

OFFICE OF THE CITY ADMINISTRATIVE OFFICER

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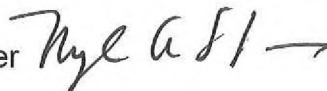
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Council File No.

Council District: outside City limits

To: The Mayor
The City Council

From: Miguel A. Santana, City Administrative Officer



Reference: Communication from the Department of Water and Power Board of Commissioners dated June 25, 2012

Subject: **POWER SALES AGREEMENT WITH SOUTHERN CALIFORNIA PUBLIC POWER AUTHORITY NO. BP 13-033 AND RELATED AGENCY AGREEMENT NO. BP 13-034 FOR THE HEBER-1 GEOTHERMAL ENERGY PROJECT**

SUMMARY

The Department of Water and Power (DWP) Board of Commissioners (Board) requests:

- Approval, by ordinance, to enter into a Power Sales Agreement (PSA) No. BP 13-033 between DWP and the Southern California Public Power Authority (SCPPA) to purchase an annual average of 34.32 megawatts (MW) of renewable geothermal energy from SCPPA resulting in an average annual expenditure for purchased energy of \$24.9 million for 10 years totaling \$249 million over the term of the Agreement. The PSA also enables SCPPA to enter into a Power Purchase Agreement (PPA) with Heber Geothermal Company, the owner of Heber-1 Geothermal Energy Project (HGEP) and a wholly-owned affiliate of Ormat Nevada, Inc. who is an affiliate of Ormat Technologies Inc., to obtain the renewable energy and environmental attributes towards Renewable Portfolio Standard (RPS) targets of DWP and the Imperial Irrigation District (collectively referred to as the Participants);
- Approval, by ordinance, to enter into an Agency Agreement (AA) No. BP 13-034 between DWP and SCPPA which designates DWP as the Project Manager to administer the HGEP including fiscal matters on behalf of and for the benefit of the Participants. DWP will charge and receive reimbursements from SCPPA for this service based on each Participant's share of the HGEP;

The total capacity of the HGEP is expected to be 46 MW with Participant shares consisting of DWP receiving up to 30.67 MW (or 66.67 percent) of the energy output and the Imperial Irrigation District (IID) receiving up to 15.33 MW (or 33.33 percent) of the energy output from 2016 to 2018. DWP's share of energy output changes from 2019 to 2025 to 35.88 MW (or 78 percent) and the IID receiving up to 10.12 MW (or 22 percent). This PSA does not include an ownership option because DWP is meeting an interim solution until a long term new facility can be developed. Renewable energy from HGEP would represent 1.3 percent of the Department's RPS

requirement in 2020 and will be enough energy to initially serve more than 47,600 homes. Because of the twenty-four hour availability of renewable energy from HGEP this energy will be added to the existing base load supply and thereby contribute to the reduction of coal generated energy.

City Council approval of PSA and AA is required pursuant to City Charter Sections 373 regarding rules for long-term contracts and 674(a) (1) and (2) regarding the purchase of power generating capacity. The proposed resolution, PSA, and AA have been reviewed by the City Attorney and approved as to form and legality. Since the Agency Agreement will be administered by DWP staff, City Charter Section 1022 regarding the use of independent contractors is not applicable.

BACKGROUND

In 2002, the California Legislature passed Senate Bill (SB) 1078 which established the California Renewable Portfolio Standard. SB 1078 requires privately owned utilities and encourages public owned utilities to increase their use of renewable energy resources until 20 percent of generation is obtained from renewables by the year 2013. Senate Bill SB2 1X, the California Renewable Energy Resources Act furthers SB 1078 by requiring both privately and publicly owned utilities, such as DWP, to increase their use of Renewable energy resources to 25 percent by the year 2016 and 33 percent by 2020. The DWP Board adopted the 2011 Integrated Resources Plan (IRP) which includes the following RPS Policy targets that achieve compliance with regulatory mandates:

RPS Policy and Compliance Targets	
Renewable Energy Amount (Average)	Compliance Targets
20%	Jan. 1, 2011 to Dec. 31, 2013
25%	Jan. 1, 2016 to Dec. 31, 2016
33%	Jan. 1, 2020 to Dec. 31, 2020
33%	Each year after 2020

DWP's IRP presents several potential strategies for meeting the regulatory requirements and policy objectives for increasing renewable energy generation and reducing greenhouse gases.

