



# **Item 8: Revised 2022 Summer Stack Analysis**

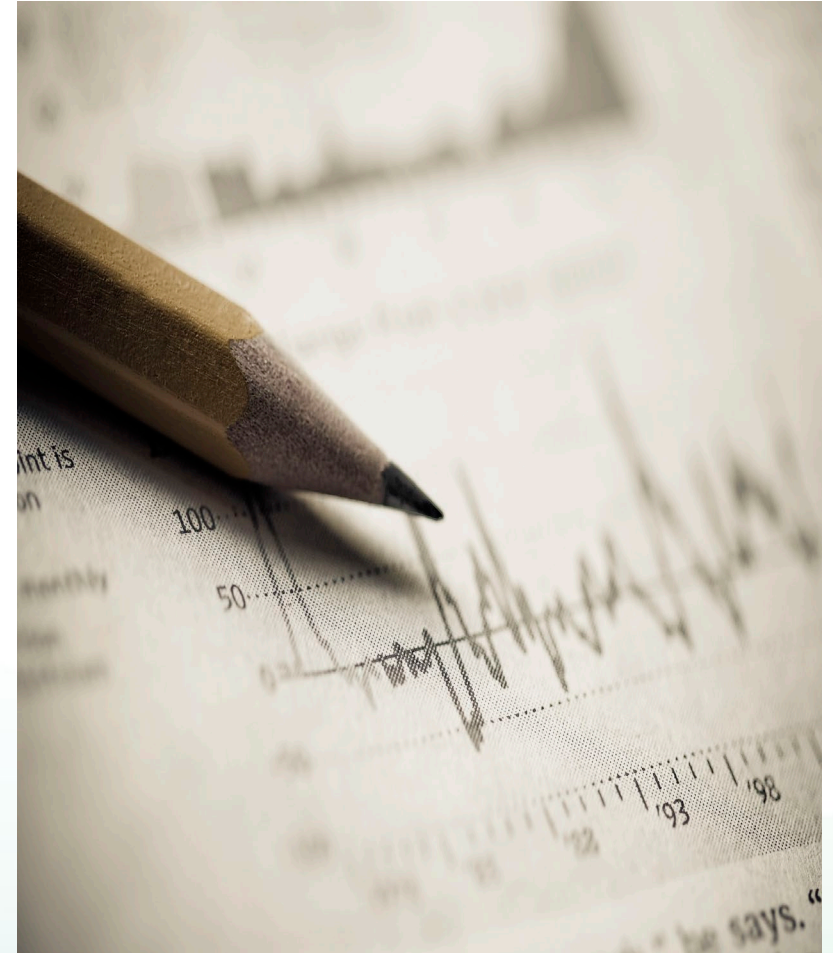
September 8, 2021 Business Meeting

Angela Tanghetti and Lana Wong  
Energy Assessments Division



# Benefits to California

Stack analysis provides situational awareness in the event of west-wide extreme weather and prolonged drought to help ensure electric system reliability





# Midterm Reliability Analysis vs Stack Analysis

## LOLE Analysis

**Purpose:** Inform procurement need

**Uses distributions of conditions**

- Demand profiles
- Wind and solar profiles
- Randomized outages

**Challenge:**

- Dependent on historic weather patterns which may not fully reflect climate change

