

<b>DOCKETED</b>	
<b>Docket Number:</b>	24-IEPR-03
<b>Project Title:</b>	Electricity Demand Forecast
<b>TN #:</b>	259393
<b>Document Title:</b>	Presentation - Flexible Resource Adequacy
<b>Description:</b>	2B. Amber Motley, CAISO
<b>Filer:</b>	Raquel Kravitz
<b>Organization:</b>	California ISO
<b>Submitter Role:</b>	Public Agency
<b>Submission Date:</b>	10/1/2024 2:29:42 PM
<b>Docketed Date:</b>	10/1/2024



# Flexible Resource Adequacy

Amber Motley  
Director, Short Term Forecasting

October 2<sup>nd</sup>, 2024

# Agenda

- Flexible Resource Adequacy (Flex RA) Overview
- Hourly Profile Challenges
- Recommendations

# California ISO BAA Renewables

Historical statistics and record (as of May 30, 2024)

Solar peak **NEW!**

**19,650 MW**

August 23, 2024 at 12:07 pm

**Previous record:**

19,368 MW, June 20, 2024

Wind peak

**6,465 MW**

May 28, 2022 at 5:39 pm

**Previous record:**

6,265 MW, March 4, 2022

Peak percentage of renewables compared to demand

**117.3%**

April 20, 2024

**Previous record:**

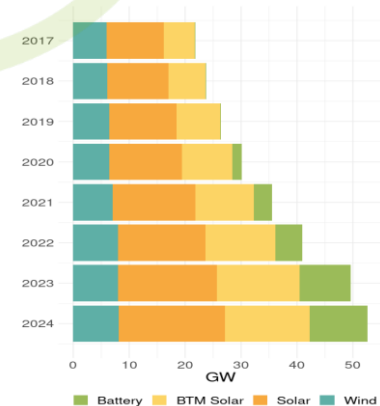
107%, June 2023

Number of Renewable Resources: **529**

MW Forecasted Large Scale Renewables: **27,872 MWs**

MW Capacity Behind-the-Meter Solar: **16,200 MWs**

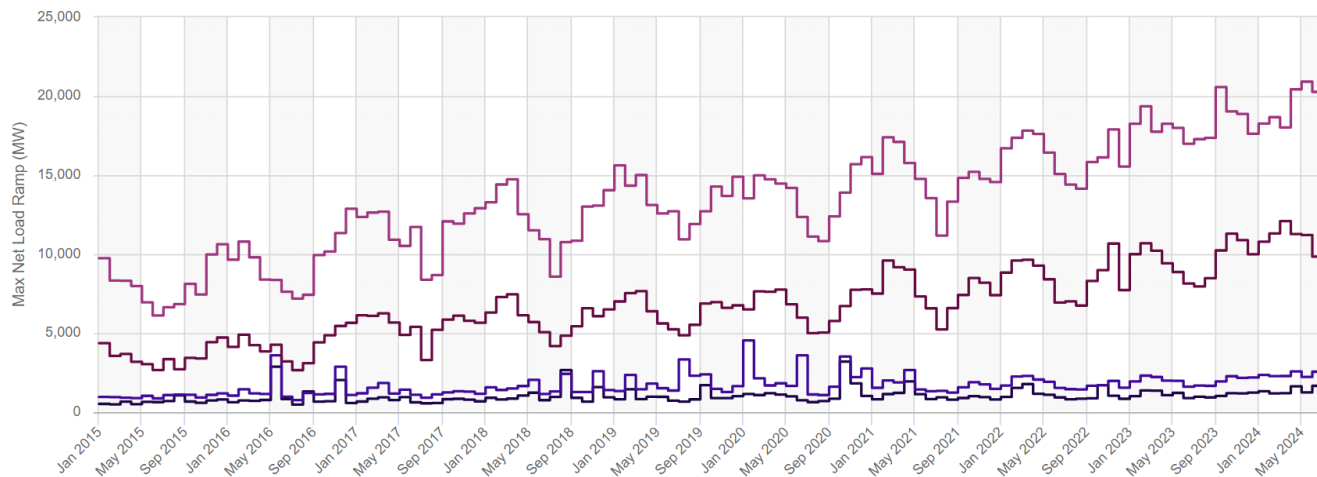
Values are approximate as of May 2024



# Flex RA Process Review

- Goal: Ensure Load Serving Entities (LSEs) contract for adequate capacity to meet expected flexible needs.

