



Mammoth Casa Diablo IV Geothermal Power Plant Developer – Ormat Nevada, Inc.

Project Summary, Features, Structure &
Elements



Project Details

- § Name Plate Capacity is 25 MW
 - § PPA with SCPPA will be for 20 MW
 - § CED's share will be 15 MW
 - § Banning's share will be 5 MW
- § 25 Year Term
- § COD 7/1/2021, could be as early as 4/1/2020
- § Fixed \$68.00 MWh (\$0.068 kwh)
- § Energy terms are Take or Pay (Colton will pay if plant is generating)
- § Total estimated annual cost \$8.95M (1/3 of annual energy requirements)
- § Baseload Renewable Resource
 - § Estimated Annual MWh 131,400
- § Counts as PCC1

RECOMMENDATION

- The Electric Division recommends that the Colton City Council approve Resolution R-111-18 authorizing the City's participation in the Southern California Public Power Authority's Power Purchase Agreement with ORNI 50, LLC Casa Diablo 4 (CD4) Energy Project, a geothermal facility near Mammoth, California, and authorize the Colton City Manager to execute the Power Sales Agreements in substantially the form provided.

CA RPS REQUIREMENTS

- In September 2018, the California legislature passed AB 100. This legislation increases Renewable Portfolio Standards (RPS) requirements to 60% of sales by 2030 and encourages the use of zero-emission resources to meet 100% of retail electric sales.
- The Colton Electric Department (CED) currently meets 29% of its retail load requirements with renewable energy and is on schedule to meet 33% by 2020, the current goal established by SBX1 2.

PRICE COMPARISON TO EXISTING RESOURCES

- Non-Renewable Resources

• Magnolia	Gas	Baseload	10 MW	\$0.065 per kwh
• Palo Verde	Nuclear	Baseload	3 MW	\$0.042 per kwh
• Hoover	Lg Hydro		2.8 MW	\$0.029 per kwh

- Renewable Resources

• Astoria II	Solar PV	Intermittent	7 MW	\$0.064 per kwh
• Kingbird B	Solar PV	Intermittent	3 MW	\$0.069 per kwh
• Colton Solar 1	Solar PV	Intermittent	~3 MW	\$0.0887 per kwh
• Colton Solar 2	Solar PV	Intermittent	~1 MW	\$0.0887 per kwh
• Gonzales Ctr	Solar PV	Intermittent	~.3 MW	\$0.115 per kwh
• Arbor Terrace	Solar PV	Intermittent	.25 MW	\$0.115 per kwh
• High Winds	Wind	Intermittent	3 MW	\$0.053 per kwh
• MWD	Sm Hydro	Intermittent	3.72 MW	\$.055 per kwh

CED's Requirements

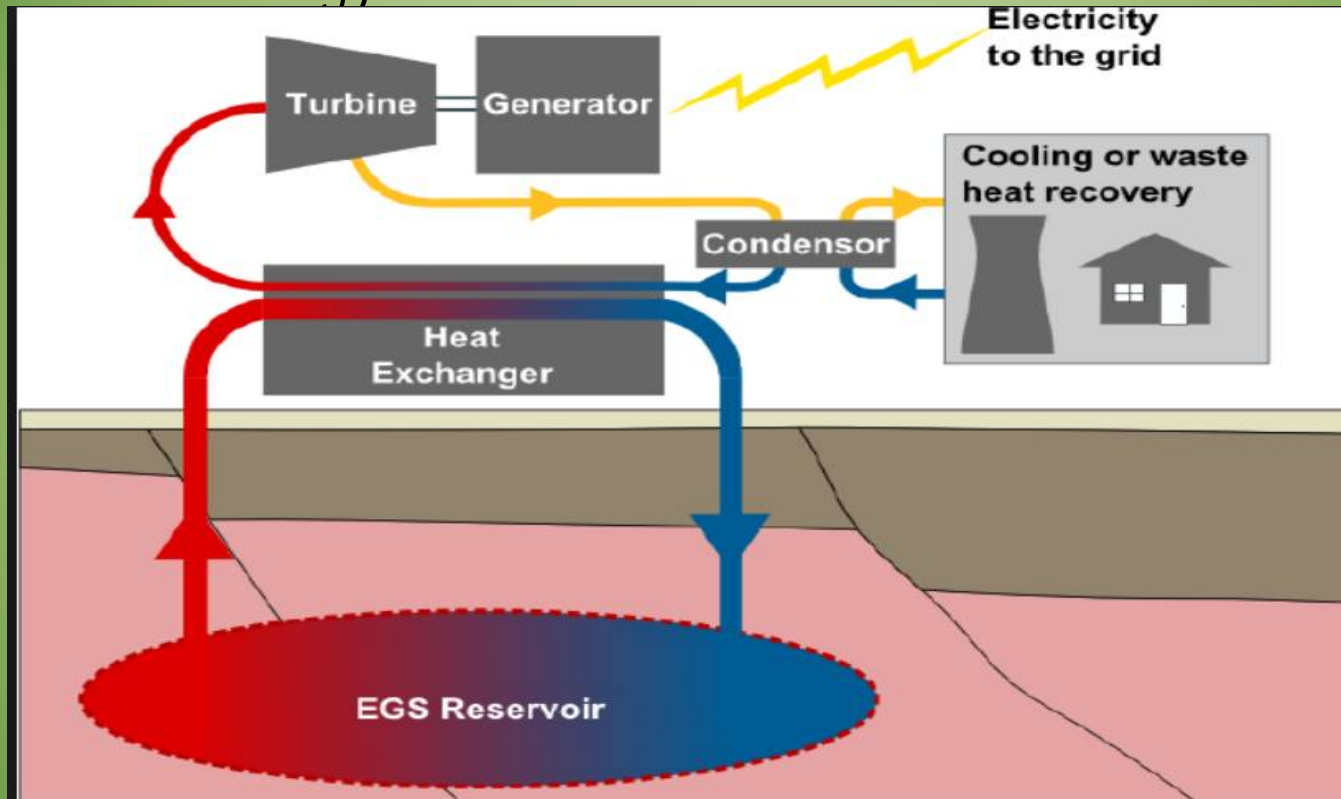
- CEDs 2017 IRP identified a need for 25 to 30 MW of baseload energy.
- With the closure of SJ3 at the end of 2017, CED currently has 18 to 20 MW of baseload energy
 - ~7 MW from Puente Hills Landfill and expires end of 2030, however, facility is experiencing higher rate of degradation than anticipated.
- Additionally CED has 5 MW of renewable energy contracts that will expire in 2023-2025 time period
- Degradation of Puente Hills Landfill, expiration of renewable agreements in 2023-2025, and forecasted growth result in need of 10-15 MW renewable baseload resource

