance on conventional energy sources over renewables. This visual representation effectively highlights CEC's dual objectives.

Figure 3. Hourly SCE LMPs in July 2023

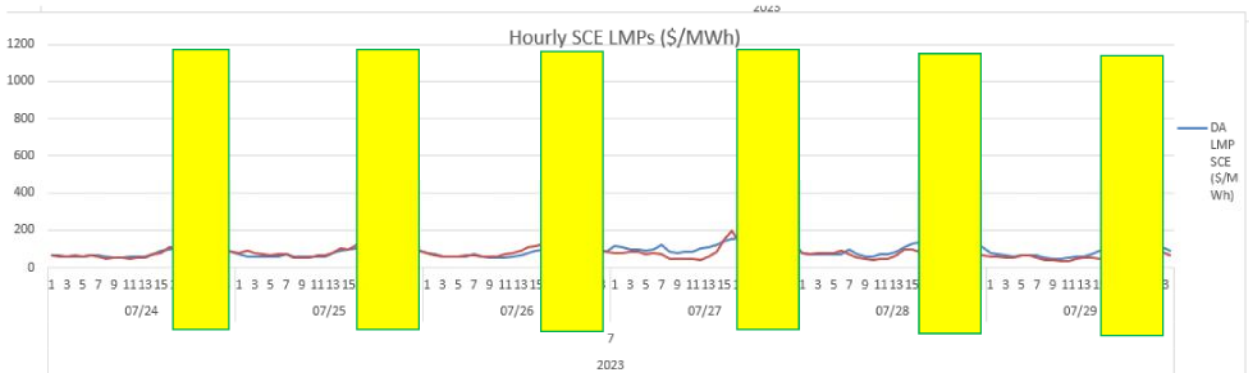
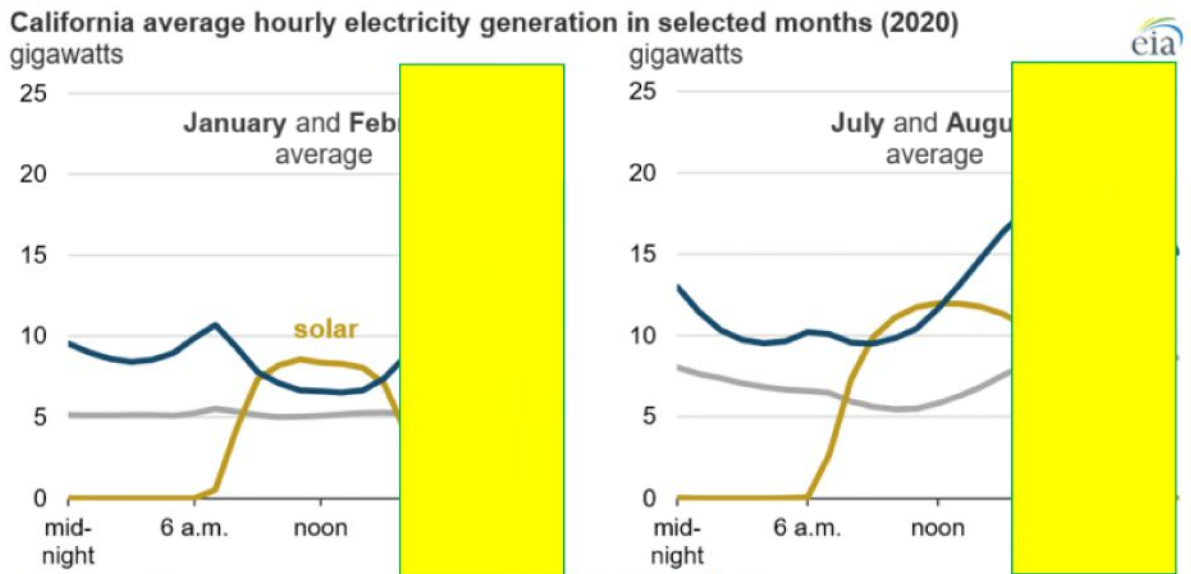


Figure 4. From U.S. Energy Information Administration



Source: U.S. Energy Information Administration, *Hourly Electric Grid Monitor*  
 Note: Data are for the California region, which includes electric power markets regulated by the California Independent System Operator (CAISO) and other balancing authorities operating largely in California.  
 Size of this preview: 800 × 436 pixels. Other resolutions: 320 × 174 pixels | 640 × 348 pixels | 1,045 × 569 pixels.

