

**OFFICE OF THE CITY ADMINISTRATIVE OFFICER**

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Date: October 31, 2012

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Council File No. 12-1614  
Council District: outside City limitsTo: The Mayor  
The City Council

From: Miguel A. Santana, City Administrative Officer



Reference: Letter from the Board of Water and Power Commissioners dated October 10, 2012; referred for report

Subject: **APPROVAL OF THE K ROAD MOAPA SOLAR PROJECT POWER PURCHASE AGREEMENT BP 12-017 AND PURCHASE OF THE PROJECT FROM K ROAD MOAPA SOLAR, LLC**

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**SUMMARY**

The Board of Water and Power Commissioners (Board) requests approval of Resolution No. 013073 which:

- Authorizes the Board to execute the Power Purchase Agreement (PPA) No. BP 12-017 between K Road Moapa Solar, LLC (KRMS) and the City of Los Angeles acting by and through the Department of Water and Power to purchase all of the generated renewable solar energy up to 250 Megawatts (MW) annually from KRMS. The source of the solar energy will be the K Road Moapa Solar Generation Facility (Solar Facility), located on the Moapa Indian Reservation 30 miles north of Las Vegas, Nevada;
- Authorizes DWP's purchase of a five and one-half mile 500 kilovolt (kV) transmission line on the Federal Bureau of Land Management (BLM) utility corridor on Moapa Indian Tribal land prior to the Commercial Operation Date (COD), to connect to the DWP-owned Crystal substation at a cost not to exceed \$18 million.
- Authorizes the DWP to return to the Board and Council for the consideration and possible action of exercising an ownership option to purchase the Solar Facility within six months of the 10<sup>th</sup>, 15<sup>th</sup>, 20<sup>th</sup>, or 24<sup>th</sup> year anniversary of the COD at which time DWP will pay Fair Market Value (FMV) as provided for in the PPA.
- Requests approval by ordinance of the PPA and approval of authorization for the Board of Water and Power Commissioners (Board) to act on non-policy amendments to the PPA without further approval by the Mayor and City Council. The Department anticipates that any future amendments to the project would be routine in nature and requests this provision to avoid delays in the completion of the project. Issues involving policy decisions will continue to be submitted to the Mayor and City Council.

The term of the PPA is twenty-five years as of the completion date or Guaranteed Commercial Date of Operation (GCOD), which is scheduled for December 31, 2015. The PPA is for the purchase of renewable solar energy from December 31, 2015, through December 30, 2040. Approval of the PPA, by ordinance, is needed before DWP can issue a Notice to Proceed. The Notice to Proceed must be received by December 31, 2012 or the project will be delayed by six months due to environmental risks of relocating any Desert Tortoises in the proposed Solar Facility area. The City Charter Section 1022 process regarding the use of independent contractors has been completed and a determination has been made that in the case of a PPA it is not applicable.

The total expected energy generation capacity of 250 MW, will provide sufficient solar renewable energy per year to serve more than 113,000 homes. The intent of this PPA is to enable the DWP to purchase renewable solar energy to increase the percentage of renewable energy in the DWP portfolio by 2.9 percent. The energy will be added to the Department's existing energy grid and will not replace the existing base load supply.

**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 2017. 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.

**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.

### **K ROAD MOAPA SOLAR PROJECT**

One of the 220 proposers received during the SCPPA RFP process was K Road Moapa Solar, LLC (KRMS), who proposed a power purchase agreement and/or acquisition of the generation facility which will be built by K Road. Although the SCPPA team, including DWP, negotiated the proposed PPA including the purchase option and the transmission line purchase; the location of the facility and the DWP's transmission system narrowed the interested participants to only DWP's participation. Therefore, in order to limit administrative costs and centralize management functions, DWP decided to enter into an exclusive Agreement with KRMS. On September 24, 2012, the Board approved Resolution No. 013073 authorizing the 25-year solar power PPA with KRMS for the 250 MW output of the Solar Facility and its associated environmental attributes to be located on the Moapa Indian Reservation thirty miles north of Las Vegas, Nevada.

