

Exhibit to Agenda Item #1

Provide the Board presentations by external and internal experts regarding **Resource Adequacy** and Summer 2022 readiness followed by a panel discussion on the topic.

Board Energy Resources & Customer Services Committee and Special SMUD Board of Directors Meeting

Wednesday, May 18, 2022, scheduled to begin at 5:30p.m.

Virtual Meeting (online)

Agenda

- Our Markets
- Summer 2021 Recap
- SMUD Summer 2022 Setup
- Market Outlook for remainder of year
- Questions

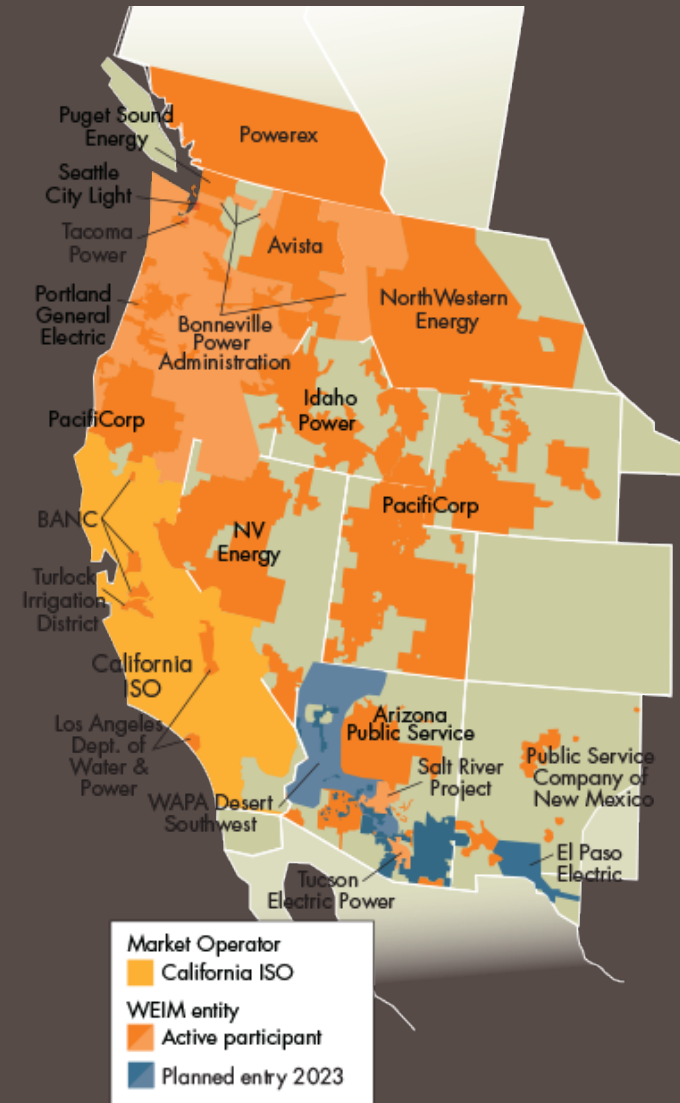
What is SMUD's Market Footprint?

Bi-Lateral Market — SMUD participates in energy markets in the Western Interconnect - from the Rocky Mountains west including parts of Canada and Mexico. Transactions from next hour to years' long complex Power Purchase Agreements (PPAs).

