

# City Council Memorandum

*City of Arts & Innovation*

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**TO: HONORABLE MAYOR AND CITY COUNCIL      DATE: JANUARY 5, 2021**

**FROM: PUBLIC UTILITIES DEPARTMENT      WARDS: ALL**

**SUBJECT: POWER SALES AGREEMENT WITH SOUTHERN CALIFORNIA PUBLIC POWER AUTHORITY FOR THE COSO GEOTHERMAL ENERGY PROJECT FOR A TERM OF TWENTY YEARS FOR AN ESTIMATED AVERAGE ANNUAL COST OF \$6,000,000 FOR CONTRACT YEARS ONE THROUGH FIVE AND \$18,000,000 FOR CONTRACT YEARS SIX THROUGH TWENTY**

**ISSUE:**

Recommend that the City Council approve the Power Sales Agreement with Southern California Public Power Authority for the Coso Geothermal Energy Project for a term of twenty years for an estimated average annual cost of \$6,000,000 for contract years one through five and \$18,000,000 for contract years six through twenty.

**RECOMMENDATIONS:**

That that the City Council:

1. Approve the Power Sales Agreement with Southern California Public Power Authority for the Coso Geothermal Energy Project for a term of twenty years for an estimated average annual cost of \$6,000,000 for contract years one through five and \$18,000,000 for contract years six through twenty; and
2. Authorize the City Manager, or designee, to execute the Power Sales Agreement and all documents necessary to administer the Agreement including the ability to make non substantive changes, as well as to execute future amendments to the Power Sales Agreement under terms and conditions substantially similar or superior to the Power Sales Agreement or, if needed, to terminate the Power Sales Agreement in accordance with Agreement terms and conditions.

**COMMITTEE RECOMMENDATION:**

On December 14, 2020, the Land Use/Sustainability/Resilience Committee met with Chair Plascencia, Vice-Chair Edwards and Member Perry present to consider the Power Sales Agreement with Southern California Public Power Authority for Coso Geothermal Energy Project. Following discussion, the Committee voted unanimously to recommend that the City Council (1) approve the Power Sales Agreement with Southern California Public Power Authority

for the Coso Geothermal Energy Project for a term of twenty years for an estimated average annual cost of \$6,000,000 for contract years six through twenty; and (2) authorize the City Manager, or designee, to execute the Power Sales Agreement and all documents necessary to administer the Agreement including the ability to make non substantive changes, as well as to execute future amendments to the Power Sales Agreement under terms and conditions substantially similar or superior to the Power Sales Agreement or, if needed, to terminate the Power Sales Agreement in accordance with the Agreement terms and conditions.

### **BOARD RECOMMENDATION:**

On November 9, 2020, the Board of Public Utilities voted unanimously, with all members present, to recommend that the City Council Approve the Power Sales Agreement with Southern California Public Power Authority for the Coso Geothermal Energy Project for a term of twenty years for an estimated average annual cost of \$6,000,000 for contract years one through five and \$18,000,000 for contract years six through twenty.

### **LEGISLATIVE HISTORY:**

In 2011, the California Renewable Energy Resources Act, Senate Bill (SB) X 1-2, was signed into law by the Governor, which mandated that all electric utilities, including Riverside Public Utilities (RPU), procure increasing amounts of renewable energy primarily from in-state resources to serve its retail needs during specific compliance periods. SB X 1-2, which officially created the first set of tiered Renewable Portfolio Standard (RPS) targets, requires RPU to supply 20%, 25% and 33% of retail energy needs using renewable resources by 2010, 2015 and 2020, respectively.

In 2015, the Governor signed into law the Clean Energy and Pollution Reduction Act, SB 350, which further increased the RPS goal to 50% by 2030. This was followed in 2016 with the Governor's approval of SB 32, which required the state board to ensure that statewide greenhouse gas emissions are reduced to 40% below the 1990 level by 2030.

The Governor signed SB 100 into law in 2018, maintaining the target of 33% RPS by 2020, but increasing the 2030 compliance target to 60% and establishing interim compliance targets of 44% by 2024 and 52% by 2027. SB 100 is also known as "The 100 Percent Clean Energy Act of 2018" because it created the policy of meeting all of the State's retail electricity supply with a mix of RPS-eligible and zero-carbon resources by December 31, 2045.

### **BACKGROUND:**

The City of Riverside has been very supportive of the existing renewable targets set by the State and is committed to serving its retail energy requirement using increasing amounts of renewable energy. In order to satisfy the current RPS targets, while anticipating more stringent RPS requirements in the future, RPU continues to explore additional cost-effective, renewable energy procurement opportunities.