Monthly Maximum Net Load Ramp ⓘ



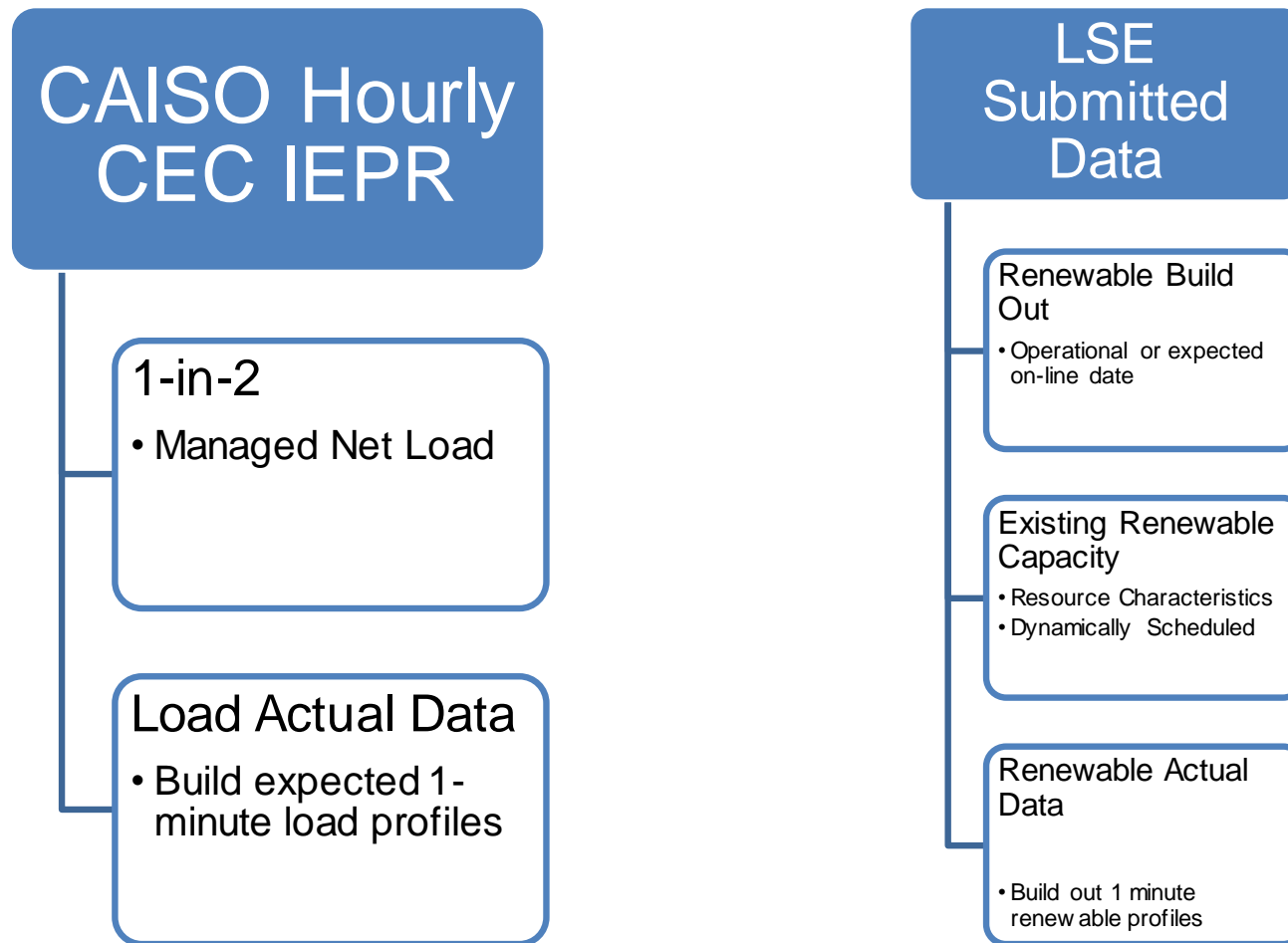
## Program Design:

- Annual Flexible Capacity Needs Assessment
- Annual Effective Flexible Capacity (EFC) list
- Categories of Flexible RA

## Effective Flexible Capacity (EFC):

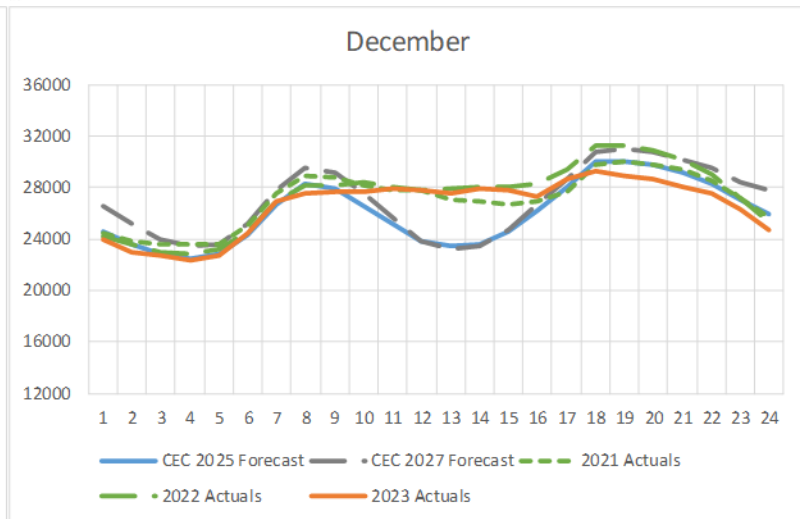
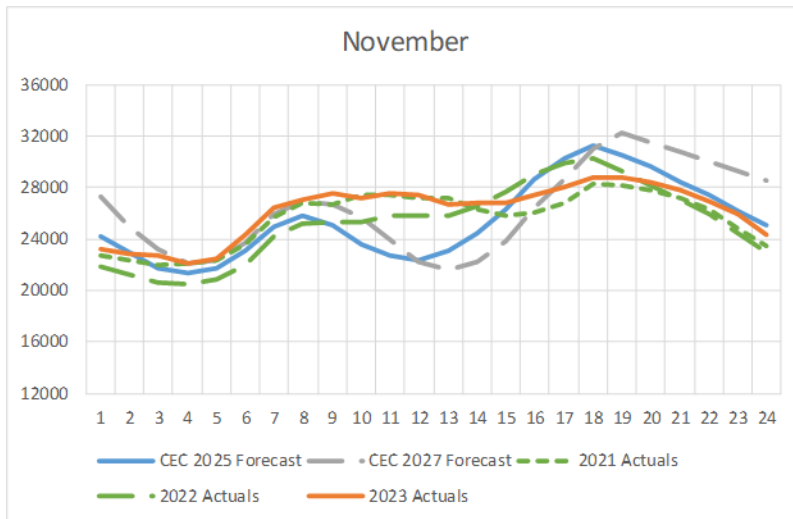
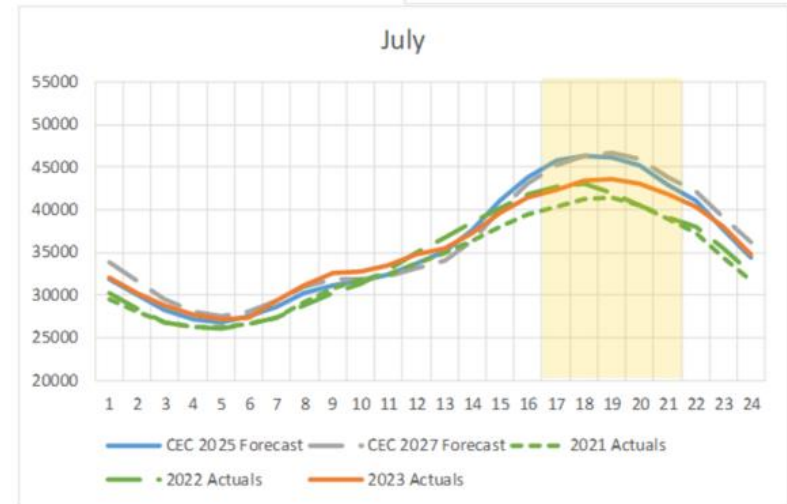
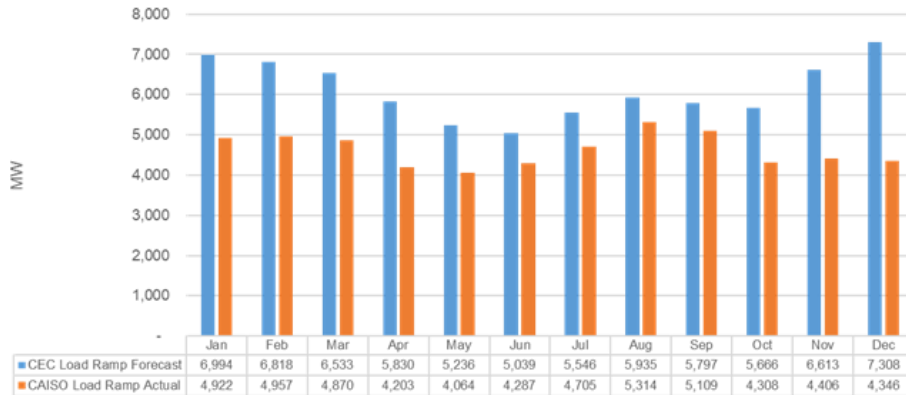
The maximum MW of flexible capacity a resource has the capability to provide based on the ISO's counting criteria.