CAISO Energy Imbalance Market (EIM) -

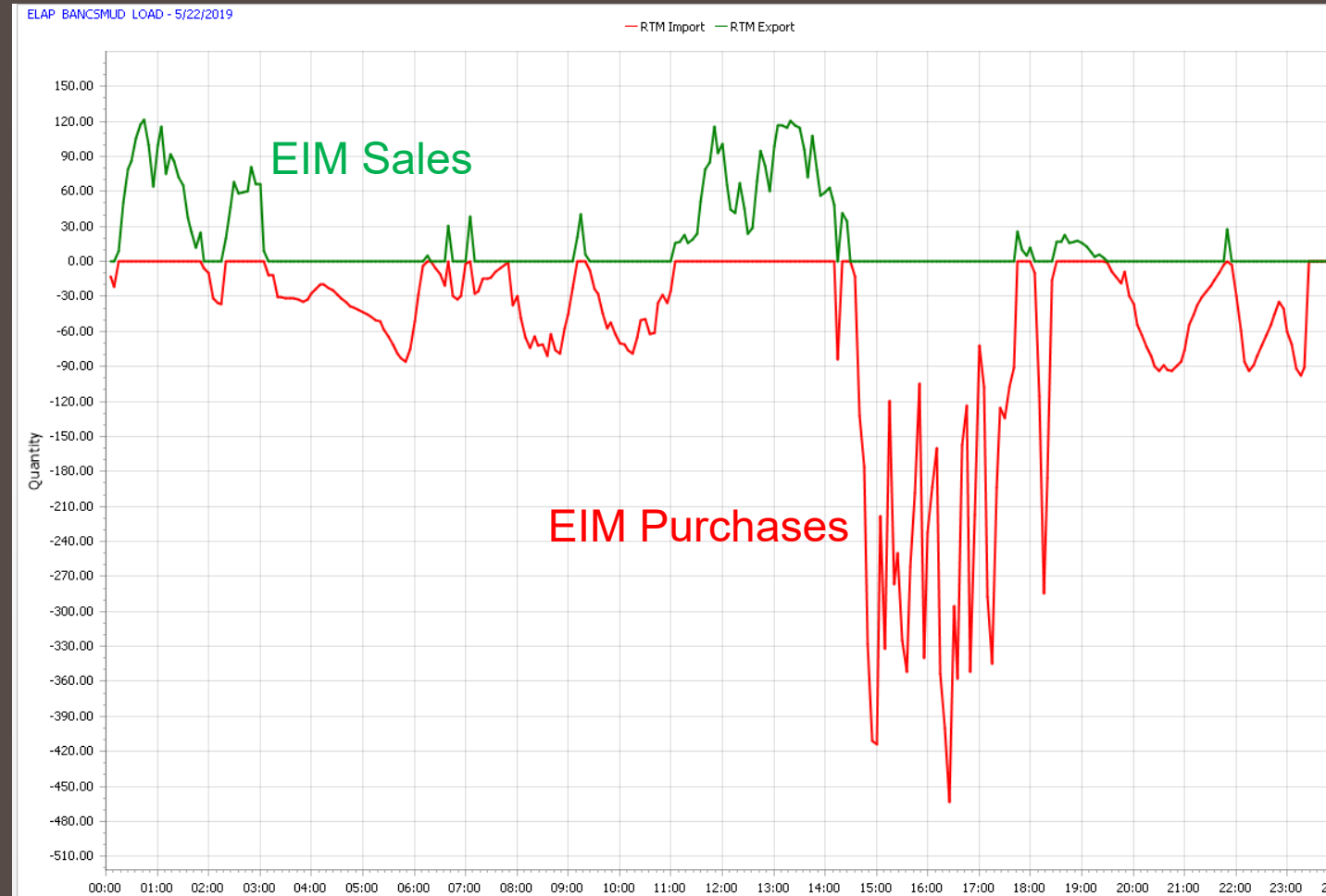
The EIM's advanced market system automatically finds low-cost energy to serve real-time consumer demand across the west. Since its launch in 2014, the EIM has enhanced grid reliability and generated cost savings for its participants. Besides its economic advantages, the EIM improves the integration of renewable energy, which leads to a cleaner, greener grid.

The EIM serves as SMUD's primary Realtime Energy Market. SMUD went live in April of 2019 with the remainder of Balancing Authority of Northern California (BANC) joining in April of 2021. Tucson Electric Power and Bonneville Power Administration joined the market on 5/3/22.



How does EIM dispatch?

Every 5 minutes Automatic Dispatch System (ADS) signals are delivered to resources and energy moves across Balancing Authorities (BAs)



2021 Summer Recap

- The events of August 2020 changed everything in the West. 2021 saw the implementation of new market rules by CAISO
- Peak SMUD load of 3,019 MWs at 5 pm on June 18th, 2021. The only June peak in the last 10 years
- Several events led to strained operating conditions
- Smoke likely impeded higher peaks in July and Aug as well as negatively affected solar generation

Summer 2021 Summer Events

Bootleg Fire – July 2021

- Impact to California – California Oregon Intertie (COI)
 - Reduced COI to less than 10% of capacity (approximately 4,000 mw cut to California)
 - Significant impact to multiple CA entities (CAISO, BANC, etc.)
- SMUD was curtailed 300 MWs of energy flowing from the Pacific Northwest