Given SCE's substantial \$54 million budget for their Dynamic Rate Pilot, it is crucial for OCPA to thoroughly assess the effectiveness and scope of implementing the LMS application to ensure a meaningful impact on the CEC's initiative. While the CEC

currently mandates only one rate for IOUs and CCAs under the time-dependent (hourly) rate structure, expanding the number of rates could introduce risks, including increased budgetary requirements for potentially marginal gains and added complexity in daily rate management. Additionally, the voluntary nature of participation presents the risk of falling short in achieving the desired contribution to California's objectives. Moreover, balancing budget constraints with the challenges of potential cost recovery and the necessity for robust customer engagement is crucial. As SCE's pilot program serves as one of the models for us to gauge our program's success, we will closely monitor their results to evaluate effectiveness and accurately estimate organizational costs.

### ***OCPA's Efforts to Fortify and Diversify Demand Response***

To effectively implement the LMS plan, OCPA will build upon its existing and forthcoming energy programs, such as the Summer Readiness program. OCPA will encourage customers to voluntarily install smart devices and participate in future Demand Response programs. These devices will respond to price signals from the dynamically changing rates, enabling control to shift loads away from peak periods. Additionally, OCPA intends to explore advanced optimization techniques that factor in weather forecasts and grid conditions for more accurate short-term energy forecasts.

OCPA will also engage in discussions with the CEC to align on goals and receive guidance about this LMS initiative, alongside our CCA and IOU partners. Future communications with the CEC will provide a clearer picture of how to achieve our goals in more cost-effective ways. Furthermore, as OCPA plans to create cost-of-service-based rates, we will explore the feasibility of implementing a time-dependent rate setting as part of OCPA's pilot, provided the conditions are met.

Lastly, we will actively participate in the development of a statewide tool for customers to conveniently look up hourly changing rates. This effort will be complemented by further developing our platform to enhance rate visualization for our customers, building upon the statewide tool.