SOUTHERN CALIFORNIA PUBLIC POWER AUTHORITY

The Southern California Public Power Authority (SCPPA) is a non-profit joint powers authority. SCPPA was formed in 1980 for the purpose of planning, financing, developing, acquiring, constructing, operating and maintaining projects for the generation and transmission of electric energy. The members include the municipal utilities of the cities of Anaheim, Azusa, Banning, Burbank, Cerritos, Colton, Glendale, Los Angeles, Pasadena, Riverside, Vernon and the Imperial Irrigation District. SCPPA is governed by a Board of Directors, which consists of representatives from each of its members. The management of SCPPA is under the direction of an Executive Director, who is appointed by the Board. SCPPA's role has evolved over the years to include legislative advocacy at the state and national levels. SCPPA currently holds capacity entitlements

in various projects including the following projects and 100 percent of the output is sold and controlled by its member utilities.

SCPPA Projects

- Palo Verde Power Plant (DWP Participant)
- Hoover Upgrading Power Project
- Southern Transmission System (DWP Participant)
- Mead-Adelanto Transmission Project (DWP Participant)
- Copper Mountain Solar 3 Project (DWP Participant)
- Proposed Heber-1 Geothermal Energy Project (DWP Participant)

REQUEST FOR RENEWABLE ENERGY PROPOSALS

In January 2011, DWP and multiple utilities participated with the Southern California Public Power Authority (SCPPA) to issue a Request for Proposal (RFP) for the purchase and/or acquisition of renewable energy sources and 220 proposals were received. The purpose of the proposal process was to assess the availability of renewable energy projects and environmental attributes. DWP evaluated the proposals and intends to implement projects that satisfy the intent of the 2011 Integrated Resource Plan (IRP), which outlines DWP's goals for utilizing different resources for energy production.

The Department intends to achieve the RPS requirements and goals by utilizing a combination of existing projects, DWP RFPs for renewable energy projects, and Southern California Public Power Authority (SCPPA) sponsored projects. A significant number of the responses were for existing projects that are sited at facilities that did not require extensive development and regulatory approvals. The existing renewable projects include small hydro, biomass, and wind projects. The proposed HGEP is one of the 220 proposals selected by several SCPPA members based on established criteria.

THE POWER SALES AGREEMENT

HGC proposed a Power Sales Agreement for the purchase of 46 MW of renewable geothermal energy, generating capacity, and the associated environmental credits from the HGEP. The average fixed price on the proposals for geothermal energy was \$98.23 per MWh. Compared to these prices, the final price of \$80 per MWh bid by Geothermal Company (HGC) was considered the winning bid. HGEP is an existing facility that currently provides power to Southern California Edison through a PSA that expires on December 15, 2015. The HGEP facility provides geothermal energy utilizing a steam turbo-generator and is located on non-tribal private lands held by long term leases to HGC in the town of Heber in Imperial County, California. HGC has control of the leases through and beyond the term of the proposed PSA. The HGEP PSA provides for HGC to sell 46MW to SCPPA of renewable energy and environmental attributes from the Project for a term of 10 years starting February 2, 2016. Currently, HCEP generates 39 MW

of energy; however, HGC is conducting a scheduled facility upgrade which will increase the generation to 46 MW before the PSA with DWP begins. There will be an Interim Delivery Date of energy to DWP of December 16, 2015 before the official commencement date so that HGEP can assist the Participants and test the upgrades during the transition. The energy from the Project will be delivered through the IID and the Western Area Power Administration (WAPA) transmission systems to the DWP-owned transmission system at the Mead Substation located in Nevada.