## Stack Analysis

**Purpose:** Inform need for contingencies

**Provides potential of average and extreme:**

- High demand days like summer 2020
- Drought impacts on hydro
- Capped imports

**Challenge:**

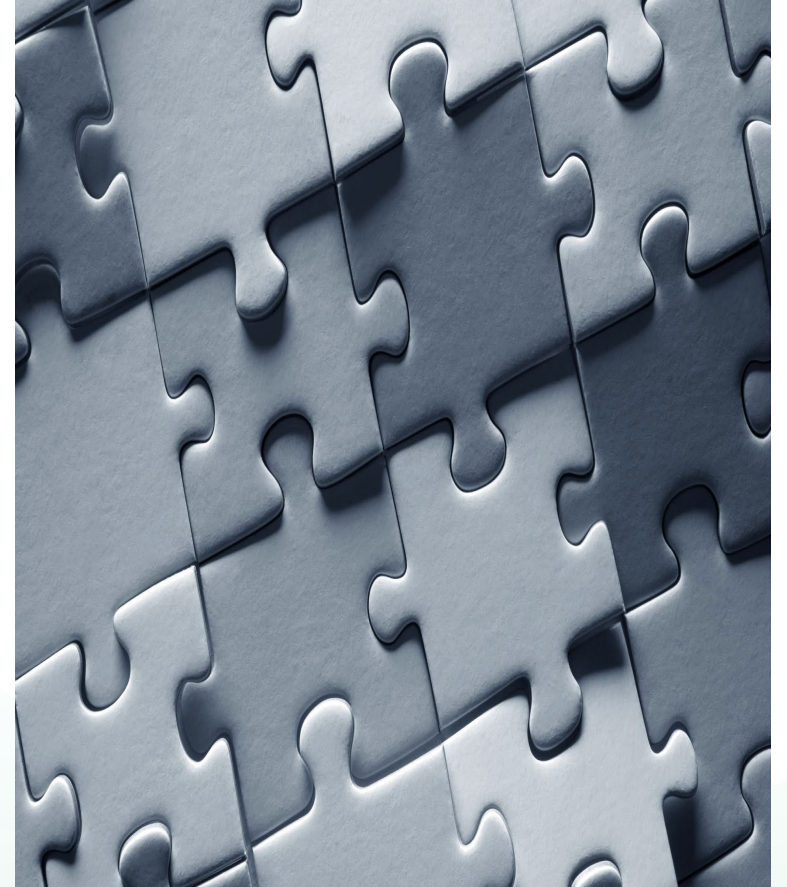
- Assumptions designed to capture extreme weather events



# Stakeholder Comments

## Why develop 2022 stack analysis and LOLE probability analysis?

- Provides situational awareness in the event of west-wide extreme weather and prolonged drought
- Provides a point of reference for consideration in other energy related proceedings
- Provides insight as to the amount and duration of need for contingency resource options