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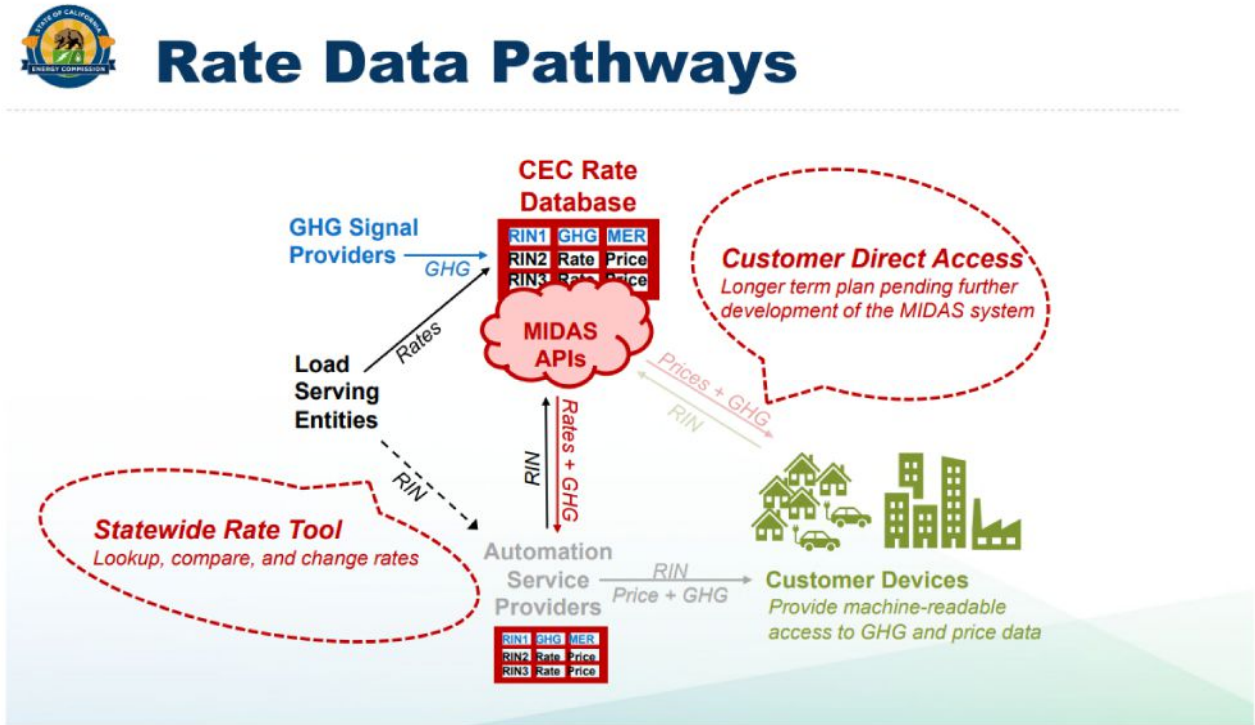
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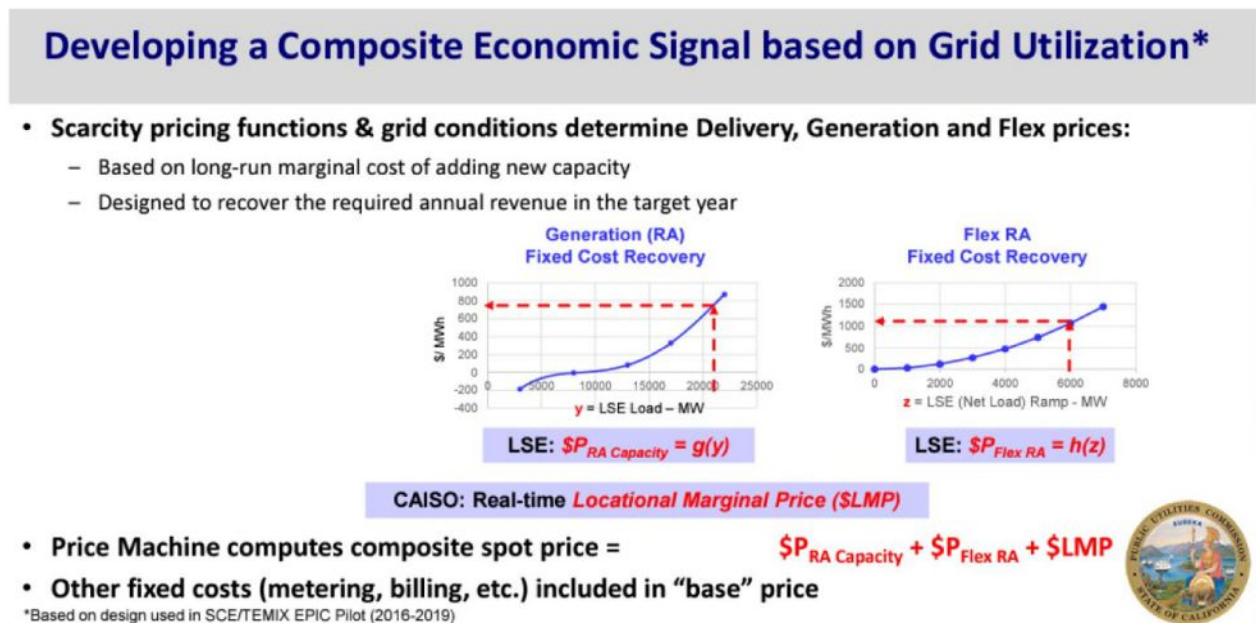
