Los Angeles Department of Water & Power

BOARD LETTER APPROVAL

RESOLUTION NO. _____

MICHAEL S. WEBSTER
Executive Director – Power System Engineering and Technical Services

MARCIE L. EDWARDS
General Manager

DATE: June 10, 2016

SUBJECT: Thirty (30) Megawatts Geothermal Energy Purchase From the Ormesa Geothermal Complex Energy Project; Power Sales Agreement No. BP 15-030 and Agency Agreement No. BP 15-031 Between the Los Angeles Department of Water and Power and the Southern California Public Power Authority

SUMMARY

Approval of Power Sales Agreement (PSA) No. BP 15-030 and Agency Agreement (AA) No. BP 15-031 is required for the Los Angeles Department of Water and Power (LADWP) to acquire 30 megawatts (MW) of geothermal energy from the existing Ormesa Geothermal Complex Energy Project (Ormesa Project) located in Imperial County, California. The Ormesa Project is located approximately 34 miles away from the Salton Sea in a geologically separate geothermal area. The PSA enables LADWP to purchase this renewable energy from Southern California Public Power Authority (SCPPA) beginning November 30, 2017. The AA designates LADWP as the Project Manager to administer the Ormesa Project on behalf of the Project Participants.

The energy purchase price is $77.25 per megawatt-hour (MWh) fixed. LADWP's cost will be approximately $19.3 million annually, and $482 million over a 25-year term. This purchase has been budgeted.

The resolution authorizes LADWP to apply the renewable energy and environmental attributes acquired under this PSA towards the state-mandated compliance requirements of LADWP's Renewable Portfolio Standard Policy (RPS Policy) and Enforcement Program.

City Council approval is required pursuant to Charter Section 674.

RECOMMENDATION

It is recommended that the Board of Water and Power Commissioners (Board) adopt the attached Resolution recommending City Council approval, by Ordinance, of

PSA No. BP 15-030 to purchase 30.0 MW of geothermal energy and AA No. BP 15-031 for project management services with SCPPA per Charter Section 674.

ALTERNATIVES CONSIDERED

On February 1, 2014, SCPPA issued a Request for Proposal (RFP) for Renewable Energy and Energy Storage Projects and received over 117 proposals; 12 of them were from geothermal developers. The Ormesa Project was selected for the following reasons:

- Lowest Price, including energy and transmission cost to Point of Delivery (POD)
- High capacity factor firm baseload power source fits in LADWP's long-term coal replacement strategy
- Insignificant integration costs associated with integrating resource into electric grid system
- POD is in LADWP's Balancing Authority (BA) with available transmission capacity
- Significantly contributing to LADWP's RPS Program
- Experienced developer

Proposed energy would contribute approximately 1.1 percent towards LADWP's 2020 RPS mandates.

In addition to the Ormesa Project, other alternatives considered included more expensive geothermal projects and intermittent resources projects such as solar or wind which would require significant integration cost into the LADWP grid. If the Ormesa Project is not approved, LADWP would need to start negotiations with another developer for geothermal energy that may not meet the criteria mentioned above and could potentially be at less favorable terms.

FINANCIAL INFORMATION

The Power Purchase Agreement (PPA) has the following terms:

- Generation Capacity: 35.0 MW (LADWP's share is 30.0 MW)
- Capacity Factor: 95 percent
- Energy Price: $77.25 per MWh with no annual escalation

The total energy LADWP will receive from the Ormesa Project is approximately 250,000 MWh annually. The estimated average cost of this energy for LADWP is expected to be approximately $19.3 million annually and $482 million over the 25-year term. This PPA does not have a purchase option.

The funds will be used to purchase renewable energy and environmental attributes as part of LADWP's RPS Policy.

Funding is budgeted in Power Revenue Fund's Fuel and Purchased Power budget. The Ormesa Project is expected to have the System Retail Rates increase by an average of 0.036 cents per kilowatt-hour from 2018 to 2034. Ratepayers will benefit with the use of geothermal renewable energy that reduces fossil fuel consumption and emissions.

BACKGROUND

LADWP's 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, that historically is needed to supply LADWP 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 the intermittent resources, such as wind and solar, which require significant system integration, base load resources, such as geothermal, incur insignificant integration cost.

The Ormesa Project provides a reliable, sustainable, base load renewable energy which will be utilized in the same manner as the base energy generation which is an important part of the long-term coal replacement strategy for LADWP.

LADWP's RPS Policy

The RPS Policy represents the guiding principles of LADWP to implement renewable resources. The RPS Policy was amended in December 2013 to comply with regulatory requirements of the California Renewable Energy Resources Act, also referred to as California Senate Bill (SB) 2 (1X), which requires publicly owned utilities, such as LADWP, to supply 25 percent of its energy from renewable resources by 2016 and 33 percent by 2020. The RPS Policy was amended in accordance with Section No. 399.30(e) of the California Public Utilities Code. Furthermore, the RPS Policy will be amended to comply with SB 350 which the Senate and Assembly passed on September 11, 2015 and the Governor signed into law on October 7, 2015. The bill requires LADWP to increase to 50 percent the amount of electricity generated and sold to its customers per year from eligible renewable energy resources, such as geothermal, by December 31, 2030.