The Solar Facility will be located on 2,500 acres of tribal land, which will be leased to K Road for 50 years. The actual expected life of the facility before large maintenance is required is approximately 30 years. The number of solar panels is expected to total 910,000, and the Solar Facility's expected total maximum energy output is approximately 760 gigawatt hours (GWh) per year. KRMS must install and deliver at least 20 MWh of solar energy produced from the Solar Facility to DWP by early 2015. The remaining energy will be phased in at a minimum of 20 MW increments until the minimum of 225 MW or maximum of 250 MW is delivered on the GCOD. The energy will be priced at a fixed rate of \$93.19 per MWh or .093 per kilowatt hour (kWh) without an escalation factor. The impact on a typical residential customer bill is forecasted to be \$0.80 per month.

The estimated cost of the renewable solar energy and the environmental attribute purchases over the 25-year term of the PPA is expected to total \$1.6 billion. Before the delivery of the first 20 MW of energy in early 2015, DWP shall purchase from KRMS the 500 kV transmission line connecting to the Crystal-McCullough-Victorville Substation for an amount not to exceed \$18 million. As the sole owner of the transmission line connection and the DWP transmission line, the payment for the solar energy from the Solar Facility shall be reduced to \$91.69 MWh or .091 per kWh. According to the Department, the fixed price of \$91.69 per MWh is currently competitive with other bids received by SCPPA that meet established criteria. However, DWP also states that the future price of solar energy is uncertain due to rapidly advancing technology within the solar industry that has substantially lowered the cost and increased the efficiency of solar panels, benefiting the Department with lower costs for solar energy.

The PPA states that the energy must be provided exclusively from the Solar Facility and in no event shall the KRMS have the right to procure energy from other sources. This provision includes the exclusion of non-renewable sources.

The environmental attributes purchased as part of the price of energy would permit DWP to accumulate Renewable Energy Credits (RECs) as a credit to the DWP Renewable Portfolio Standard (RPS) goal. In addition, current tax laws allow for the federal Investment Tax Credits (ITC)s to apply to private entities that develop and operate a qualifying renewable energy generation facility. DWP states that the KRMS PPA has been structured to receive the benefits associated with the ITCs through lower energy purchased prices. According to the Department, the average value of the ITCs to DWP under the KRMS PPA is approximately \$13 million per year or \$325 million over the 25 year term.

## PROJECT COSTS AND SOURCE OF FUNDING

The current power system financial plan, upon which the recently approved two year rate action (C.F.12-1504) was based, contemplated procurement of solar energy to comply with the State's renewable portfolio standard requirements. DWP included in that financial plan placeholders for two solar projects that have similar terms to the proposed PPA with K Road Solar. These placeholder solar projects had rate impacts affecting FY 2013-2014 and FY 2014-2015.

There are certain differences between the placeholder projects and the proposed K Road Solar project with respect to cost and capacity, and accordingly, results in changes to DWP's financial plan. The proposed K Road Solar project has costs per megawatt hour of energy that are lower than the projected costs DWP included in the financial plan. The annual cost of the energy from the K-Road Solar project is expected range between \$58 - \$64.8 million, **depending on the level of output, which will depend on final selections of panels and infrastructure by the developer.** The contract permits the developer to have output between 225GW and 250GW. The energy has a fixed price per MWh of \$91.69 including transmission costs.

The financial plan assumed that the projects would begin producing energy as of January 1, 2014. The two proposed projects that are now in the financial plan are anticipated to begin producing energy in 2015. K-Road Solar will begin production in early 2015, and would ramp up to full production by the end of 2015. The approved rates for FY13/14 provided funding for the output of the two placeholder solar projects from January 1 through June 30, 2014. The funding for this project is consistent with the DWP 5-year Financial Plan that was reviewed as part of the recent rate action. This project will be funded through the increases to the CRPSEA (Capped Renewable Portfolio Standard Energy Adjustment) and the VRPSEA (Variable Renewable Portfolio Standard Energy Adjustment) that were called for in the rate increase. Adjustments in the VRPSEA rate are enacted quarterly, with DWP Board approval. The K Road solar project is expected to have a rate impact of approximately 0.16 cents per kWh, including transmission costs, by FY15/16.