The purchase price for the delivered energy, including transmission costs, is \$80 per MWh with a 1.5 percent annual escalation through the PSA 10-year term. DWP through SCPPA obtained a purchase price through various negotiations with HGC which reduced the \$93 per MWh bid price to \$80 per MWh and increased the requested term from five to ten years. The PSA 1.5 percent annual escalation affects the cost as follows:

2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
\$80.00	\$81.20	\$82.42	\$83.65	\$84.91	\$86.18	\$87.48	\$88.79	\$90.12	\$91.47

PROJECT COST AND SOURCE OF FUNDING

The current Power System 5-year Financial Plan that provided the basis of the Incremental Rate Ordinance No. 112273 (CF No. 12-1504), adopted October 5, 2012, considered the purchase of geothermal energy to comply with RPS requirements and included a placeholder for a minimum of one geothermal project. Since the HGEP will not be DWP-owned the Department states that funding for this PPA will be included in the FY 2015-16 Budget and future budgets; consequently, the placeholder will be used for a future DWP geothermal or other renewable energy project. Furthermore, funding of this PPA, which is consistent with the DWP 5-year Financial Plan and IRP, will be funded through increases to the Capped Renewable Portfolio Standard Energy Adjustment (CRPSEA) and the Variable Renewable Portfolio Standard Energy Adjustment (VRPSEA) that were included in the Incremental Electric Rate Ordinance No. 112273 adopted on October 5, 2012. The HGEP is expected to have a ratepayer impact of approximately \$0.021 per kilowatt-hour resulting in fiscal year 2015/16 approximately \$0.11 per month for a typical household and \$0.19 per month for the term of the PPA.

The environmental attributes provided as part of the price of energy would permit DWP to accumulate Renewable Energy Credits (RECs) as a credit toward the DWP RPS goals. In addition, current tax laws allow for the federal Investment Tax Credits (ITCs) to apply to private entities that develop and operate a qualifying renewable energy generation facility. DWP states that the HGEP PSA has been structured to receive the benefits associated with the ITCs through the lower energy purchase price of \$80 per MWh.

TRANSMISSION

Electricity generated from the Project will be delivered through the IID and the Western Area Power Administration (WAPA) transmission systems to the DWP transmission system at the Mead Substation, which is controlled by DWP. Because the IID transmission system and the

WAPA transmission system are also utilized by other utilities, the PSA contains transmission price guarantees for DWP. In the event that transmission services are not available for the delivery of the HGEP energy to the Mead Substation, HGC may deliver through the California Independent System Operator (CAISO) transmission system with no additional charge. Established in 1998 when the State of California restructured its wholesale electricity industry, the California Independent CAISO/City is a nonprofit public benefit corporation that manages the flow of electricity across the high-voltage, long-distance power lines, owned/controlled by numerous entities, that make up 80 percent of California's power grid. As the impartial grid operator, the ISO opens access to the wholesale power market that is designed to diversify resources and lower prices. It also grants equal access to 25,865 circuit-miles of power lines and reduces barriers to diverse resources competing to bring power to customers. DWP is not part of the CAISO system because the City of Los Angeles is a charter city and possesses its own power grid.

RISK MANAGEMENT

The PPA provides for HGEP to deliver geothermal energy for ten years; therefore, it is in the best interest of DWP to partner with a viable company to provide this energy. One indication of the capability of a company to adhere to a long term commitment is its experience and longevity in the business. The DWP advises that Heber Geothermal Company is a wholly-owned affiliate of Ormat Nevada, Inc. who is an affiliate of Ormat Technologies, Inc. (Ormat). Ormat is a leading geothermal energy developer in the U.S. and employs 550 employees nationally, including a large number of staff devoted to the geothermal development, construction, financing, commercial operation and facilities maintenance.

CANCELLATION OF AGREEMENT

The Agreement provides for scenarios in which DWP can terminate the Agreement with HGEP. One of the scenarios is the Force Majeure Event that is commonly found in many agreements and provides for cancellation due to an uncontrollable condition such as a disaster or act of God, preventing one of the parties from performing obligations listed in the Agreement. The PPA provides Performance Securities for various commencement milestones during the term of the Project, which SCPPA can draw upon if the Projects owner fails to timely achieve specific milestone dates or energy delivery dates. A Project Performance Security in the aggregate amount of \$22 million secures the sellers obligations under the PSA. A failure to meet the milestones will result in the damages as listed below:

HGEP Milestones and Penalty Schedule	Maximum Cost
Commencement Security by February 2, 2016	\$ 5,130,000
Delivery Term Security anytime until February 1, 2025 if delivery fails	\$22,000,000