LADWP's Integrated Resource Plan (IRP)

LADWP's IRP presents several potential strategies for meeting LADWP's regulatory mandates and policy objectives for increasing renewable energy generation, reducing greenhouse gas emissions, maintaining electric power service reliability, and minimizing the financial impact on ratepayers.

The IRP establishes the following key selection principles for renewable projects:

- Comply with the California Renewable Energy Resources Act, SB2 (1X) and SB 350
- Maintain a high level of electric service reliability by taking advantage of the geographic diversity of renewable projects
- Maximize the use of existing LADWP assets, such as substations with balancing authority, and transmission lines with extra capacity
- Take advantage of the benefits of clustering resources to optimize efficiency for operations and maintenance of facilities.

LADWP rigorously evaluates each potential strategy to identify and recommend the best overall tactical plan to meet these key objectives.

SCPPA

SCPPA is a non-profit joint power agency formed in 1980 to facilitate joint power and transmission projects for the benefit of the Southern California municipal utilities. SCPPA's members include LADWP, the cities of Anaheim, Azusa, Banning, Burbank, Cerritos, Colton, Glendale, Pasadena, and Riverside as well as the Imperial Irrigation District (IID). On April 4, 2006, the Board approved the SCPPA Phase I Renewable Development Agreement No. 96125-76 under Resolution No. 006-157, which was subsequently superseded and replaced by the Phase II Renewable Development Agreement No. 12-020 which the Board approved on August 22, 2012 by adoption of Resolution No. 013-049, authorized LADWP to participate with other members of SCPPA for the purpose of investigating and performing due diligence on potential new renewable resource options.

On February 1, 2014, SCPPA issued an RFP, a competitive selection process, for the purchase of renewable energy resources. SCPPA received proposals from developers having the capability to provide renewable energy from various sources, such as solar, wind, biomass, landfill gas, and geothermal. Twelve proposals were from geothermal developers including the Ormesa Project from Ormat Nevada Inc. (Ormat).

Selection Criteria

The Ormesa Project was chosen based on a detailed comparison of each of the projects submitted to the SCPPA 2014 Renewable RFP and evaluated by LADWP's selection criteria. The selection criteria included:

- Lowest Price: $77.25 per MWh, fixed price, when compared to $101.71, calculated average fixed price of other geothermal proposals. Price also includes transmission cost and expected losses.

- Insignificant Integration Costs: Geothermal resource will incur insignificant integration cost when compared to intermittent resources, such as wind and solar.
- Firm Baseload 24 Hours, 7 Days a Week Generation and Highly Available Energy: Energy will be predictable and easy to forecast and schedule. The Ormesa Project will provide base load energy with a 95 percent capacity factor.
- Environmental Benefits: Geothermal technology produces near zero air emission and lowest environmental impact. The Ormesa Project uses a closed-loop system where geothermal fluid is extracted from and injected back to the source.
- Available Transmission and Accessible POD: The Ormesa Project will utilize existing transmission infrastructure. POD will be in LADWP's Balancing Authority at Mead 230-kV substation.
- Experienced Developer: Ormat is a world leader in geothermal power plant sector and supplies approximately 1,750 MW of gross capacity worldwide.

PPA Between SCPPA and Ormesa LLC

SCPPA is entering into the PPA with Ormesa LLC (Seller), a special-purpose entity fully owned and affiliated to Ormat and its parent Ormat Technologies, Inc., a Delaware Corporation. Ormesa LLC owns the Ormesa Geothermal Complex facility which is located east of Holtville in Imperial County, California. LADWP and IID are the Project Participants in this SCPPA Ormesa Project.

The PPA provides that the Seller will sell to SCPPA a net of 35 MW (approximately 291,000 MWh annually) of renewable energy and associated environmental attributes from the Ormesa Project, beginning November 30, 2017. LADWP will receive 30 MW (approximately 250,000 MWh annually) and IID will receive 5 MW (approximately 41,000 MWh annually). For LADWP, the POD will be at the Mead 230-kV substation utilizing the IID and the Western Area Power Administration (WAPA) Transmission Services and Transmission Systems. In the event that LADWP experiences limitations in its ability to receive the energy at Mead 230 KV substation prior to December 21, 2021, Seller will deliver the energy to the Blythe 161 kV substation, the Mirage 230 kV substation or the Imperial Valley 230 kV substation using the IID Transmission Services and Transmission System, provided that IID approves and that Seller and LADWP agree on the incremental cost associated with such redirect. The purchase price for delivered energy is $77.25 per MWh fixed for a 25-year term. This PPA does not have a purchase option.