Dixie Fire – July 2021

- 2nd largest wildfire in CA history
- Minimal impact on SMUD Operations (impacts to peak load and solar generation due to smoke)

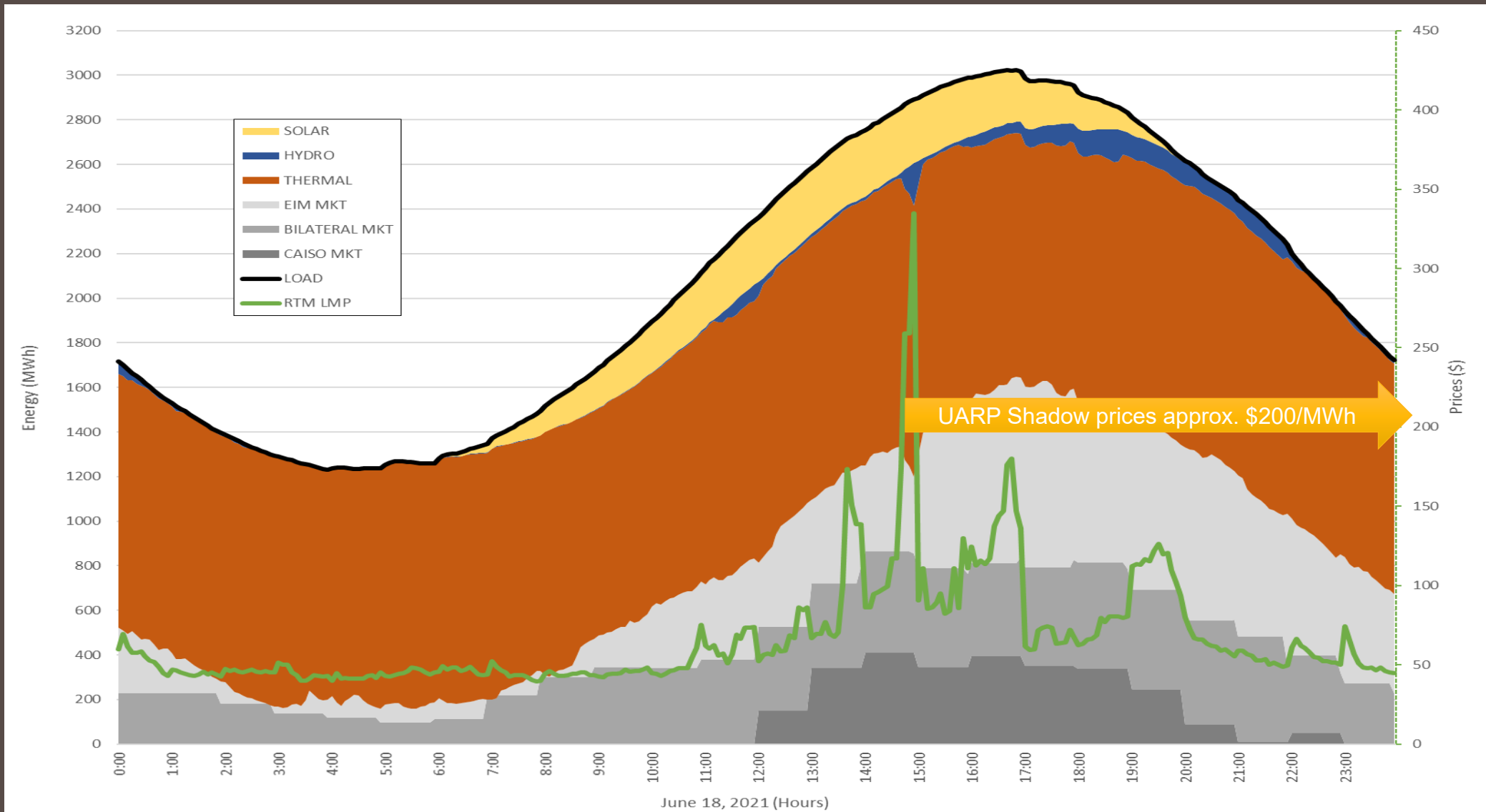
Caldor Fire – August 2021

- Activation of SMUD's Emergency Operations Center
- Evacuation of SMUD facilities and relocation of field personnel
- Came within a few miles of multiple SMUD assets (Union Valley Switchyard, Ice House, Jones Fork, etc.)