2018 POWER CONTENT LABEL		
City of Riverside Public Utilities		
<a href="http://riversidepublicutilities.com/about-rpu/rpu-power-resources.asp">http://riversidepublicutilities.com/about-rpu/rpu-power-resources.asp</a>		
ENERGY RESOURCES	Power Mix	2018 CA Power Mix**
Eligible Renewable	34%	31%
Biomass & Biowaste	0%	2%
Geothermal	18%	5%
Eligible Hydroelectric	0%	2%
Solar	12%	11%
Wind	4%	11%
Coal	29%	3%
Large Hydroelectric	1%	11%
Natural Gas	4%	35%
Nuclear	4%	9%
Other	0%	<1%
Unspecified sources of power*	27%	11%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>
* "Unspecified sources of power" means electricity from transactions that are not traceable to specific generation sources.		
** Percentages are estimated annually by the California Energy Commission based on the electricity generated in California and net imports as reported to the Quarterly Fuel and Energy Report database and the Power Source Disclosure program.		
For specific information about this electricity product, contact:	City of Riverside Public Utilities 951-826-8545	
For general information about the Power Content Label, please visit:	<a href="http://www.energy.ca.gov/pcl/">http://www.energy.ca.gov/pcl/</a>	
For additional questions, please contact the California Energy Commission at:	Toll-free in California: 844-454-2906 Outside California: 916-653-0237	

Figure 1: Riverside Public Utilities Power Content Label  
 Source: <https://www.riversideca.gov/utilities/about-rpu/rpu-power-resources.asp>

Since 2012, the Board of Public Utilities (Board) and City Council have approved over 270 megawatts (MW) of renewable resource contracts/extensions. The City is currently contracted for 86 MW of clean geothermal energy, 46 MW of wind, and over 140 MW of solar. The City served 37.6% of its power mix with renewable resources in 2019 (see Figure 1) and is on schedule to reach a 44% RPS by 2020.

As the cost of solar photovoltaic (PV) declines, the amount of intermittent solar generation on the grid continues to increase. Because solar PV only generates electricity during the middle of the day, other generation resources must be available to run at other hours of the day. As a result, the system net load (total load minus solar PV generation) in the middle of the day has reduced significantly. As solar PV generation rapidly declines in the evening as the sun sets, other generation resources, typically natural gas generation, must turn on and quickly generate electricity to meet demand. This rapid increase in demand on other generation in the evening is called ramping. The system-wide ramping requirement in the evening has increased considerably in order to meet the net-peak demand.

The California Independent System Operator (CAISO) illustrates the impact of the solar penetration on the grid in the diagram below, which is known as the “Duck Curve”. The Duck Curve highlights the potential of over-generation during the day, which contributes to negative energy prices in the CAISO market and undesirable generation curtailments.