On October 5, 2012 the City Council (C.F.12-1504) adopted the Incremental Electric Rate Ordinance No. 112273, which includes the CRPSEA and the VRPSEA adjustments that account for fuel costs. The PPA provides for the purchase of solar energy from KRMS. However, should DWP decide to purchase the Solar Facility at the option dates indicated in the PPA, the impact on ratepayers will change from an expense to a capital expenditure which should be considered in the financial plan of future budgets. At this time, the PPA doesn't require purchase of the Solar Facility and DWP did not

factor a purchase into the rate ordinance for FY 2012-13 or 2013-14. The cost of PPA is consistent with the IRP and the adopted Incremental Electric Rate Ordinance.

**PURCHASE OPTIONS**

Under the terms of the PPA, DWP will have the option to purchase the Solar Facility at the end of the 10<sup>th</sup>, 15<sup>th</sup>, 20<sup>th</sup>, or 24<sup>th</sup> anniversary dates from the COD, provided that DWP gives its notice to exercise the Purchase Option six months after the above mentioned dates (Purchase Option). The Purchase Option does not include the land under the solar facility because K Road leases the land from the owners, the Moapa Indian Tribe. At the time of the closing of a purchase, the PPA allows for the lease to be reassigned to DWP from the Moapa Indian Tribe. Council approval, in accordance with Charter Section 373, will be required if DWP proposes to acquire the project because DWP would be required to assume the assignment of the long-term land lease instead of KRMS. Section 4.2 of PPA referring to the Purchase Option specifically states that further authorizations from the Board and the City Council will be required for DWP to exercise the Purchase Option. The Purchase Option price will be based on the fair market value of the facility at the time of purchase with a pre-determined floor and ceiling price summarized below.

**Solar Facility Purchase Options**

Year	Floor price	Ceiling price
10	\$339 Million	\$398 Million
15	\$262 Million	\$315 Million
20	\$140 Million	\$168 Million
24	\$110 Million	\$135 Million

Although it is the policy of the Board of Water and Power Commissioners to own renewable power facilities and this PPA does not guarantee ownership, the energy from the project will allow DWP to meet its goals of increasing the use of renewable energy by 2020 until new sources can be acquired or built.

**RISK MANAGEMENT**

The PPA provides for KRMS to deliver solar energy on a long term basis; 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 credit rating. The DWP advises that K Road Moapa Solar, LLC, is an equity partner of Barclays National Resource Investments, a division of Barclays Capital. Barclays Bank PLC has a Standard and Poors credit rating of A+ and a Moody's rating of A2.

KRMS has a parent company, K Power, which is an independent power producer that develops, owns, and operates utility-scale renewable energy projects with a focus on building photovoltaic solar facilities to generate clean and reliable energy. KRMS was founded in 2002 and since 2008 has specialized exclusively in the renewable power sector. Today the company has nine fully permitted utility scale power projects in four regions in the United States totaling 900 MWs. These projects are

in different phases of development. The status of the energy output of the projects is as follows: 25 MW are in operation; 320 MW are in the construction phase with an estimated completion date of 2013; and the remaining are in the final stages of development.

## TRANSPORTATION

The delivery of power to DWP will be through the Crystal-McCullough-Victorville Substation, which is owned by DWP. KRMS will build the transmission line and facility that passes through the BLM transmission corridor and connects to the DWP owned Substation. DWP will purchase this connecting transmission line for a price not to exceed \$18 million. The DWP does not consider the connection of the energy to the existing transmission system a substantial risk since the solar resources will be within the grid capacity levels.

## CANCELLATION OF AGREEMENT

The Agreement provides for scenarios in which DWP can terminate the Agreement with KRMS. 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 stages of construction and through the life of the facility, which DWP can draw on if certain conditions are not met. A failure to meet the following milestones will result in the following damages:

- Failure to begin on the Notice to Proceed - \$5,000/day up to \$5 Million
- Failure to meet the Initial Delivery Milestone - \$15,000/day up to \$5 Million
- Failure to meet Facility COD - \$40,000/day up to \$ 5 Million

In order to better secure the credit risk, DWP obtained a Performance Bond (also referred to as a Performance Security in the PPA) in the amount of \$5 Million furnished on the effective date.