# Flex RA Data Inputs

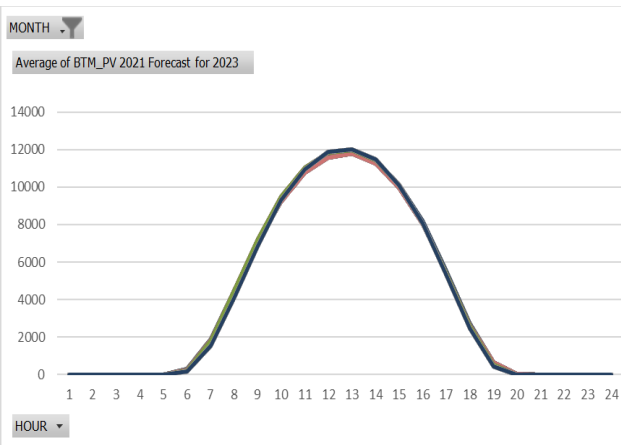


# IEPR 3 hour net load ramp has trended higher than observed actuals

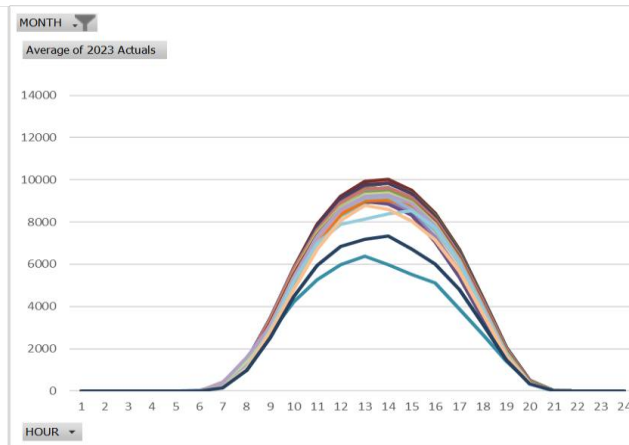
CEC Forecast vs ISO Actual Maximum Three-Hour Load Ramp: 2021 and 2022 Average



