Agenda Report

September 30, 2013

TO: Honorable Mayor and City Council

THROUGH: Municipal Services Committee (September 24, 2013)

FROM: Water and Power Department

SUBJECT: **AUTHORIZE THE CITY MANAGER TO ENTER INTO POWER SALES AGREEMENTS WITH SCPPA FOR THE PURCHASE OF SOLAR ENERGY FROM THE RECURRENT ENERGY CLEARWATER AND COLUMBIA TWO PROJECTS**

RECOMMENDATION:

It is recommended that the City Council:

1. Find that the recommended contract authorization is exempt from the California Environmental Quality Act ("CEQA") pursuant to State CEQA Guidelines Section 15061(b)(3) (General Rule);

2. Authorize the City Manager to enter into Power Sales Agreements with the Southern California Public Power Authority ("SCPPA[1]") to purchase renewable energy and capacity from 17.143% (6 MW) share of the 20 MW Clearwater and the 15 MW Columbia Two solar projects ("Recurrent Energy Projects") in Mojave, California, for a term ending 20 years after the commercial operation date. Neither competitive bidding nor competitive selection is required pursuant City Charter Section 1002(h), and Pasadena Municipal Code Section 4.08.049.A.3, contracts with other governmental entities.

MUNICIPAL SERVICES COMMITTEE RECOMMENDATION:

On September 24, 2013, the Municipal Services Committee recommended that the City Council authorize the City Manager to enter into Power Sales Agreements with SCPPA for a 17.143% (6 MW) share of the Recurrent Energy Projects.

[1] SCPPA is a California joint powers authority, whose members include the cities of Anaheim, Azusa, Banning, Burbank, Cerritos, Colton, Glendale, Pasadena, Riverside, Vernon, the Los Angeles Department of Water and Power, and the Imperial Irrigation District. See website at: http://www.scppa.org.

BACKGROUND:

The City of Pasadena has adopted a number of aggressive environmental goals applicable to the Pasadena Water and Power Department ("PWP"), including a renewable Portfolio Standard ("RPS") goal to supply 40% of its retail energy sales with renewable resources by 2020. Meeting the RPS goal is a key component of PWP's plan to reduce greenhouse gas emissions by 40% by 2020. These goals were adopted by the City Council as part of PWP's Integrated Resource Plan ("IRP")[2]. PWP is also required to comply with the state-wide 33% RPS embodied in Senate Bill X 1-2 ("SBX 1- 2"), and has incorporated the state mandate as well as the City's own voluntary 40% RPS goal into its RPS Procurement Plan. The proposed contracts with SCPPA for a share of these Recurrent Energy Projects, together with the recently approved Kingbird Solar Project, will fulfill the volumes identified as "under negotiation" within the PWP RPS Procurement Plan.

Table 1
Current Renewable Energy Portfolio Summary (GWh[3])

Calendar Year	2015	2016	2020	2025
Azusa Hydro	5	5	5	5
Iberdrola High Winds	14	14	14	-
Minnesota Methane LFG	42	42	-	-
Ormat Geothermal	16	16	16	16
Milford Wind Phase 1	11	11	11	11
Chiquita Canyon LFG	37	37	37	37
EDF Biomethane	13	13	14	-
Sequent Biomethane	29	30	38	-
Waste Management Biomethane	41	41	41	-
Silverado Solar	32	32	32	32
Kingbird Solar	-	60	58	57
Recurrent Energy Projects	18	18	18	17
Total Renewable Supply	**258**	**319**	**284**	**175**
Retail Sales*	1,129	1,121	1,078	1,078
% Renewable	**22.9%**	**28.5%**	**26.3%**	**16.2%**

** Retail sales forecast, including energy efficiency, updated since Kingbird Solar Agenda Report.*

The Recurrent Energy Projects include the 20 MW Clearwater and the 15 MW Columbia Two solar generating facilities, both located in Mojave, CA in Kern County. The expected commercial operation date for both projects is December 31, 2014. The term of the contracts is twenty years from the Commercial Operation Date. The output of the projects will be sold to SCPPA under two separate but nearly identical power purchase agreements, then delivered to SCPPA members, including PWP through Power Sales Agreements with SCPPA. PWP will purchase a 17.143% share of the output of the

[2] See PWP's Integrated Resource Plan and associated documents at: http://cityofpasadena.net/waterandpower/IRP/

[3] A gigawatt-hour ("GWh") is equal to 1,000 megawatt-hours ("MWh")

Recurrent Energy Projects, equal to 6 MW, and the remaining output will be purchased by the cities of Riverside (74.286%) and Azusa (8.571%).

