



Pasadena Water and Power

Calpine Geysers Geothermal Project

City Council Presentation

May 8, 2023

Item 17





Original Terms

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- On January 23, 2023, PWP received City Council approval to execute a ten-year PSA with SCPPA
- Original Offer - \$79.50/MWh, 10 Years
 - > 2025-2026 – 10 MW
 - > 2027-2034 – 35 MW
 - > Start of Service – January 1, 2025
 - > Increase in Share – January 1, 2027
 - > End of Service – December 31, 2034
- Furthered Pasadena's Carbon-Free Goal



Revised Offer

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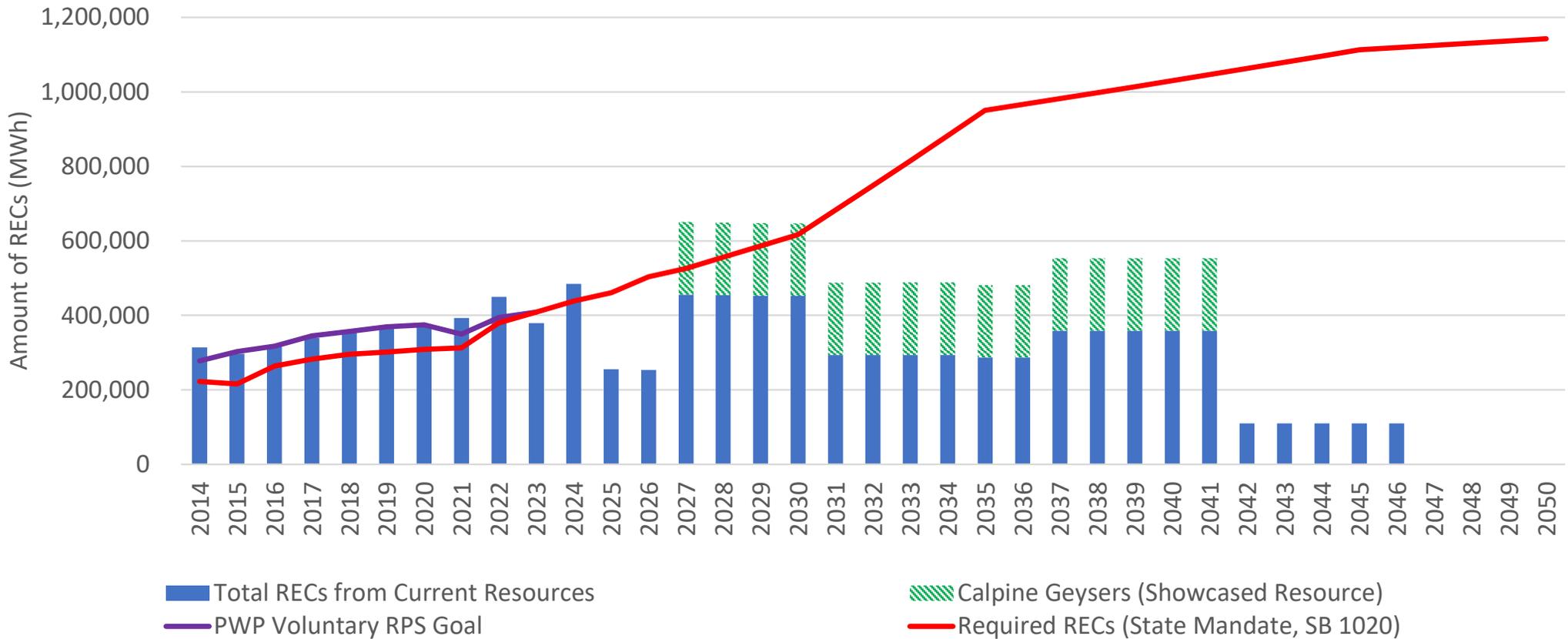
- After receiving City Council approval, Calpine Geysers Project notified SCPPA of revised terms
 - > Due to a substantial increase in market prices and demand for renewable energy
- Based upon the responses to SCPPA's Request for Proposals, there are not many geothermal resource options in the market today
 - > Provides baseload renewable energy
 - > Provides resource adequacy needed for grid reliability required by CAISO



Renewable Portfolio Standard (RPS) Position Graph

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RPS Position Showcasing Calpine Geysers





New Offer Terms

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- SCPPA Fixed Price Renewable PPA Term
 - > Term: 15 years (January 1, 2027 to December 31, 2041)
 - \$18.7 million annual estimated cost
 - \$278 million estimated cost over 15-year term
 - Total not-to-exceed contract value of \$312,075,000 over the 15-year term
 - > Contract Energy Quantity: 25 MW
 - > All-In Energy Price: \$95/MWh
 - > Resource Adequacy: 22.25 MW
 - > PCC1 RECs
 - > Delivery Point: NP-15



