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<th><strong>Docket Number:</strong></th>
<th>21-IEPR-04</th>
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<tr>
<td><strong>Project Title:</strong></td>
<td>Energy Reliability</td>
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<tr>
<td><strong>TN #:</strong></td>
<td>238737</td>
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<tr>
<td><strong>Document Title:</strong></td>
<td>Presentation - 2021 Summer Readiness – July Update</td>
</tr>
<tr>
<td><strong>Description:</strong></td>
<td>S1. 1A Angela Tanghetti, CEC</td>
</tr>
<tr>
<td><strong>Filer:</strong></td>
<td>Raquel Kravitz</td>
</tr>
<tr>
<td><strong>Organization:</strong></td>
<td>California Energy Commission</td>
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<tr>
<td><strong>Submitter Role:</strong></td>
<td>Commission Staff</td>
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<td><strong>Submission Date:</strong></td>
<td>7/7/2021 10:34:55 PM</td>
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<td><strong>Docketed Date:</strong></td>
<td>7/7/2021</td>
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Update Overview

- June 15-22 Heat Event Recap
- Changes to Demand and Supply Since May
- Preliminary Analysis of Fire Risk
June 15 – 22 Heat Event Recap

- Heat event called by CAISO
  - Included record temps in CA and heat dome over AZ/NV
  - CAISO issued first 2021 Flex Alert for June 17 & 18

- Conditions compounded by drought and loss of gas plant capacity of 2200 MW

- Agencies executed contingency plan
  - Daily coordination at principal and technical levels
  - Triggered additional planned contingency measures

- Avoided outages and the need for an RDRR event
Effective Public Response

Flex Alert and other conservation measures started 5pm
New Batteries Performed Well

Batteries delivered during critical hours
Hourly Stack Analysis

- CEC stack analysis scenarios provide awareness of the summer reliability outlook
  - Uses CAISO NQC list to represent each generator. Individual generator month-ahead RA showings are confidential
- Monthly individual generator RA showings provide the best information on committed supply
  - CAISO presented a stack analysis utilizing monthly RA showings to provide context for the CPM Significant Event solicitation

<table>
<thead>
<tr>
<th></th>
<th>CEC Stack Analysis</th>
<th>CAISO CPM Stack Analysis</th>
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<tbody>
<tr>
<td><strong>Purpose</strong></td>
<td>Develop scenarios to provide situational awareness of the summer reliability outlook</td>
<td>Provide context for the CPM Significant Event solicitation</td>
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<tr>
<td><strong>Supply Stack Source</strong></td>
<td>NQC List</td>
<td>Monthly RA Showings</td>
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</table>
Changes to Demand and Supply Since May

- **Demand**
  - Net decrease of over 200 MW from reduced pumping loads

- **Supply**
  - Decrease hydro capacity projections by ~ 1,000 MW
  - Updates to RA import from projections to actual showings
    - Increase of 137MW for July and decrease of 393 MW for August
  - Loss of other capacity
  - ~600 MW in plant outages in July
  - ~200 MW to ~500 MW procurement delays in August and September
Revised Outlook Under Average Weather Conditions – July 2021

July 2021 Average Weather Scenario Revised

- Drought Adj Existing Resources (exc. Solar, DR)
- New Resources & CPUC Expedited Procurement (exc. Solar)
- Solar (Plexos Shapes)
- Avg. Imports, RA Contracts
- Economic Imports
- Drought Adj 1-in-2 peak demand + 15% PRM
- Drought Adj 1-in-2 peak demand + 17.5% PRM
Revised Outlook Under Average Weather Conditions – Aug 2021

August 2021 Average Weather Scenario Revised

- Drought Adj Existing Resources (exc. Solar, DR)
- New Resources & CPUC Expedited Procurement (exc. Solar)
- Solar (Plexos Shapes)
- Avg. Imports, RA Contracts
- Economic Imports

- Drought Adj. 1-in-2 peak demand + 15% PRM
- Drought Adj. 1-in-2 peak demand + 17.5% PRM
**Outlook Under Extreme Weather Conditions – July 2021**