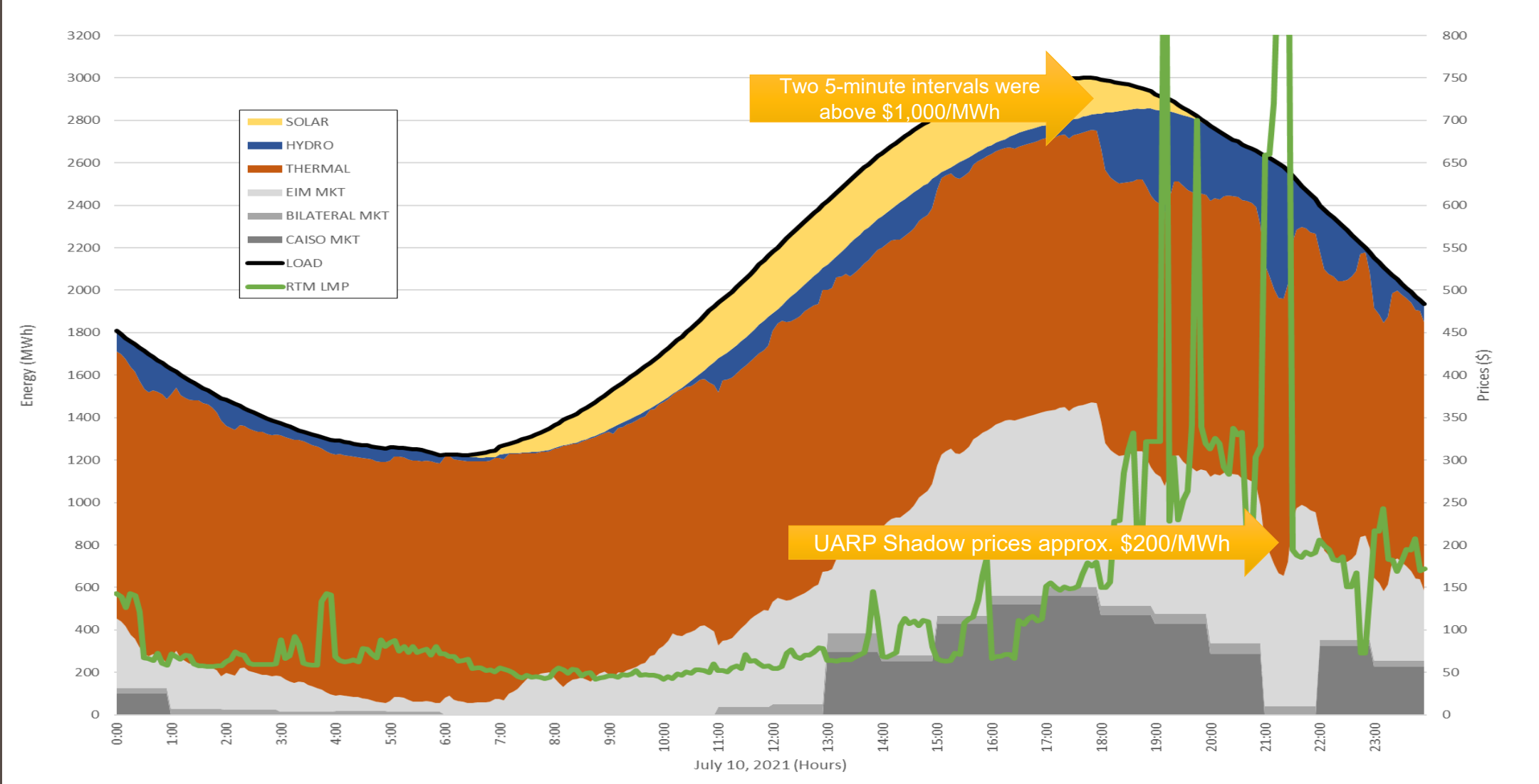
Potential For Similar Challenges in 2022

- Moderate to extreme drought conditions throughout state
- Limited precipitation (driest January-April on record) across much of N. California
- Fuel moisture levels lower than normal
- Potential interruptions to internal hydro resources (Upper American River Project) and external (COI) due fires