COSTS OF OTHER SOURCES OF ENERGY

The typical industry cost of energy ranges from \$48 to \$225 per MWh, not including the transmission costs, which can add up to \$17 per MWh to the cost. DWP advises that while the future costs of renewable energy remains uncertain, the average price of the geothermal energy in the proposed HGEP PSA of \$80 per MWh is currently competitive. Furthermore, the DWP 2012 Integrated Resource Plan (IRP) reports that the Department's overall renewable portfolio levelized cost is \$98 per MWh. When compared to the proposed Manzana Wind energy costs (including transmission costs), the cost of the HGEP energy is approximately 18 percent lower than the 2012 DWP renewable portfolio.

The table below provides the average levelized cost per MWh of the Department's various sources of energy for comparison with the energy cost under the HGEP PPA.

Source of Energy	Cost per MWh
Coal	\$48
Combined Cycle Natural Gas	\$80
Simple Cycle Natural Gas	\$225
Solar Photovoltaic (PPA)	\$116
Solar Photovoltaic (In-Basin)	\$154
Solar Photovoltaic (Owens Valley)	\$153
Solar Customer-Net-Metered	\$130
Solar Feed-in-Tariff	\$152
Wind	\$105
Geothermal	\$109
Biomass	\$100
Small Hydropower	\$85
Large Hydropower	\$31

PROPOSED USAGE OF GEOTHERMAL GENERATED ENERGY

The DWP electric generation can be separated into three basic categories: base, intermediate and peak load units. Base load units derive their energy from operating generation stations on a constant (24 hours a day, 7 days a week) basis, historically needed to supply the DWP customers a majority of the time. Intermediate load units are utilized to satisfy periodic energy demand fluctuations. Peak load units are utilized to address short term seasonal or emergency needs.

Unlike wind or solar generated energy, geothermal energy is not affected by seasonal and meteorological variations that impact the availability of energy; therefore, this facility will be available 24 hours a day, seven days a week. The geothermal fluid for the plant would be produced from production wells by pumping from a geothermal reservoir. Once delivered to the power plant, the fluid would enter the Ormat Energy Converter units. The units are self-contained, fully-automatic, and produce grid compatible power. The geothermal fluid would flow through the plant's closed-loop system, with no emissions of non-condensable gases to the atmosphere. The energy will be utilized in the same manner as the Department's base energy

generation because of the sustainability of the geothermal energy at a lower price point and could be an integral part of the Department's Coal Replacement Plan.

The above mentioned aspects of the proposed resolution, agreements, and this report, are based upon revised information received from the DWP subsequent to the initial request submittal.

CONCLUSION

The proposed Power Sales Agreement will be effective upon the effective date of the ordinance approved by the Mayor and Council and is projected to contribute an additional one-half (0.5) percent to the Department's RPS goal of obtaining 33 percent of its energy from renewable sources by 2020. Currently, DWP has obtained 20 percent of its electrical generation capacity from renewable resources and is in the process of increasing the level to 21 percent by the end of calendar year 2013. The energy derived from the Heber-1 Geothermal Energy Project will be added to the Department's existing energy grid and the existing base load supply.

RECOMMENDATIONS

That the City Council, subject to the concurrence of the Mayor, approve by ordinance, execution of (i) Power Sales Agreement No. BP 13-033 between DWP and the Southern California Public Power Authority to purchase up to 46 megawatts of geothermal power annually through the Heber Geothermal Company for power from the Heber-1 Geothermal Energy Project located in Imperial County, California and (ii) Agency Agreement No. BP 12-034 between DWP and Southern California Public Power Authority which designates DWP as the Project Manager to administer the project on behalf of and for the benefit of the project participants, the Imperial Irrigation District and DWP.

FISCAL IMPACT STATEMENT

The proposed Power Purchase Agreement will have no direct impact on the City General Fund. Funds will be included in future Power Revenue Fund budget requests to provide up to \$249 million over the 10-year term of the Power Sales Agreement.

Time Limit for Council Action

The City Attorney advises that there is no time limitation for items approved by ordinance.