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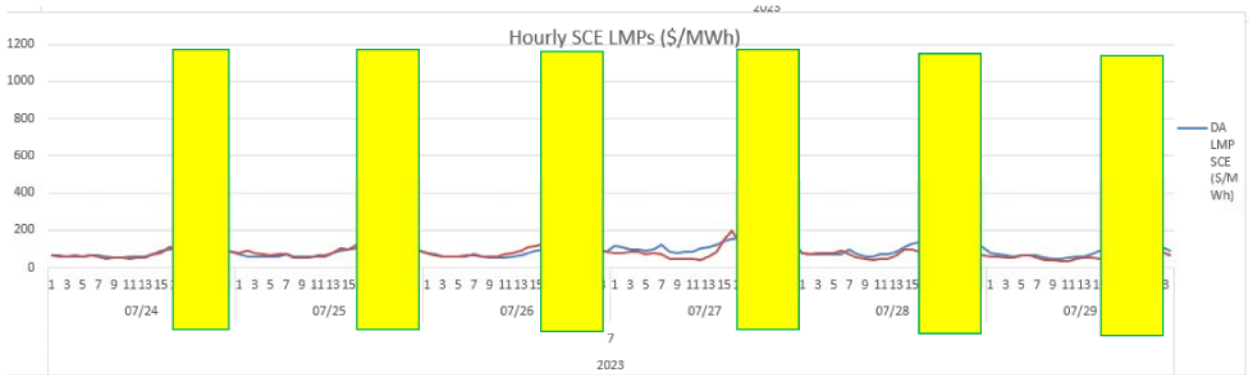
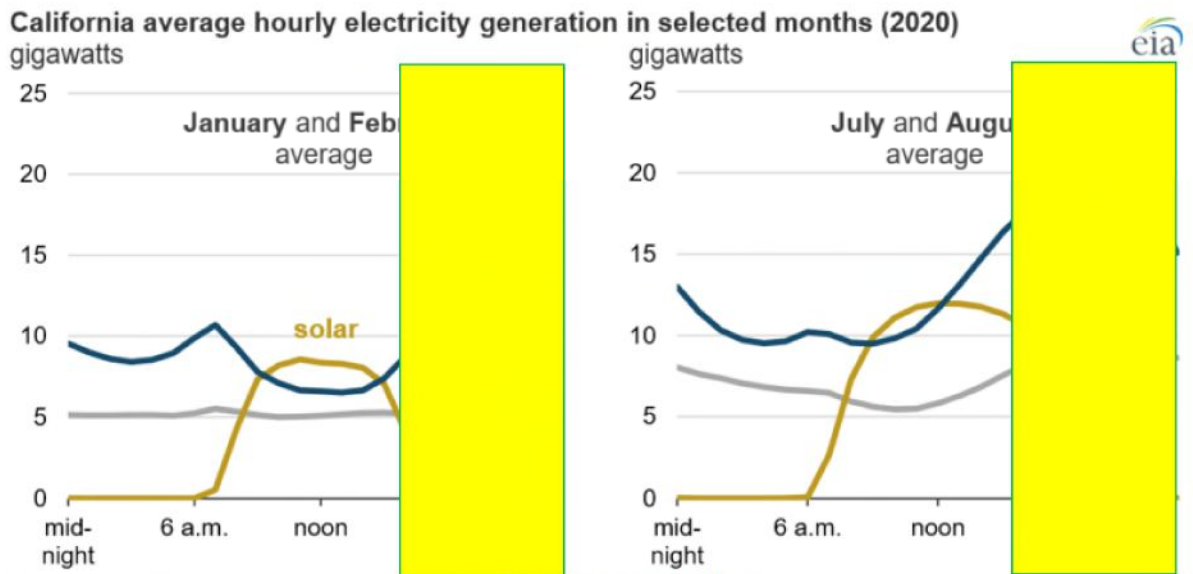


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