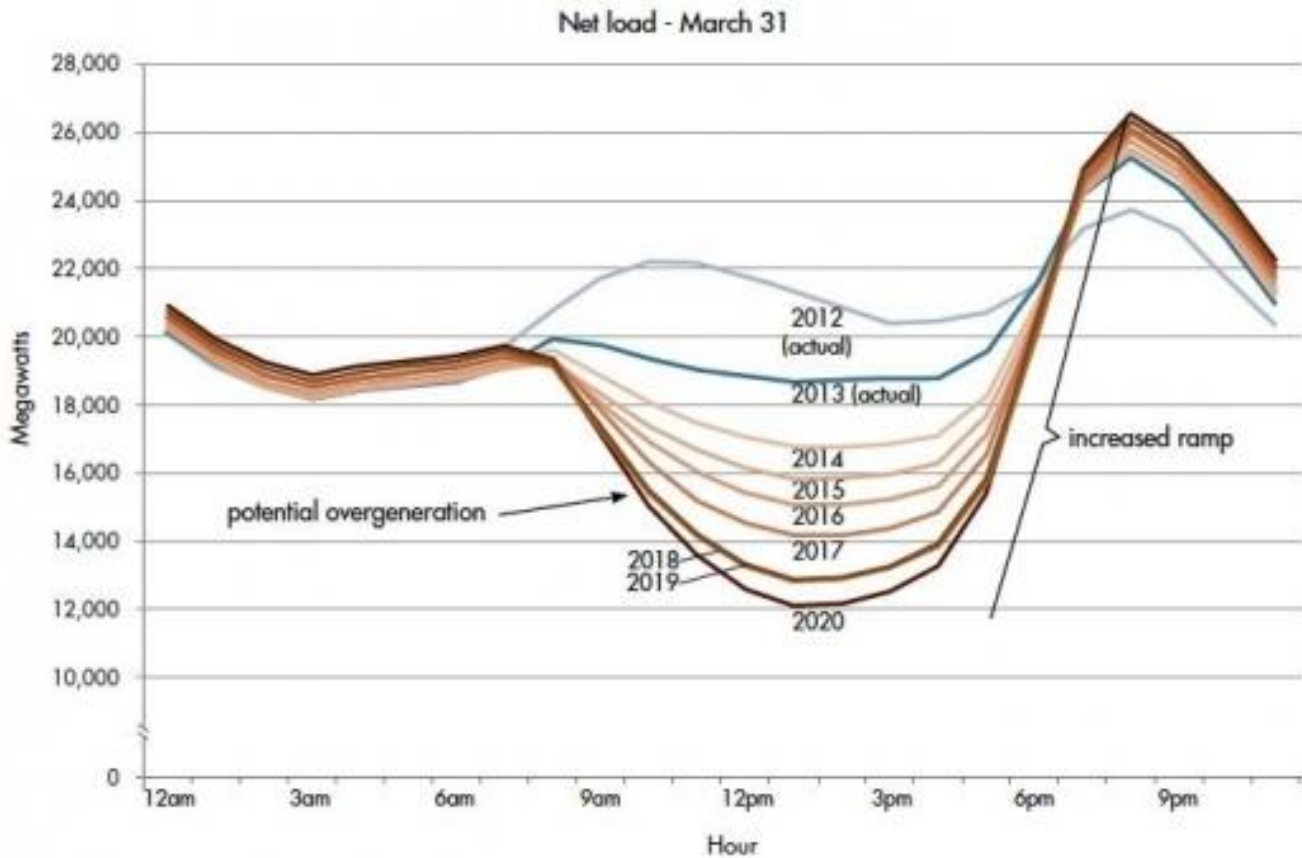


Figure 2: CAISO “Duck Curve”

Source: [https://www.caiso.com/Documents/FlexibleResourcesHelpRenewables\\_FastFacts.pdf](https://www.caiso.com/Documents/FlexibleResourcesHelpRenewables_FastFacts.pdf)

Further, Riverside’s largest baseload resource, the Intermountain Power Project (“IPP”), will be expiring in 2027. In an effort to meet our future RPS requirements using firm baseload energy, consistent with the strategy adopted in the 2018 Integrated Resource Plan, staff decided to pursue a geothermal project.

**DISCUSSION:**

For the last nine years, Riverside has actively contracted for cost effective, new long-term renewable resources with expected contract starting dates in the 2013-2022 timeframe. Each of these additional contracts were identified and selected for RPU’s renewable portfolio using a best-fit, least-risk procurement strategy with the goal of exceeding our 33% RPS mandate by 2020 and meeting our future mandates beyond 2020. These additional renewable resources will supply Riverside with enough new green energy to significantly exceed all our minimum RPS mandates well beyond 2020. More specifically, the contracts that the City has already approved are expected to help Riverside reach about a 44% RPS in 2020 and almost a 50% RPS by 2023.

The Coso Geothermal Energy Project (Project) was selected from the 48 developer responses received in response to Southern California Public Power Authority’s (SCPPA) annual Request for Proposals for Renewable Energy Resources and Energy Storage Solutions competitive solicitation issued for 2019. The Project was selected by Riverside in a joint effort with the City of Banning and the City of Pasadena, as a viable geothermal power project to advance the City’s

renewable energy goals. On September 17, 2020, the SCPPA Board of Directors approved the Coso Geothermal Energy Project.

This Power Sales Agreement for the Coso Geothermal Energy Project has the following desirable characteristics and favorable terms:

**Economy of Scale of Joint SCPPA Project:** The Coso Geothermal Energy Project has an expected capacity of 130 MW of which SCPPA has contracted for 14% of the capacity in Contract Years 1 through 5, 40% of the capacity in Contract Years 6-15, and 50% of the capacity in Contract Years 16-20. This capacity will be shared among the participant Cities of Riverside, Banning, and Pasadena.

	SCPPA Capacity	City of Riverside	City of Banning	City of Pasadena
Contract Years 1-5 (2022 through 2026)	18 MW	10 MW	8 MW	0 MW
Contract Years 6-15 (2027 through 2036)	48 MW	30 MW	8 MW	10 MW
Contract Years 16-20 (2037 through 2041)	58 MW	30 MW	8 MW	20 MW

**Project Site:** The Coso Geothermal Energy Project is an existing resource located in Inyo County, California and is owned and operated by Middle River Power. The Project is comprised of three facilities, Coso Finance Partners (“Navy 1”), Coso Power Developers (“Navy 2”), and Coso Energy Developers (“BLM”) all directly or indirectly owned and controlled by Coso Geothermal Power Holdings, LLC. Each facility contains three steam turbine generators and is metered independently.