# Stakeholder Comments

## Assumptions are overly conservative

Hydro derate too high

- Considers specific drought year conditions

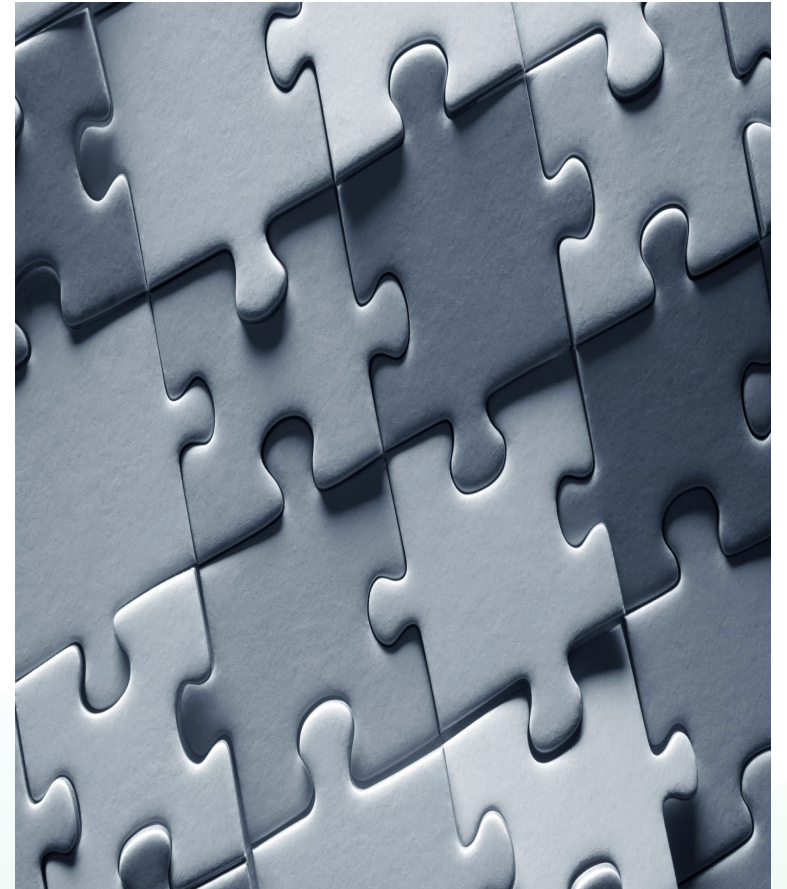
7.5% forced outages may be high

- Extreme weather, fire and smoke can adversely impact supply

No economic imports is too conservative

- Assumes west-wide extreme weather event

Requests for more specific data and assumptions





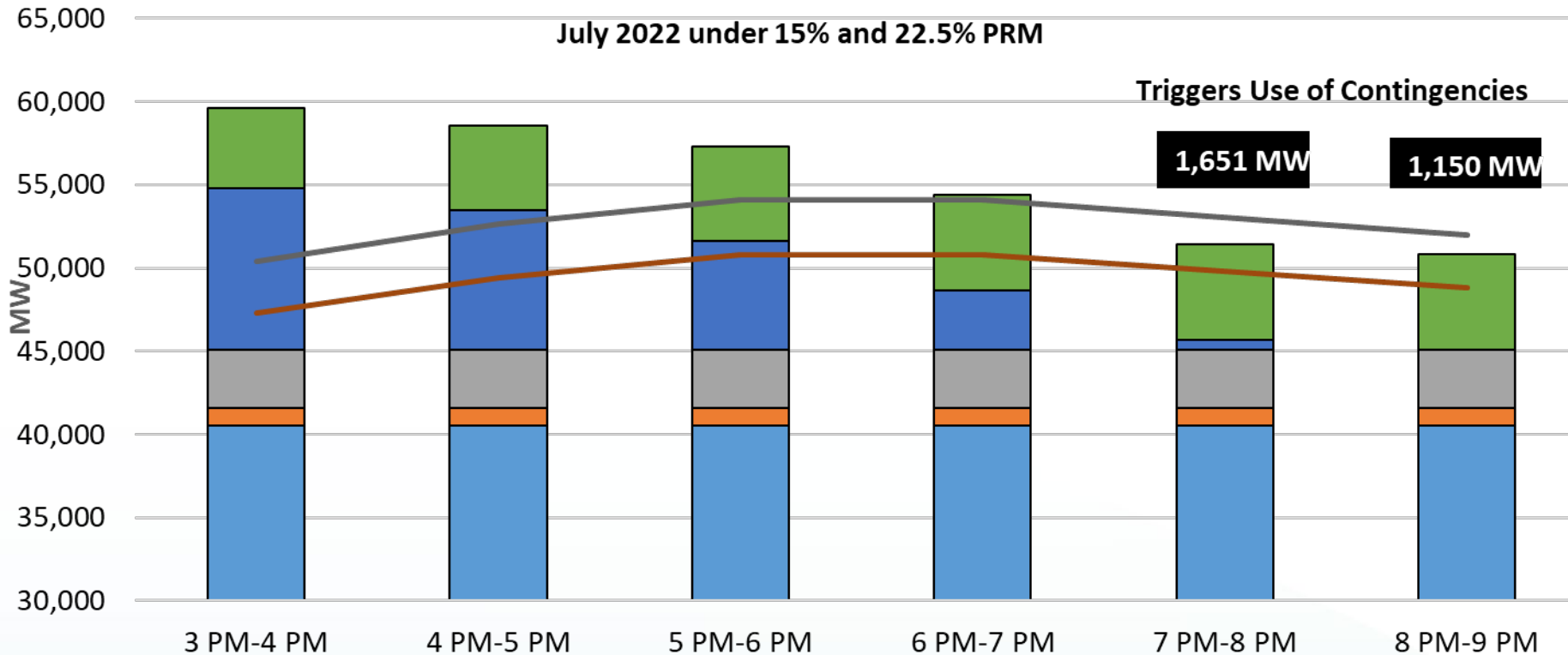
# Summer 2022 Stack Analysis Updates

- Incorporates additional CPUC Procurement and Retirements
  - + 878 MW (up from 556 MW) CPUC emergency procurement July 2022
  - + 1,270 MW (up from 840 MW) CPUC ordered procurement August 2022
  - + 363 MW (up from 0 MW) CPUC ordered procurement September 2022
  - 834 MW (unchanged from draft) Redondo Beach Retirement
- Incorporates additional Demand Response and Imports for Publicly Owned Utilities
  - + 478 MW July 2022
  - + 398 MW August 2022
  - + 385 MW September 2022



# July 2022

## Revised Stack Analysis compared to Draft



- Eliminated contingencies in the 6PM-7PM hour for the 22.5% PRM
- Reduced contingencies in all other hours by ~885 MW