Serving SMUD Load on a peak day – June 2021



Serving SMUD Peak Load During COI transmission curtailment – Summer 2021



Changes in Resource Adequacy (RA) Plan from 2021 to 2022

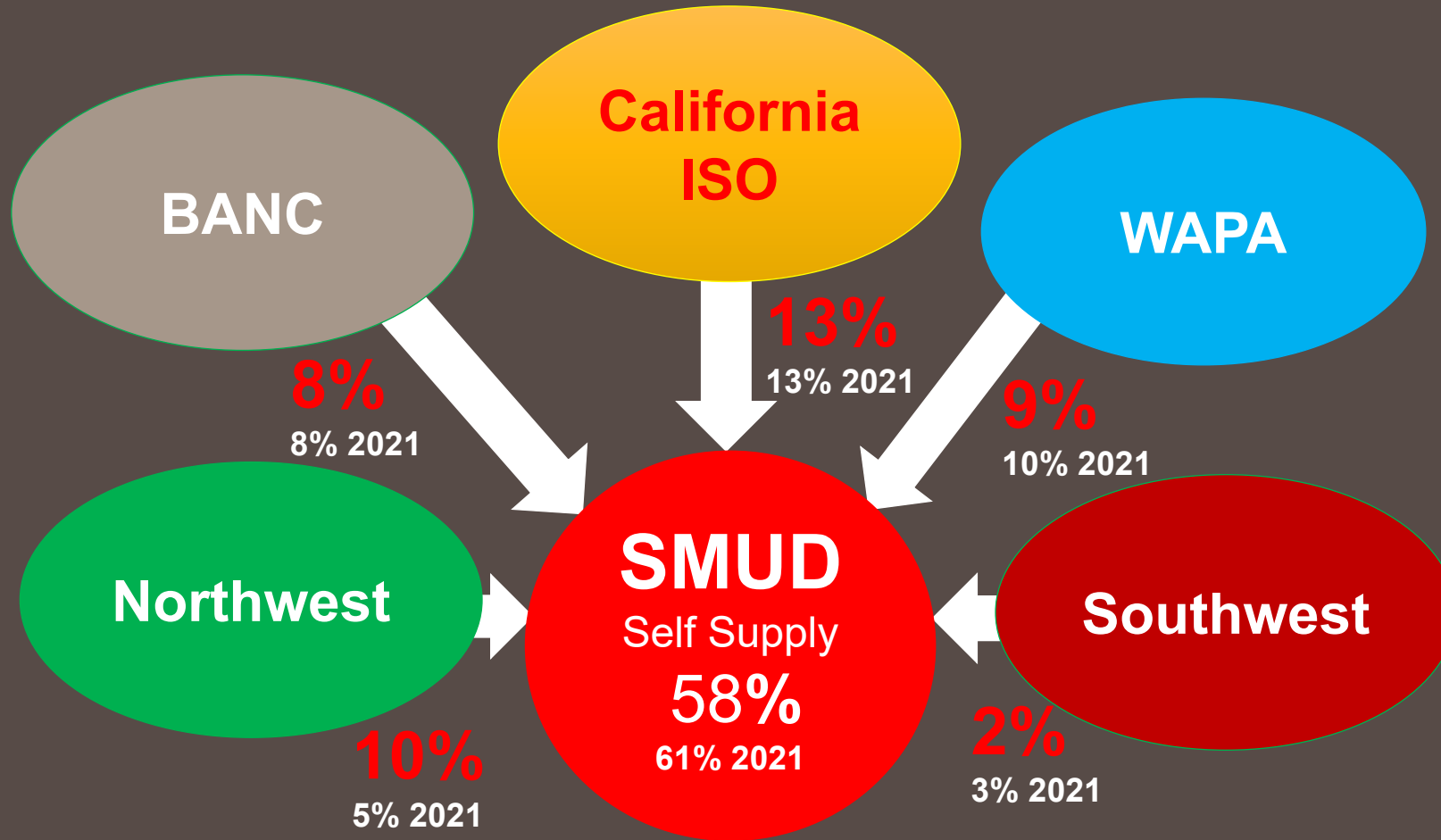
| | Jul-21 | % of Portfolio | Jul-22 | % of Portfolio | Change 2021-2022 |
|---------------------------------|--------------|----------------|--------------|----------------|------------------|
| Load | 2,870 | | 2,874 | | 4 |
| RA Obligation | 3,249 | | 3,255 | | 6 |
| Resource Locations | | | | | |
| SMUD/BANC | 2,256 | 69.4% | 2,150 | 66.1% | (106) |
| <i>SMUD Gen</i> | 1,998 | 61.5% | 1,892 | 58.1% | (106) |
| <i>Sutter</i> | 258 | 7.9% | 258 | 7.9% | 0 |
| CAISO | 440 | 13.5% | 417 | 12.8% | (23) |
| <i>Energy (RPS)</i> | 190 | 5.8% | 167 | 5.1% | (23) |
| <i>Non-RA</i> | 250 | 7.7% | 250 | 7.7% | 0 |
| Western Area Power Admin | 320 | 9.8% | 298 | 9.2% | (22) |
| Pacific Northwest | 154 | 4.7% | 337 | 10.4% | 183 |
| Desert Southwest | 92 | 2.8% | 59 | 1.8% | (33) |
| Total Resources | 3,262 | | 3,261 | | -1 |