For each contract year, the guaranteed generation of the Ormesa Project energy delivered to LADWP POD is 90 percent of the 30.0 MW net generation capacity. The guaranteed generation may be reduced by a maximum of 0.5 percent yearly during the 25-year term.

PSA No. BP 15-030 Between SCPPA and LADWP

Under the terms of the PSA, LADWP contractually agrees:

- To purchase from SCPPA a share of the electric output from the Ormesa Project, which is 30.0 MW of renewable geothermal energy and associated environmental rights and attributes, beginning November 30, 2017.
- To pay $77.25 per MWh, fixed price, for approximately 250,000 MWh of geothermal energy annually, totaling approximately $19.3 million annually and $482 million over the 25-year term.

The PSA also:

- Identifies the roles, rights, and obligations of SCPPA and LADWP including, but not limited to, project deliverables, project manager, setting up of an annual budget, accounting, and reporting requirements.
- Establishes LADWP as the Project Manager for the purpose of project control, communication, and coordination with SCPPA.
- Establishes payment mechanisms including, but not limited to, payment pledges, charges and billing procedures, and interest payments.
- Establishes the rights and obligations of SCPPA and LADWP to deliver energy, capacity, environmental attributes.
- Encompasses other agreements and obligations including, but not limited to, nonperformance and payment defaults, and liability conditions to termination or amendments.
- Addresses other services such as delivery procedures, transmission, and dynamic scheduling.

AA No. BP 15-031 Between SCPPA and LADWP

The AA designates LADWP as the Project Manager to manage and administer the Ormesa Project for and on behalf of the Project Participants in order to enable SCPPA to carry out activities necessary for the planning, development, and acquisition of the Ormesa Project.

The mutual covenants and agreements addressed by the AA include:

- Identifying the roles and obligations of SCPPA and LADWP in connection with project reviews, monitoring, accounting, billing, reporting, and controls, including the setting up of an annual budget and reporting requirements.
- Establishing payment mechanisms, and billing procedures including, but not limited to, payments between LADWP and SCPPA for costs, and charges, related to the Ormesa Project.
- Establishing a 25-year term for the AA to be the same as the term of the PSA.

Risk Management Provisions

The PPA provides performance securities throughout its term, which SCPPA can draw upon if certain conditions are not met. Seller shall pay SCPPA liquidated damages if it fails:

- To achieve Delivery Commencement Milestone Date (January 1, 2018): $43,370 per day up to $3,900,000 (Project Commencement Security).
- To meet its obligations under the PPA from and after the Delivery Commencement Date until the end of the PPA term: $16,740,000 (Delivery Term Security).

In the event there is a shortfall of energy that has not been made up by the Replacement Energy, Seller shall pay SCPPA liquidated damages, an amount for each MWh of remaining Shortfall Energy equal to the positive difference, if any, obtained by subtracting the amount that SCPPA would have paid had Facility Energy equal to the amount of Shortfall Energy been delivered to the POD from the Replacement Price (Shortfall Liquidated Damages).

In addition, the PPA includes a Special Environmental Liability (SEL) clause that if a Governmental Authority imposes and legally obligates SCPPA or any Project Participants to pay charges, fees, costs, assessments, taxes, payments or liabilities relating to the funding of the environmental mitigation of the Salton Sea located in Imperial and Riverside Counties in California, including restoration and other conservation and related purposes payments pursuant to the Requirement of Law, any SEL Settlement, or any judicial or regulatory action or other requirement, resulting from SCPPA or any Project Participants participation under the Ormesa PPA, then Seller shall be obligated to make payments to SCPPA or for SCPPA's account up to $10 million. The PPA also includes a termination clause that If Seller's aggregate payments for SEL equal or exceed the $10 million and any SEL shall thereafter be imposed on or continue to be imposed on or payable by SCPPA or any of the applicable Project Participants, unless Seller Continues to pay SEL on SCPPA's behalf, then SCPPA may terminate the PPA by providing notice of termination to Seller within 90 days after the date on which the $10 million is exhausted, and such termination shall become effective on the date that is 30 days after SCPPA provides such notice of termination unless the Parties agree in writing on an alternate date, in which case termination of the PPA shall become effective on such alternate date.

City Administrative Officer (CAO) Report

The CAO Report dated May 20, 2016 is attached.

ENVIRONMENTAL DETERMINATION

In accordance with Section 15060 (c)(2) of the California Environmental Quality Act (CEQA) Guidelines, an activity is not subject to CEQA if it will not result in a direct or reasonably foreseeable indirect physical change in the environment. Since this PPA

would involve purchase of power generated from an existing geothermal facility that has been in operation since the mid-1980s, it is not subject to CEQA.

CITY ATTORNEY

The Office of the City Attorney reviewed and approved the Resolution, PSA, and AA as to form and legality.

ATTACHMENTS

- Resolution
- Draft Ordinance
- Power Sales Agreement No. BP 15-030
- Agency Agreement No. BP 15-031
- Power Purchase Agreement
- CAO Report