PPA Negotiations

- Negotiations began in January 2018
- Price was originally \$76.50 MW
- PPA will be between SCPPA and Ormat
- Colton and Banning will each execute PSA with SCPPA
- Expected to be approved by SCPPA Board September 20, 2018

GEOHERMAL GENERATION

- Geothermal generation uses heat from underground vents to generate energy



The CEC reports that there are 43 operating geothermal plants in California with an installed capacity of 2,694 MW. The plants are concentrated in Lake and Sonoma Counties at the Geysers Geothermal Resource Area, Salton Sea area and Mammoth area.

A SCPPA Geothermal Plant in Nevada, east of Mammoth

Don A. Campbell Complex

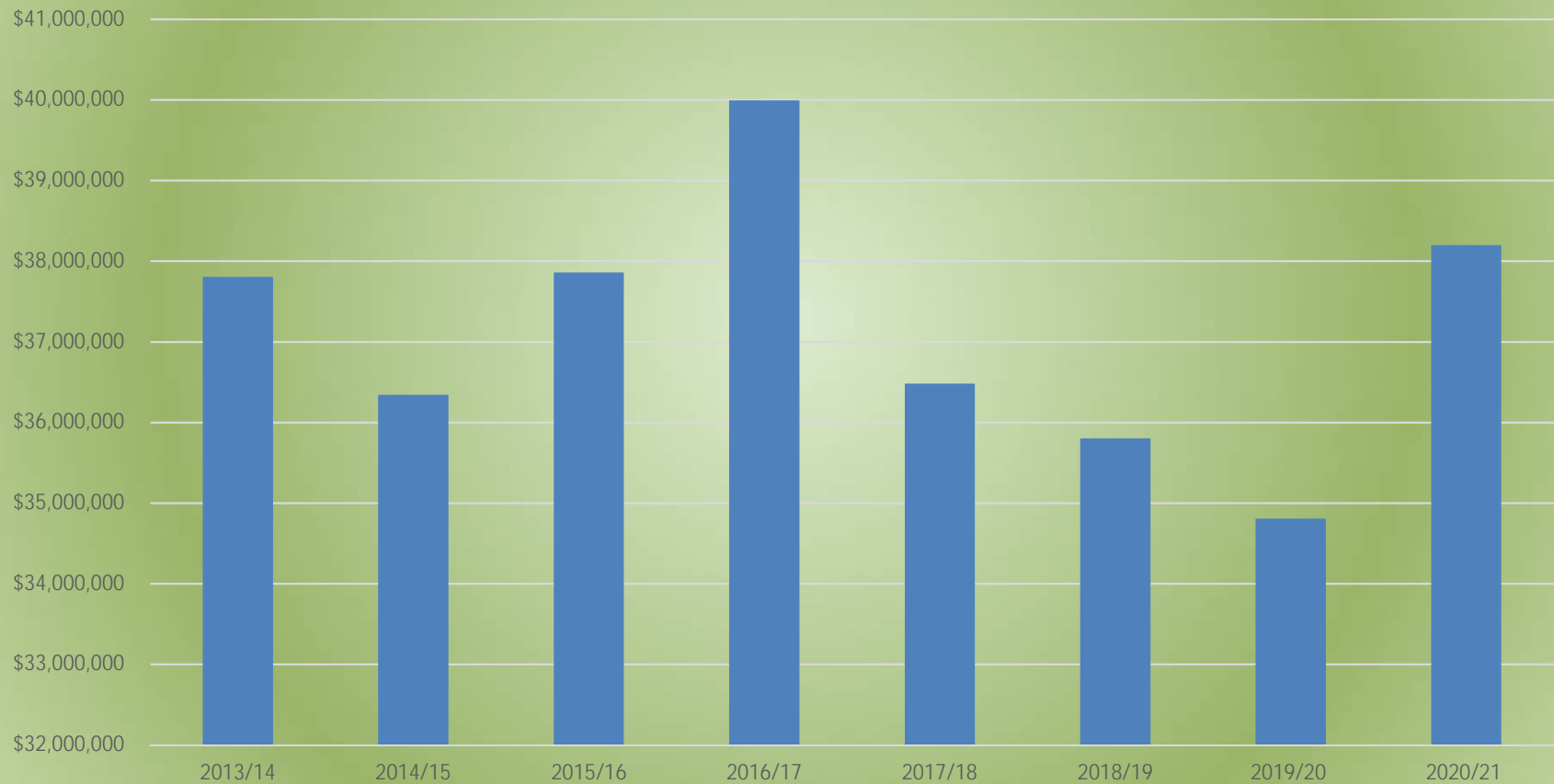
USA

>



Impact on Power Supply Costs

Annual Power Supply Costs



Impact on Power Supply Costs

Annual Power Supply Costs