- Assumes extreme demand & conservative resource assumptions
- Does not include contingencies

![Graph showing extreme weather scenario revised](image)

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<tbody>
<tr>
<td>3 PM-4 PM</td>
<td>330 MW</td>
<td></td>
<td></td>
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<tr>
<td>4 PM-5 PM</td>
<td>2,650 MW</td>
<td></td>
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<tr>
<td>5 PM-6 PM</td>
<td>3,885 MW</td>
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<tr>
<td>6 PM-7 PM</td>
<td>3,210 MW</td>
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<tr>
<td>7 PM-8 PM</td>
<td>700 MW</td>
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<td>8 PM-9 PM</td>
<td></td>
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<td>9 PM-10 PM</td>
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Outlook Under Extreme Weather Conditions – Aug 2021

- Assumes extreme demand & conservative resource assumptions
- Does not include contingencies

August 2021 Extreme Weather Scenario May 4, 2021 Workshop

August 2021 Extreme Weather Scenario Revised

Triggers Use of Contingencies

- Existing Resources (exc. Solar, DR)
- New Resources & CPUC Expedited Procurement (exc. Solar)
- Solar (Plexos Shapes)
- Avg. Imports, RA Contracts
- Drought Adj 2020 Max. Day-Ahead Demand +13.5%

- Existing DR
- Drought Adj Existing Resources (exc. Solar, DR)
- New Resources & CPUC Expedited Procurement (exc. Solar)
- Solar (Plexos Shapes)
- Avg. Imports, RA Contracts
- Drought Adj 2020 Max. Day-Ahead Demand +13.5%
Outlook Under Extreme Weather Conditions – Sept 2021

- Assumes extreme demand & conservative resource assumptions
- Does not include contingencies

September 2021 Extreme Weather Scenario May 4, 2021 Workshop

Triggers Use of Contingencies

30 MW
2340 MW
1485 MW

September 2021 Extreme Weather Scenario Revised

Triggers Use of Contingencies

1,230 MW
3,500 MW
2,625 MW
535 MW

Legend:
- Existing Resources (exc. Solar, DR)
- Existing DR
- New Resources & CPUC Expediated Procurement (exc. Solar)
- Solar (Plexos Shapes)
- Avg. Imports, RA Contracts
- Drought Adj 2020 Max. Day-Ahead Demand +13.5%
<table>
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<tr>
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<tbody>
<tr>
<td>Voluntary Customer Conservation (Flex Alert)</td>
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<tr>
<td>Additional Generation and Load Reductions</td>
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<tr>
<td>Capacity Procurement Mechanism</td>
</tr>
<tr>
<td>Emergency Load Reduction Program</td>
</tr>
<tr>
<td>Imports from Other California Balancing Authorities &amp; Neighboring states</td>
</tr>
<tr>
<td>Increased Output from Thermal Fleet</td>
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</table>
Preliminary Analysis of Fire Risk

- CEC-jurisdictional fossil-gas, geothermal and solar-thermal power plant fleet has relatively low wildfire risk.
  - Majority (64) are in developed or open areas with low wildfire risk
  - 12 jurisdictional plants are in areas Tier 2 or 3 fire risk areas and have plans and systems to enhance resilient operation
    - 8 of the 12 are located in the Geysers Geothermal area.
    - 4 of the 12 are located in San Diego County

- Most of the 288 hydroelectric power plants are in high fire-threat areas

- Staff monitoring statewide fire conditions to evaluate risk and impact to electric supply during the current drought
Preliminary Analysis of Fire Risk

Hydroelectric Power Plants & Fire Threat Areas
California, 2021

Fire Threat
- Tier 2 (Elevated)
- Tier 3 (Extreme)
- Hydroelectric Power Plants

CEC Jurisdictional Power Plants & Fire Threat Areas
California, 2021

Jurisdictional Power Plants
- Geothermal
- Natural Gas
- Natural Gas/Petroleum
- Solar Thermal

Fire Threat
- Tier 2 (Elevated)
- Tier 3 (Extreme)

Sources: California Energy Commission and California Public Utilities Commission
Questions?