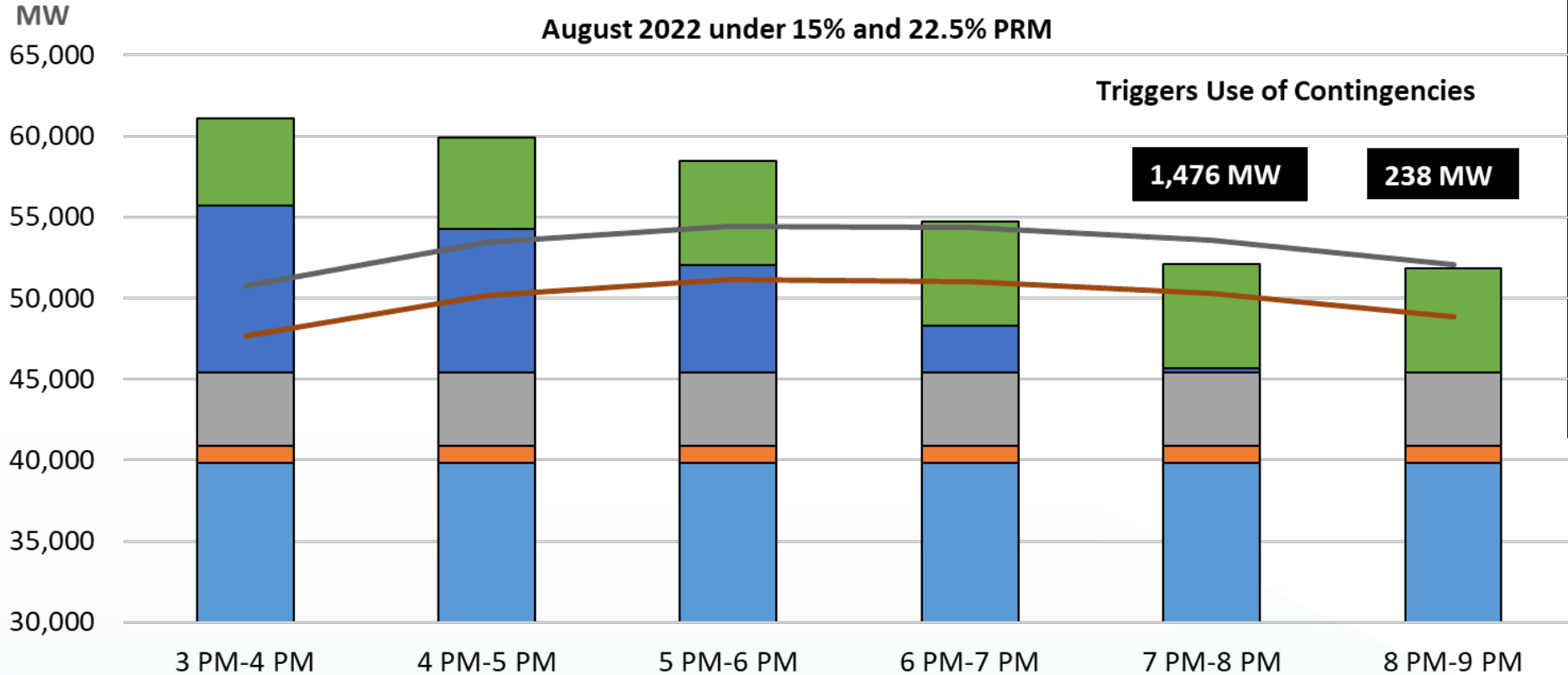
- Hour PDT
- Avg. Imports, RA Contracts
  - Solar (Plexos Shapes)
  - New Resources & CPUC Expedited Procurement (exc. Solar)
  - Existing DR
  - Drought Adj Existing Resources (exc. Solar, DR)
  - Drought Adj 1-in-2 peak demand + 15% PRM
  - Drought Adj. 1-in-2 peak demand + 22.5% PRM

Source: Hourly Stack Analysis Tool, California Energy Commission staff  
Lana Wong



# August 2022

August 2022 under 15% and 22.5% PRM



- Avg. Imports, RA Contracts
- Solar (Plexos Shapes)
- New Resources & CPUC Expedited Procurement (exc. Solar)
- Existing DR
- Drought Adj Existing Resources (exc. Solar, DR)
- Drought Adj. 1-in-2 peak demand + 15% PRM
- Drought Adj. 1-in-2 peak demand + 22.5% PRM

## Revised Stack Analysis compared to Draft

- Eliminated contingencies in the 6PM-7PM hour for the 22.5% PRM
- Reduced contingencies in all other hours by ~1,004 MW