The projects were offered on August 12, 2013 into the SCPPA open Request for Proposal ("RFP") process. From among several hundred proposals submitted in the last two years, the Recurrent Energy Projects were two of the resources determined by PWP staff to be among the most competitively priced, highly viable, and best fit for PWP's portfolio. Some of the beneficial attributes of these projects and agreements include:

- **Category 1 Resource/Proximity to Load**:
  - The projects are located in California and Kern County, relatively close to PWP's load center, and near other solar projects PWP has contracted with in the area (i.e., Silverado and Kingbird). The Recurrent Energy Projects interconnect directly to the California Independent System Operator ("CAISO"). They will qualify for Portfolio Content Category 1[4] under the State's RPS.

- **Portfolio Fit**:
  - The portion of the projects purchased by PWP is a good match for PWP's renewable energy requirements. It is small enough to fit PWP's portfolio but large enough to make a significant impact in reducing PWP's RPS deficit for 2015 and beyond.
  - While the energy output can be variable due to solar insolation, cloud cover and other weather conditions, solar PV typically produces energy during the hours when PWP's peak loads are occurring, so production generally aligns well with PWP's electric demand.

- **Viability**:
  - The projects are in an advanced stage of development. Several initial milestones, such as site control, transmission interconnection studies, California Energy Commission pre-certification, and obtaining several environmental studies and permits, have already been achieved or are close to being achieved.
  - Solar PV is a proven renewable technology, with minimal development risk and numerous utility scale projects operating worldwide for many years.

- **Value**:
  - As a reflection of the general market, the contract price for these projects is lower than many of Pasadena's previous renewable energy and fuel contracts, including Silverado (solar) and biomethane fuel. In the current market, the price

[4] SBX1-2 includes a minimum purchase requirement for Category 1, and because it is the most valuable of the SBX1-2 Categories in meeting regulatory mandates, Category 1 products are typically the most expensive renewable energy products to purchase.

for these projects is comparable to renewable energy resources such as geothermal and wind power, but provides higher value as the solar energy is available during the day time when energy prices are typically higher, and solar has a more predictable generation profile than wind. See Table 2 for a comparison of the price of these contracts to other renewable energy contracts PWP has executed.

- In addition to renewable energy and environmental attributes, the projects will provide system resource adequacy benefits[5].

Table 2
Renewable Energy Contracts Price Comparison

Resource Name/Type	Contract Execution	Contract Energy Price[1] by Calendar Year ($/MWh)					
		2014	2015	2016	2017	2020	2025
Proposed Recurrent Energy Projects	**2013**	**-**	**$69.98**	**$69.98**	**$69.98**	**$69.98**	**$69.98**
Kingbird Solar	2013	-	-	$68.50	$68.50	$68.50	$68.50
Silverado Solar [2] *(+ $5.10/MWh for Resource Adequacy, if available)*	2012	-	$77.34*	$78.50*	$79.68*	$83.32*	$89.76*
WM Biomethane	2011	$94.92	$94.92	$94.92	$94.92	$94.92	-
Sequent Biomethane	2011	$94.92	$94.92	$94.92	$94.92	$94.92	-
EDF Biomethane	2011	$98.00	$98.00	$98.00	$98.00	$98.00	-
Milford Wind	2009	$70.94	$72.19	$73.45	$74.74	$78.73	$85.86
Ormat Geothermal Phase 2	2008	$82.01	$83.24	$84.49	$85.76	$89.67	$96.60
Chiquita Canyon LFG	2006	$65.25	$65.25	$65.25	$65.25	$65.25	$65.25
Ormat Geothermal Phase 1	2005	$64.77	$65.74	$66.73	$67.73	$70.83	$76.30
Iberdrola Renewables	2003	$53.50	$53.50	$53.50	$53.50	$53.50	-
2013 Market Forecast (brown power)		$43.99*	$46.19*	$48.50*	$50.92*	$58.95*	$75.23*

* *Price does not include Resource Adequacy Capacity.*
[1] *Contract prices exclude costs of transmission, losses, and integration fees*
[2] *All contract prices include Resource Adequacy, <u>except</u> Silverado and the Market Forecast, which is energy only.*

The proposed agreements are for energy, capacity, environmental attributes, and ancillary products and services from the Recurrent Energy Projects. The initial capacity factor[6] is anticipated to be approximately 34%. PWP's 6 MW share of the annual contract

[5] PWP is required to demonstrate to the CAISO that it controls or has contracted for a certain amount of System Resource Adequacy. A renewable resource that includes this attribute is more valuable to PWP than one without. To qualify, a resource must be "deliverable," as determined by transmission studies.