Opportunities from New Offer

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- Increase in the number of years in the contract to assist future needs
 - > Previously was 10 years
 - > New Offer is for 15 years
- Leveling out of amount in MW offered
 - > Previous offering was 10 MW for 2 years and then increased to 35 MW for 8 years
 - > New offering starts at 25 MW and stays at that level for the entire 15-year term



Geysers Financial Analysis

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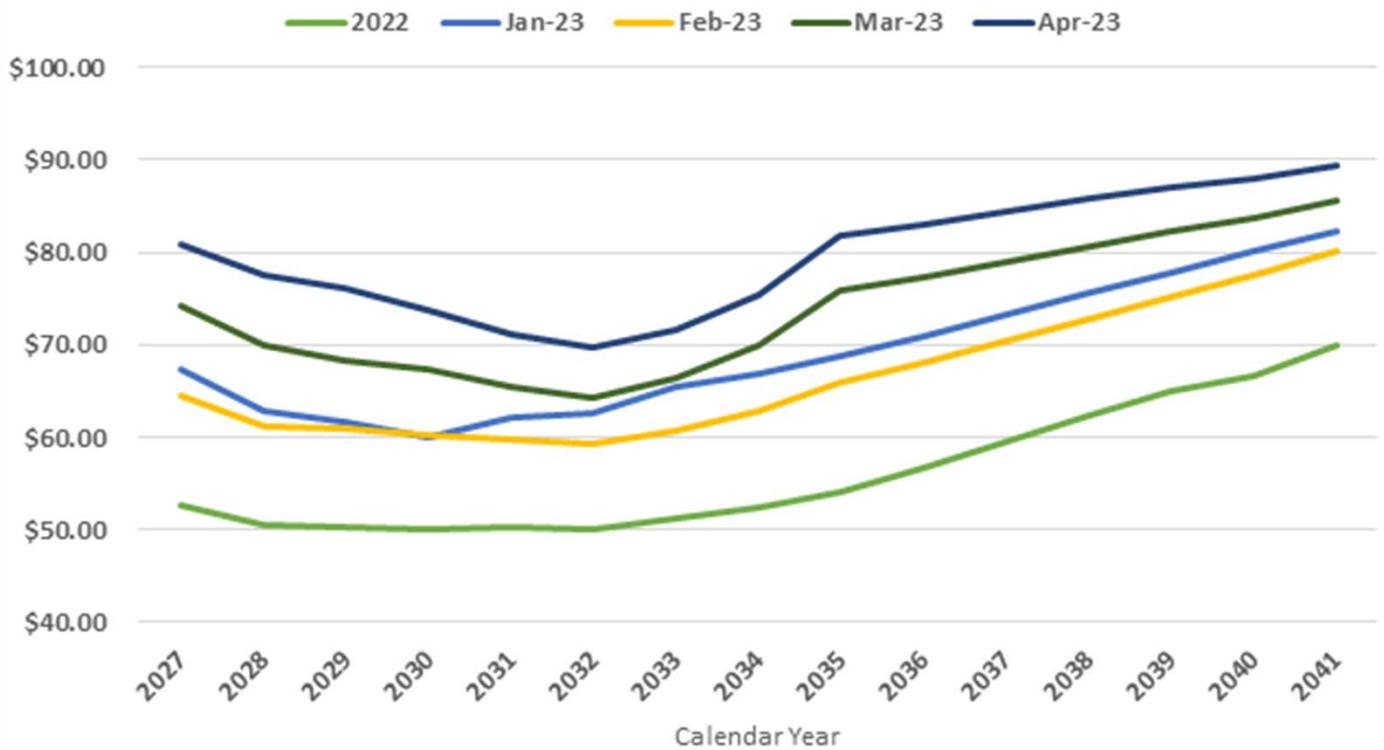
- Consultant's analysis indicates Geysers Project is in line with current market values for Resource Adequacy, Renewable Energy Credits (RECs), and baseload energy
- Geysers contract price is approximately \$5/MWh less than the current market price of \$100.28/MWh
 - > The avoided rate impact would be 0.5 cents/kWh as compared to equivalent market prices
- In FY 2024 PWP will initiate a full cost of service and rate study that includes examining the resource portfolio after 2027 (exit of IPP)
 - > Design a rate structure to address cost recovery
- Project Risk is mitigated since Geysers is an existing facility in operation (already built and running)



Forward Price Trends for Power

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Forward Prices from 2027-2041 at CAISO NP15 node



- Data received from a reputable third party provider
- Prices trend upwards for all generation technology types (renewable and non-renewable)
- NP15 is Geysers delivery node



Historical Power Prices

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- Data based on clearing prices for CAISO markets
- SP15 is indicative for prices close to TM Goodrich (Pasadena's Delivery Node)

Historical Clearing Price at CAISO SP15 Node