**Term of the Power Sales Agreement:** Twenty-year Power Sales Agreement beginning on the Commencement Date, anticipated January 1, 2022.

**Commencement Date Guarantee:** The Coso Geothermal Energy Project has been operating since 1987, however, failure to begin deliveries on the Commencement Date will result in a penalty of \$5,000 per day.

**Capacity:** Riverside’s share of SCPPA’s contract capacity will be approximately 10 MW for Contract Years 1 through 5, and 30 MW for Contract Years 6-20, not accounting for plant degradation. The capacity increase is timed with the expiration of the IPP units in 2027.

**Price:** The all-in price for the energy, capacity, Resource Adequacy and environmental attributes from the Coso Geothermal Energy Project is \$69.00 per megawatt/hour (MWh), fixed over the term of the contract. This represents the lowest price in Riverside’s portfolio for a firm, baseload renewable generation asset.

**Performance Guarantees:** The Power Sales Agreement includes enforceable guarantees for the delivery of energy, capacity and environmental attributes, with penalties that result in financial payments, or in more severe cases, the unilateral right to terminate.

**Resource Adequacy Guarantees:** The Coso Geothermal Energy Project has the obligation to provide Resource Adequacy from the project or provide an adequate replacement.

**Congestion Risk Mitigation:** Unlike other renewable resources the City contracted in the past, the Coso Geothermal Energy Project is taking on most of the congestion risk by agreeing to a Point of Delivery close to the City.

**Performance Security:** Upon the Commencement Date, the Coso Geothermal Energy Project will provide a Performance Security letter of credit in the amount of \$4.1 million in Contract Years 1-5. The Performance Security will increase in Contract Years 6-15 to \$11.1 million and increase again in Contract Years 16-20 to \$12.4 million.

**Automatic Price Reduction:** If at any time during the term of the agreement, the Coso Geothermal Energy Project offers to sell Energy, Capacity, and Renewable Energy Credits (“REC”) to a third party for a term of 10 or more years for a price less than the current Contract Price, then the Contract Price will automatically be reduced to match the lower price in the new offer.

**RPS Provisions:** The Agreement offers strict RPS provisions which include a \$15 REC withholding until the RECs are received and requiring the facility to maintain CEC Compliance Standards with a spending cap of \$2.5M as well as a unilateral termination right for continued non-compliance.

**RPS Impacts:** The Coso Geothermal Energy Project will increase Riverside’s RPS level by about 4% in years 2022-2026 and 10-11% in years 2027-2041. Figure 3 shows how this renewable energy will help Riverside make further progress towards the states 60% RPS by 2030 mandate. It should be noted that all but one of RPU’s current renewable generation projects already exist and are delivering energy; thus, nearly 90% of the utility’s forecasted future renewable energy generation is not subject to project development risk. Likewise, all of the utility’s existing renewable energy contracts qualify as long-term Portfolio Content Category 1 resources (i.e., in-state resources that delivery both real-time renewable energy and credits to Riverside’s energy portfolio). This proposed Coso Geothermal Energy Project also satisfies both of these criteria.