[6] Capacity Factor is calculated as the amount of expected energy production (in MWh) divided by the capacity (in MW) divided by the number of hours in the period (e.g., 8760 in a year).

quantity is estimated to produce approximately 18 GWh of energy in the projects' first year of operation, with production degrading at a rate of approximately 0.5% per year. The contracts are expected to provide approximately 1.6% of PWP's total annual energy requirements. The contract price for California Energy Commission certified delivered energy is $69.98 per MWh ("Contract Price") each year of the twenty (20) year contract term after the commercial operation date. Prior to the commercial operation date, any energy the projects might deliver will be purchased at 75% of the Contract Price.
The Recurrent Energy Projects are in an advanced stage of development and have a high probability of successful completion. Recurrent Energy has purchase option agreements that provide firm site control for both projects. Columbia Two has approved permits from the Kern County Board of Supervisors including certification of the Final Environmental Impact Report ("EIR"), rezoning of the project area to allow for solar development, and a Conditional Use Permit. RE Clearwater has an approved EIR and Recurrent anticipates the required Conditional Use Permit will be approved in December 2013. The projects will interconnect directly into the Windhub Substation via a shared 8-mile 66 kV tie line that is under construction. The projects will qualify for Resource Adequacy under the CAISO tariff as soon as they reach commercial operation. Recurrent Energy has a strong track record of successfully developing solar projects in the 5-20 MW size range internationally, including several projects in California and Kern County.

Like all other long-term commitments, the proposed agreements carry financial and compliance risks. Since the contracts carry no up-front capital or annual fixed-cost commitment, these risks are primarily related to the possibility that: (1) future alternative renewable resources may have a lower price and/or (2) the Recurrent Energy Projects do not ultimately get built, or once built, do not produce the output expected.

The agreements include the provision of Performance Security[7] to protect against Seller's failure to develop the project on time or at all, and daily liquidated damages for delays in meeting certain key milestones, such as the commercial operation date.

The proposed contact with SCPPA, a joint powers authority, is exempt from competitive bidding pursuant to City Charter Section 1002(h), and is exempt from competitive selection pursuant to Pasadena Municipal Code Section 4.08.049.A.3, contracts with other governmental entities. The SCPPA members participating in the Recurrent Projects, including PWP, utilize a competitive selection process to identify renewable resources with the best combination of price, performance, viability, and risk to meet their energy requirements.

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[7] Performance Security is equal to $970k for Clearwater and $725k for Columbia Two during the development period, beginning 10 days after the power purchase agreement execution date, and stepping up to $3.15 million for Clearwater and $2.35 million for Columbia Two upon commercial operation and for the remainder of the contract term. Performance Security can be in the form of letters of credit by qualified issuers, cash or combination of the two.

COUNCIL POLICY CONSIDERATION:

The proposed agreements are consistent with the City's Urban Accords Goals with respect to renewable energy and greenhouse gas emission reduction goals, the General Plan Energy Element, the City Council's Strategic Planning Goals, the 2012 Power Integrated Resource Plan and PWP's RPS Procurement Plan. The Projects will help PWP achieve regulatory compliance as well as City Council goals in a cost-effective manner.

ENVIRONMENTAL ANALYSIS:

The proposed agreements are determined to be exempt from the CEQA process pursuant to State CEQA Guidelines Section 15061(b)(3), the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA. The proposed action is for the City to enter into agreements with SCPPA to purchase power from the Recurrent Energy Projects, which are proposed for construction and operation in the County of Kern. The City of Pasadena does not have the authority to approve/entitle the Recurrent Energy Projects. Such authority rests with the County of Kern, and the County has prepared the CEQA documents to consider the environmental impacts of the projects. The City's proposed Power Sales Agreements do not commit the County to approving the Recurrent Energy Projects and, thus, no physical construction is contemplated, or would be authorized, by the actions proposed in this staff report.

FISCAL IMPACT:

The proposed Recurrent Energy Projects are expected to commence commercial operation in FY 2015. They are expected to produce approximately 18.2 GWh (PWP's share) of category 1 renewable energy in the first year at a cost of approximately $1.3 million. The annual production and cost is anticipated to decline by approximately 0.5% annually after the first year. The following table summarizes the net cost premium and rate impacts associated with PWP's renewable resource portfolio, before and after the proposed contracts.

Expected Cost or Rate Impact	Current	With Proposed Contracts (assuming no other rate changes)	Increase
Renewable Premium ($/year)	$8,500,000/year	$8,900,000/year	$400,000/year
Average Rate Impact of Renewable Premium ($/kWh)	$0.00730/kWh	$0.00764/kWh	$0.00034/kWh
Average Monthly Bill for 500 kWh/month customer ($/mo)	$87.72/mo	$87.89/mo	$0.17/mo
Renewable Premium Portion 500 kWh/month customer ($/mo)	$3.65/mo	$3.82/mo	$0.17/mo

All costs associated with this agreement will be recovered in the Energy Charge component of Pasadena's electric energy rates.

Respectfully submitted,

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