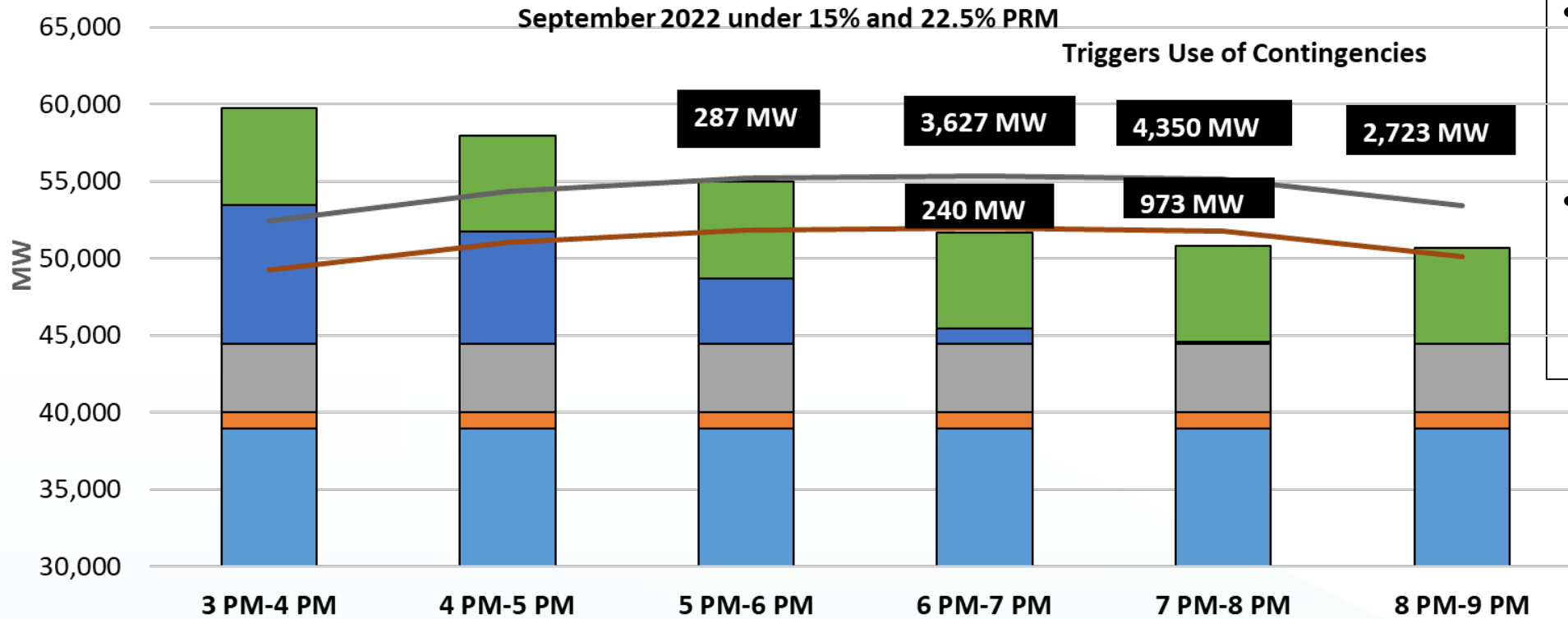
Source: Hourly Stack Analysis Tool, California Energy Commission staff  
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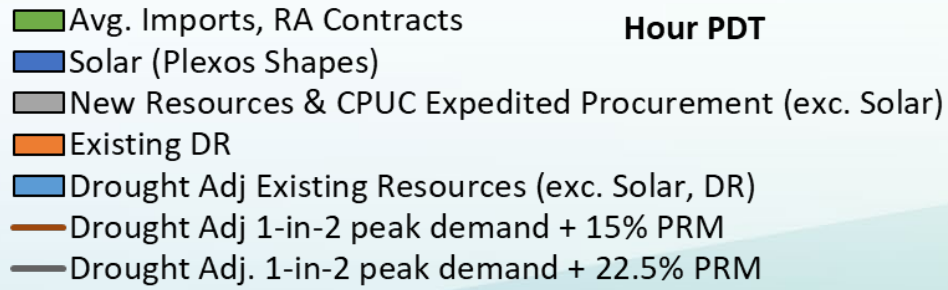


# September 2022

## Revised Stack Analysis compared to Draft



- Eliminated contingencies in the 8PM-9PM hour for the 15% PRM
- Reduced contingencies in all other hours by ~924 MW



Source: Hourly Stack Analysis Tool, California Energy Commission staff  
Lana Wong



# Recommendation

Adoption of Resolution 21-0908-8 for the 2022 Summer Stack Analysis

**Docketed presentations  
and revised white paper:  
Docket #: 21-ESR-01**