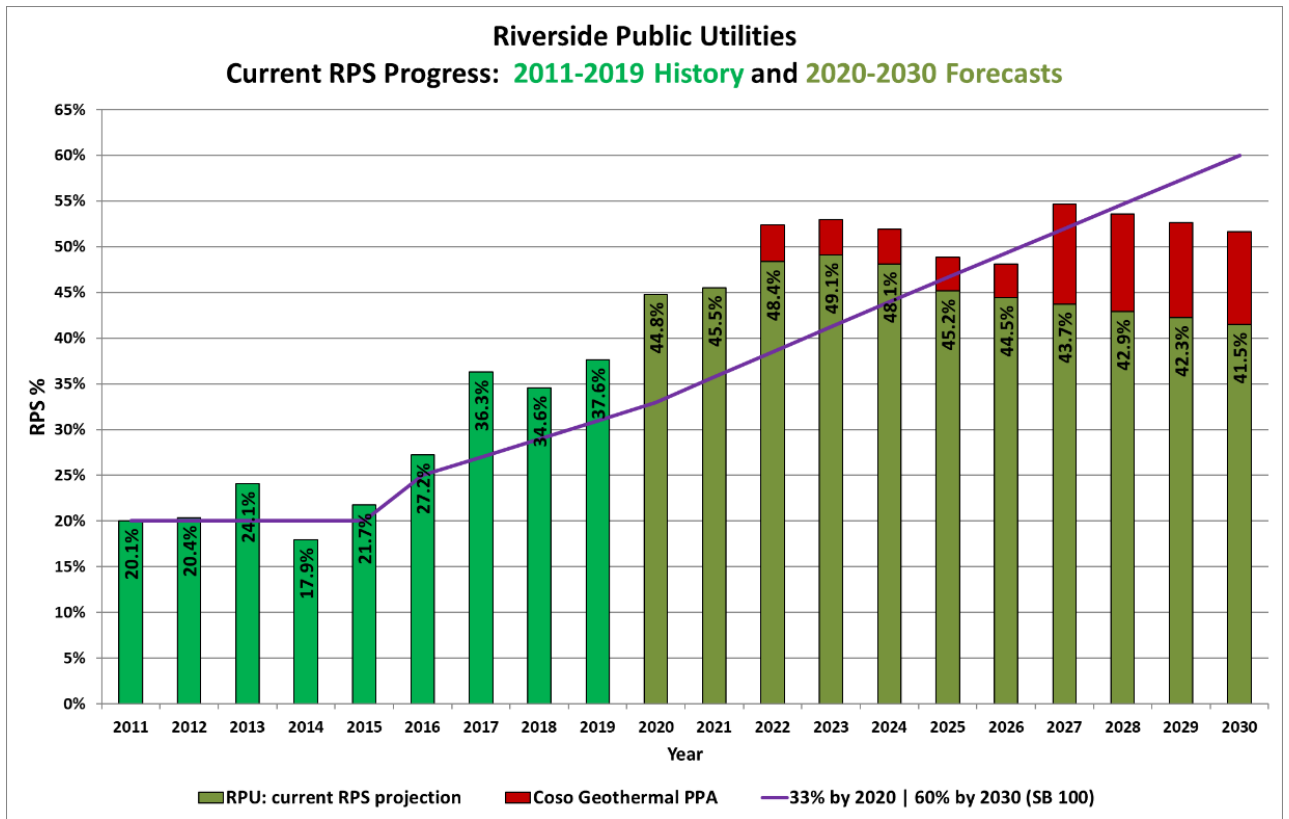


Figure 3. Impact of new Coso Geothermal Energy Project PPA on Riverside's current RPS progress.

Finally, chapters 12 and 13 in RPU's 2018 Integrated Resource Plan (IRP) describes a set of potential future portfolio resource additions that are consistent with the utility's long-term carbon reduction goals. These least risk / best fit resource additions were identified to allow RPU to meet or exceed the utility's 2030 emission reduction targets in the most cost-effective manner possible. A baseload renewable resource delivering 30-40 MW in 2027 represented a key component of these proposed resource additions. Production cost modeling simulation studies showed that such a resource would impose relatively minimal additional cost impacts to RPU's power supply budget, provided that the cost of the energy from this resource was less than \$71.70/MWh. This proposed Project also meets these objectives, while simultaneously helping RPU achieve its adopted RPS targets and carbon reduction goals.

In summary, this Coso Geothermal Energy Project meets all renewable energy sustainability and resiliency goals identified in both RPU's 2018 IRP and more recent City Council actions. This Project carries no development risk, while providing much needed baseload renewable energy to the utility's portfolio (specifically after 2027) with minimal stress to the power supply budget. Additionally, it will allow RPU to significantly reduce its carbon reduction footprint, consistent with the states 2030 GHG reduction mandates.

The Purchasing Manager concurs that the recommended actions are in compliance with Purchasing Resolution No. 23256, Section 702(L) which provides that competitive procurement through the informal or formal procurement process shall not be required "When the Procurement is for wholesale energy, energy ancillary services, energy transmission, wholesale water commodity, and water transmission purchase by or on behalf of the City's Public Utilities Department."

**FISCAL IMPACT:**

The annual average cost of power under the Power Sales Agreement is estimated at approximately, \$6,000,000 for contract years one through five and \$18,000,000 for contract years six through twenty. Sufficient funds are available in the Fiscal Year 2020/21 budget in the Electric Fund, Public Utilities' Power Resources Energy Account No. 6120100-422914. Future years' funding will be included as part of the budget development process.

Prepared by:	Todd M. Corbin, Utilities General Manager
Certified as to availability of funds:	Edward Enriquez, Chief Financial Officer/City Treasurer
Approved by:	Al Zelinka, FAICP, City Manager
Approved as to form:	Kristi J. Smith, Interim City Attorney

Attachments:

1. November 9, 2020 Unofficial RPU Board Meeting Minutes
2. Power Sales Agreement
3. Presentation