




RESOLUTION NO. _____

BOARD LETTER APPROVAL


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DATE: March 13, 2017

SUBJECT: One Hundred Fifty (150) Megawatts Geothermal Energy Purchase From the Ormat Northern Nevada Geothermal Portfolio Project, Power Sales Agreement No. BP 16-023 and Agency Agreement No. BP 16-024, 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 16-023 and Agency Agreement (AA) BP 16-024 is required for the Los Angeles Department of Water and Power (LADWP) to acquire 150 megawatts (MW) of geothermal energy from the Ormat Northern Nevada Geothermal Portfolio Project (ONGP Project), consisting of existing and new geothermal plants. The PSA enables LADWP to purchase this renewable energy from Southern California Public Power Authority (SCPPA) beginning December 31, 2017, the Expected Commercial Operation Date (COD), and ending on December 31, 2043. The AA designates LADWP as the Project Manager and the sole Project Participant.

The energy purchase price is fixed at \$75.50 per MW-hour (MWh). LADWP's cost will be approximately \$94 million annually and \$2.4 billion over the energy delivery term. This purchase has been budgeted.

The resolution authorizes LADWP to apply the renewable energy and environmental attributes acquired under this PSA toward 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 16-023 to purchase 150 MW of geothermal energy and AA No. BP 16-024 for project management services with SCPPA.

ALTERNATIVES CONSIDERED

On January 1, 2016, SCPPA issued a Request for Proposal (RFP) for Renewable Energy and Energy Storage Projects and received over 100 proposals; 7 of them were from geothermal developers. The ONGP 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 and achieves the Integrated Resource Plan (IRP) goals
- 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 five percent (5 percent) towards LADWP's 2030 RPS mandates of fifty percent (50 percent).

In addition to the ONGP Project, other alternatives considered included more expensive geothermal projects and intermittent resource projects such as solar or wind which would require significant integration cost into the LADWP grid. If the ONGP 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: 150 MW
- Capacity Factor: 95 percent
- Energy Price: \$75.50 per MWh with no annual escalation
- Energy Delivery Term: Starts on December 31, 2017 (Expected COD) and ends on December 31, 2043

The total energy LADWP will receive from the ONGP Project is approximately 1,250 gigawatt-hours (GWh) annually. The estimated average cost of this energy for Los Angeles is expected to be approximately \$94 million annually and \$2.4 billion over the energy delivery 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 ONGP Project is expected to have the System Retail Rates increase by an average of 0.178 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 ONGP 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 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 from various resources
- 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.

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. This 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, authorizing LADWP to participate with other members of SCPPA for the purpose of investigating and performing due diligence on potential new renewable resource options.

On January 1, 2016, 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. Seven proposals were from geothermal developers, including the ONGP Project from Ormat Nevada Inc.

Selection Criteria

The ONGP Project was chosen based on a detailed comparison of each of the projects submitted to the SCPPA 2016 Renewable RFP, and evaluated by LADWP's selection criteria. The selection criteria included:

- **Lowest Price:** \$75.50 per MWh, fixed price, when compared to \$93.42, calculated average fixed price of other geothermal proposals. This 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 ONGP Project will provide base load energy with a 95 percent capacity factor.
- **Environmental Benefits:** Geothermal technology produces near-zero air emission with the lowest environmental impact. The ONGP Project uses a closed-loop system where geothermal fluid is extracted from and injected back to the source.

- Available Transmission and Accessible POD: The ONGP Project will utilize existing transmission infrastructure. POD will be in LADWP's Balancing Authority at Crystal 500 kV Substation. The alternate POD is McCullough 500 kV Substation.
- Experienced Developer: Ormat is a world leader in the geothermal power plant sector and supplies approximately 1,750 MW of gross capacity worldwide.

PPA Between SCPPA and ONGP LLC

SCPPA is entering into the PPA with ONGP LLC, a special-purpose entity fully owned and affiliated to Ormat and its parent Ormat Technologies, Inc., a Delaware Corporation. ONGP LLC owns the Ormat Northern Nevada Geothermal Portfolio Project. LADWP is the sole Project Participant in this SCPPA ONGP Project.

The PPA provides that ONGP LLC will sell to SCPPA a net of 150 MW (approximately 1,250 GWh) annually of renewable energy and associated environmental attributes from the ONGP Project starting December 31, 2022 through December 31, 2043. From December 31, 2017 to December 31, 2022, ONGP LLC is expected to sell to SCPPA a net of 60 MW (approximately 500 GWh) with a total output of 150 MW annually in three-phase increments.

For each contract year, the guaranteed generation of the ONGP Project energy delivered to LADWP POD is ninety-five percent (95%) of the net generation capacity. The guaranteed generation may be reduced by a maximum of one-half percent (0.5%) yearly during the energy delivery term.

PSA No. BP 16-023 Between SCPPA and LADWP

Under the terms of the PSA, LADWP contractually agrees:

- To purchase from SCPPA the full share of the electric output from the ONGP Project, which is 150 MW of renewable geothermal energy and associated environmental rights and attributes over the delivery term of the PPA.
- To pay \$75.50 per MWh, fixed price, for approximately 1,250 GWh of geothermal energy annually, totaling approximately \$94 million annually and \$2.4 billion over the energy delivery 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, and 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 16-024 Between SCPPA and LADWP

The AA designates LADWP as the project manager to manage and administer the ONGP Project for and on behalf of SCPPA, and set forth mutual covenants and agreements between SCPPA and LADWP in order to enable SCPPA to carry out activities necessary for administration of the ONGP Project on behalf of LADWP.

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 ONGP Project.

Establishing the energy delivery term for the AA to be the same as the term of the PSA.

Risk Management Provisions

The PPA provides performance securities throughout its development periods, which SCPPA can draw upon if conditions specified in the PPA are not met. ONGP LLC shall pay SCPPA liquidated damages if it fails:

- To achieve 1st Development Period Minimum Net Capacity of 60 MW (December 31, 2017): \$1,239 per MW per day (Project Commencement Security).
- To achieve 2nd Development Period Minimum Net Capacity of 90 MW (December 31, 2020): \$1,239 per MW per day.
- To achieve 3rd Development Period Minimum Net Capacity of 135 MW (December 31, 2022): \$1,239 per MW per day.

In the event there is a shortfall of energy that has not been made up by the Replacement Energy, ONGP LLC 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).

City Administrative Officer (CAO) Report

The CAO Report dated February 1, 2017 is attached.

ENVIRONMENTAL DETERMINATION

In accordance with the California Environmental Quality Act (CEQA), it has been determined that PSA No. BP 16-023 for 150 MW of geothermal capacity from the ONGP Project's new and existing plants in Northern Nevada, and AA No. BP 16-024 for project management services with SPPA are statutorily exempt pursuant to Section 15277 of the CEQA Guidelines. This section states that CEQA does not apply to any project located outside of California which is subject to environmental impact review pursuant to the National Environmental Policy Act (NEPA). In addition, this project would not result in any emissions or discharges that would have a significant effect on the environment in the State of California, which would be subject to CEQA.

Because the United States Department of Interior, Bureau of Land Management (BLM), exercises jurisdiction over the involved leased federal lands, the ONGP Project's existing plants have been, and new plants will be, subject to compliance with NEPA. In accordance with the California Code of Regulations Title 20, Chapter 11, Section 2903(b)(1), the ONGP Project is determined to be compliant with the Emission Performance Standard.

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 16-023
- Agency Agreement No. BP 16-024
- Power Purchase Agreement between ONGP LLC and SPPA
- CAO Report