Reductions*

Additions

* Changes predominantly due to Effective Load Carrying Contribution adjustments

Geographic diversity of 2022 RA Plan



Renewable Project Updates

Drew Solar Power Purchase Agreement – 100 MW

- Scheduled commercial operation date of Dec. 31, 2021 - delayed to December 2022
 - Due to force majeure claims surrounding supply chain constraints caused by changes in Federal regulatory requirements
- Partial commercial operations for markets in July 2022
 - This could allow SMUD to receive some benefits from up to 82 MW of the project prior to full Commercial Operational Date

Coyote Creek (formerly Sacramento Valley Energy Center) Solar and Storage Power Purchase Agreement – 200 MW / 100 MW

- Scheduled commercial operation date of Dec. 31, 2023 - delayed to June 2024
 - Due to permitting delays and supply chain constraints caused by recent changes in Federal regulatory requirements

Sloughhouse Solar Power Purchase Agreement – 50 MW

- Scheduled commercial operation date of Dec. 31, 2023 - delayed to June 2024
 - Due to permitting delays and supply chain constraints caused by recent changes in Federal regulatory requirements

Renewable Project Updates

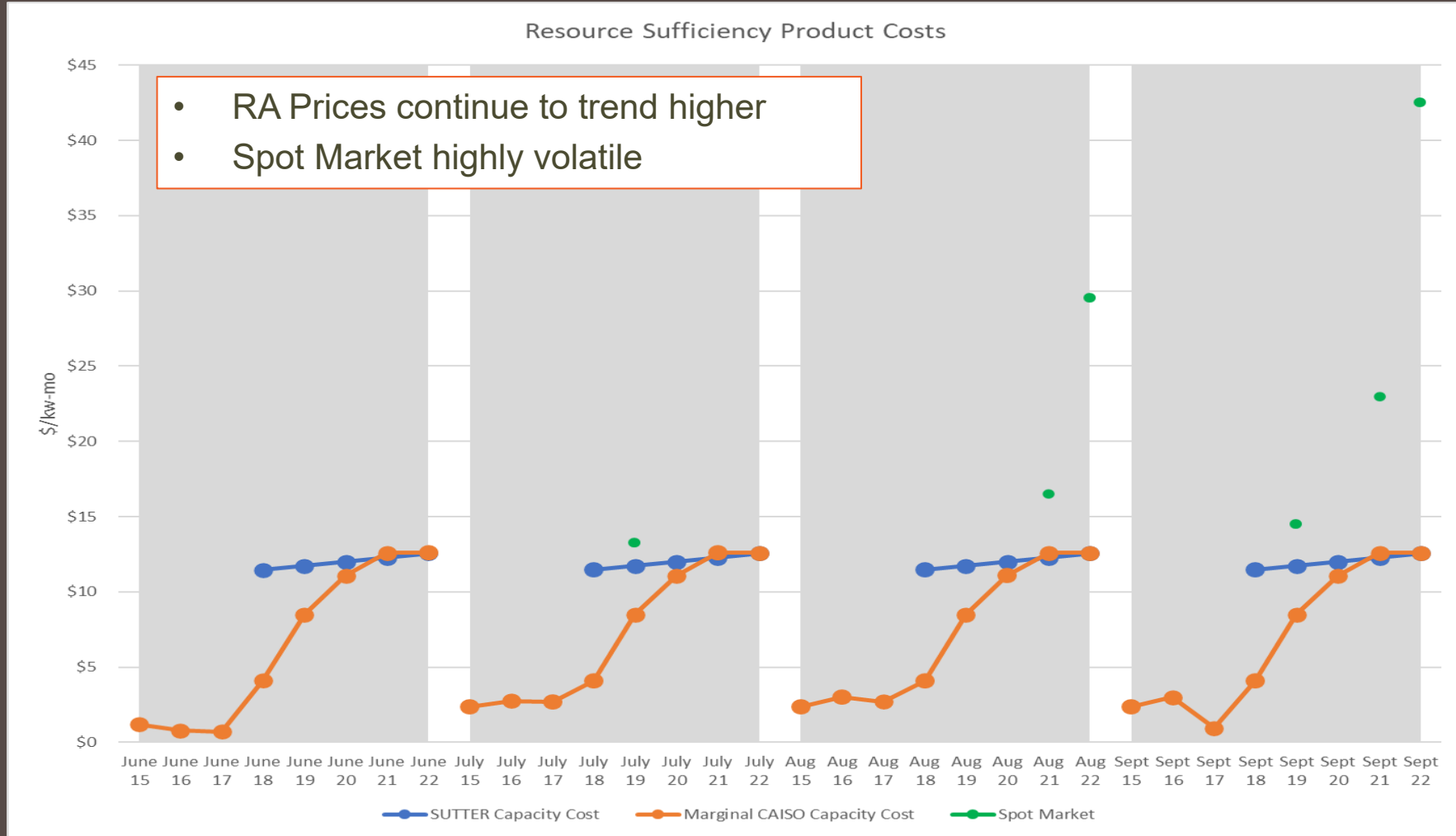
Elverta Area Solar and Storage Request For Offers