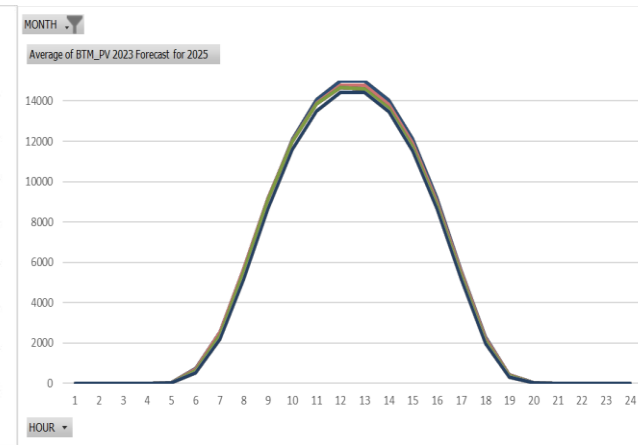
# Behind the meter solar plays a key role in hourly demand shapes: July Examples



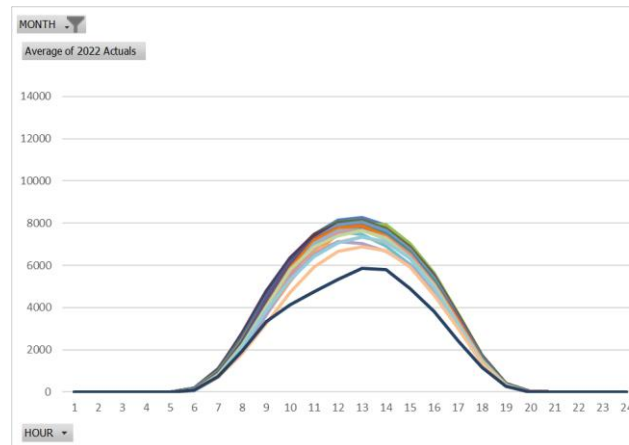
2023 CEC Forecast



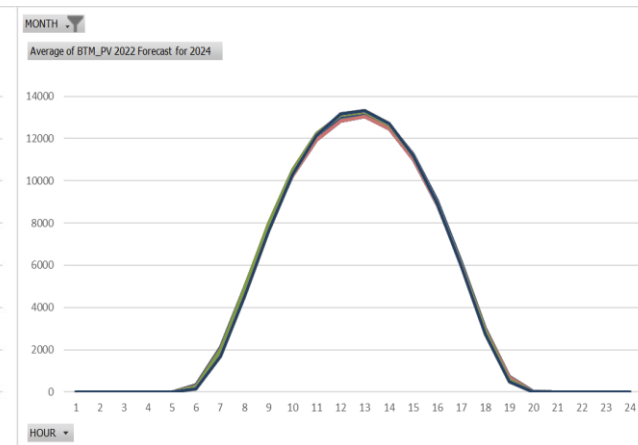
2023 CAISO Actuals



2025 CEC Forecast



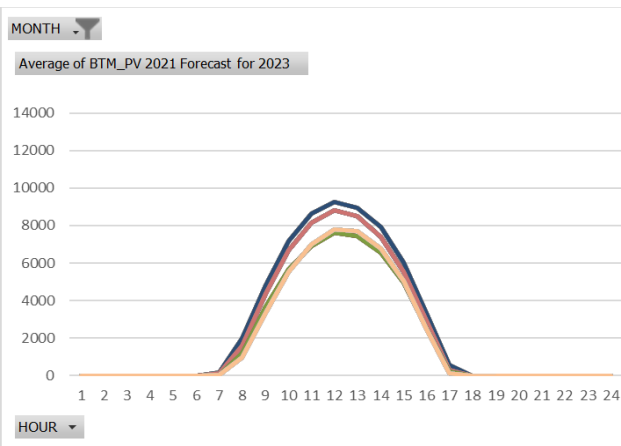
2022 CAISO Actuals



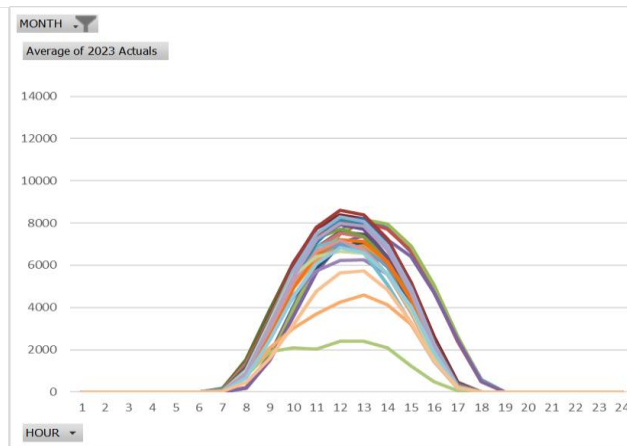
2024 CEC Forecast



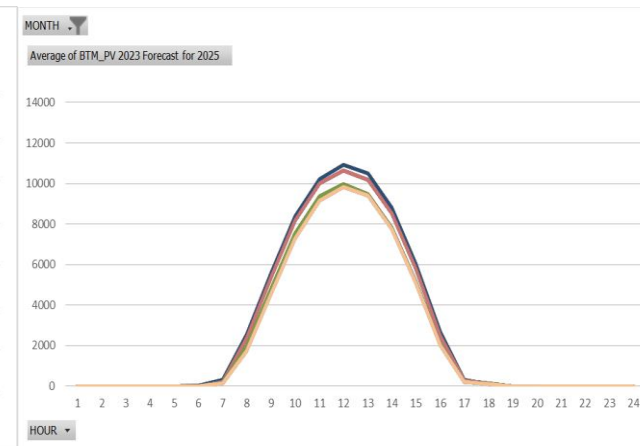
# Behind the meter solar plays a key role in hourly demand shapes: November Examples



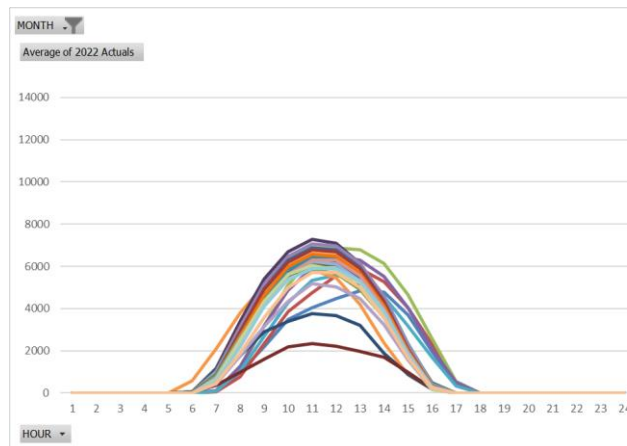
2023 CEC Forecast



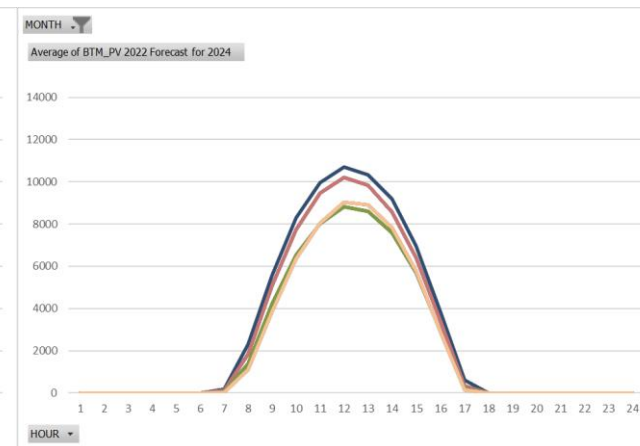
2023 CAISO Actuals



2025 CEC Forecast



2022 CAISO Actuals



2024 CEC Forecast

# Future Recommendations

Continued growth in Distributed Energy Resources (DERs) plays an important role in hourly demand profiles:

- True Up profile assumptions with actual data for EV, TOU, and battery profiles.
- Further refine BTM solar capacity and actual data utilized in demand forecasts
  - Consider impact of 1 MW of BTM solar to demand throughout the months
- Further visibility of DERs and Demand Response programs outside of CAISO market.
- Treatment of battery charging demand in demand forecasting
  - Market Participating and Non Market Participating

Early stakeholder engagement in CEC forecast development helps with subsequent review of CAISO Flex RA studies