## COSTS OF OTHER SOURCES OF ENERGY

The typical industry cost of energy ranges from \$48/MWh to \$152/MWh, not including the transmission costs, which can add another \$17/MWh to the cost. DWP advises that the costs continue to escalate at a rate greater than inflation and that the average price of the energy proposed in the KRMS PPA of \$91.69 MWh or .091 per kWh is competitive. A recent survey of industry-wide energy prices comparing the approximate costs per MWh for other sources of energy and prices reflected in the DWP proposed 2012 IRP are provided below for comparison with the energy cost under the KRMS PPA.

<u>Source of Energy</u>	<u>Cost per MWh</u>
Coal	\$48
Small Hydropower	\$76
Natural Gas	\$80-170 (depends on capacity and cost of gas)
Geothermal	\$65-\$106
Biomass	\$68-\$110
Solar	\$116-\$152

## **PROPOSED USAGE OF SOLAR 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.

Solar energy is affected by seasonal and meteorological variations that impact the availability of the sun; however, the facility is sited in an area which has a high probability of generating solar energy seven days a week during daylight hours. The energy will not be utilized in the same manner as the Department's base energy generation because of the intermittent nature of solar energy; however, it will be used to supplement the base energy during peak hours and during high temperature periods.

## **ENVIRONMENTAL CONSIDERATION**

An Environmental Impact Study was finalized on March 15, 2012, which identified the Desert Tortoise as a species that would be affected by the Solar Facility. In order to accommodate the Desert Tortoise migration and gestation cycles the Notice to Proceed must occur by December 30, 2012. Any delays will delay the project status by six months. For example, a day delay would result in the COD date to change from December 30, 2015 to June 30 2016. All other intermediate milestones would also be delayed by six months.

## **CONCLUSION**

The Power Purchase Agreement will be effective upon the effective date of the ordinance approved by the Mayor and Council and is projected to contribute an additional 2.9 percent to the RPS goal of obtaining 33 percent of its energy from renewable sources by 2020. Currently, DWP has obtained, or is in the process of obtaining, 17.8 percent of its electrical generation capacity from renewable resources. The energy derived from the Solar Project will be added to the Department's existing energy grid and will not replace the existing base load supply.

City Council approval of PPA No. BP 12-017 is required pursuant to City Charter Section 373 regarding rules for long-term contracts and Section 674(a)(1)(A) and (a)(2) regarding the purchase of electric generating capacity. The City Attorney has approved the Resolution No. 013073 as to form and legality. The Board approved the KRMS Solar Facility proposal on September 24, 2012.

## **RECOMMENDATIONS**

That the City Council, subject to the concurrence of the Mayor:

1. Approve Purchase Power Agreement (PPA) No. BP 12-017 between DWP and the K Road Moapa Solar, LLC, to purchase up to 250 MW of renewable solar energy; and

2. Approve DWP's purchase of a five and one-half mile 500 kilovolt (kV) transmission line on the Federal Bureau of Land Management (BLM) utility corridor on Moapa Indian Tribal land prior to the Commercial Operation Date to connect to the DWP-owned Crystal substation at a cost not to exceed \$18 million.
3. Request that DWP return to the Mayor and Council for the consideration and possible action to exercise an ownership option to purchase the Solar Facility within six months of the 10<sup>th</sup>, 15<sup>th</sup>, 20<sup>th</sup>, or 24<sup>th</sup> year anniversary of the Commercial Operation Date at which time DWP will pay Fair Market Value as provided for in the Power Purchase Agreement.

### **FISCAL IMPACT STATEMENT**

The proposed Power Purchase Agreement will have no direct impact on the City General Fund. K Road Moapa Solar, LLC has provided DWP with a Performance Bond with a cap of \$5 Million to cover any payments that K Road Moapa Solar, LLC will be expected to pay DWP. The Power Revenue Fund will provide up to \$64.8 million annually or \$1.6 billion over the 25-year term of the Power Purchase Agreement. In addition, in early 2015 there will be an expenditure of not more than \$18 million for the 500 kV transmission line to the Crystal Station. Funds have been provided in the FY 2013-2014 and FY 2014-2015 Budget and the Power Incremental Ordinance.