- Request for Qualifications issued 10/2021
- Request for Offers issued 12/2021 to 13 shortlisted bidders from Request for Qualifications
- Offers came in from 5 companies in 2/2022 with initial evaluation completed and best and final offers due from 3 shortlisted companies in 5/2022
- Notify winning bids with Letter of Intent by 6/2022
- Complete PPA negotiations by 11/2022
- Request Board approval for California Environmental Quality Act and Purchase Power Agreement/Large Generator Interconnection Agreement in 12/2022

Market Outlook Summer 2022

- BANC/SMUD Summer Readiness – Cautiously optimistic
- RA Market pricing continues to be at historic highs
 - September 2022 RA broker quote @ \$42.50 KW/month
- Market uncertainty is reflected in elevated energy prices
 - Northwest Heavy Load for July 2022 traded @ \$134.00 (July 2021 @ \$129.00)
 - Northwest Heavy Load for August 2022 traded @ \$217.00 (Aug 2021 @ \$172.50)
 - Prices in Desert Southwest, as well as internal CAISO pricing hubs, are also at significantly higher prices as compared to 2021 prices
 - Natural Gas prices are higher for 2022 and increasing the pressure on power prices (July 2021 \$5.08, July 2022 \$8.62)
- Required Actions
 - 100MW RA need for July & August 2022, fully supplied for all other months

RA Prices



Market Outlook Summer 2022 - continued

There are three important regions to consider for hydrological conditions:

- Upper American River Project (UARP) – SMUD-owned hydro generation
- Western Area Power Administration (WAPA) Central Valley Project (CVP) – hydro generation contracted with WAPA from across California
- Pacific Northwest (PNW) - hydro generation in Oregon, Washington and British Columbia

| Area (as of 5/10/2022) | Precipitation as snowpack (% of normal) | Precipitation as rain (% of normal) |
|---------------------------|--|--|
| UARP | 38 | 92 |
| CVP | 44 | 86 |
| PNW | 110 | 100 |

California long-term hydro deficits continue in 2022 resulting in constrained operations through the summer

Additional Pressure on Supply/Demand

| | Pressure on Prices |
|---|--------------------|
| Thermal Plant Retirements | ↑ |
| Higher CPUC RA requirements | ↑ |
| Revised Effective Load Carrying Capabilities (ELCC) and Net Qualifying Capacity (NQC) | ↑ |
| Market rule changes | ↑ |
| Northwest RA program | ↓ |
| Community Choice Aggregator Maturity | ↓ |
| Battery build out | ↓ |
| State Initiatives | ↓ ? |



Questions

