



PASADENA WATER AND POWER

# MEMORANDUM

April 9, 2018

**TO:** Honorable Mayor and City Council

**FROM:** Gurcharan Bawa, General Manager *G. Bawa*

**SUBJECT:** **AUTHORIZE THE GENERAL MANAGER TO ENTER INTO A CONTRACT WITH POWEREX CORP. FOR THE PURCHASE OF RENEWABLE ENERGY**

### Municipal Services Committee Recommendation:

On March 27, 2018, the Municipal Services Committee (“MSC”) approved the staff recommendation to enter into an eleven year contract with Powerex for the purchase of renewable energy.

The MSC requested follow-up information regarding the annual cumulative premium paid for all renewable energy contracts executed to date and the impact on rates, as well as a comparison of forecasted resources and load to determine resource procurement needs. This information is provided herein.

### Annual Cost Impact of Renewable Resources

Table I summarizes the estimated cumulative impact for calendar year 2018 of the existing long-term renewable energy resources approved by the City Council and procured to date. Individual contracts are summarized in Table II.

**Table I – Impact of Long-Term Renewable Resource Contracts**

<b>Cost Consideration</b>	<b>Calendar Year 2018 Amount or Impact</b>
Current Long-Term Renewable Contract Prices	Individual contract prices range from \$53.50 to \$87.04/MWh The weighted-average price is \$72.6/MWh
Renewable Premium (Contract Price less Forecast Energy Value)	Estimated individual premiums range from \$21 to \$55/MWh The weighted-average forecasted energy premium is \$33/MWh The total premium for CY 2018 is approximately \$10 million
Rate Impact of Renewable Premium	The collective rate impact is approximately 1¢/kWh This equates to \$5 per month for 500 kWh per month usage

For all existing contracts, the renewable premium changes over time as a function of the contract price versus energy market prices applicable to the resource characteristics (delivery location and hourly output variations). By contrast, the proposed contract has a fixed premium of \$16.30, which is lower than the current premium associated with any current long-term renewable resource contracts.

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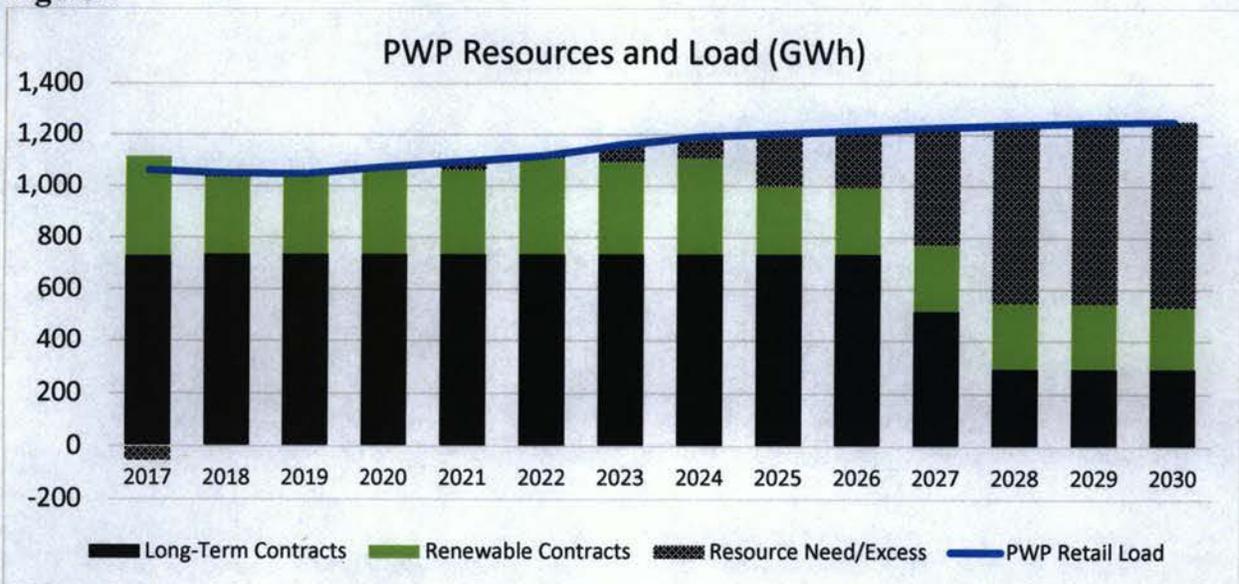
**Table II – Existing Long-Term Renewable Resource Contract Summary**

Resource Name	Contract Signed	Resource Type	Contract Price (\$/MWh)		Contract Energy (GWh) and Cost in 2018		
			2018	Escl	Energy	% of Sales	Cost (\$)
Ibedrola Renewables	2003	Wind	\$53.50	Flat	13.0	1.2%	\$694
Chiquita Canyon LFG	2006	LFG	\$65.25	Flat	37.3	3.6%	\$2,434
Ormat Geothermal 2	2008	Geothermal	\$87.04	Flat	15.9	1.5%	\$1,388
Milford Wind	2009	Wind	\$76.04	1.75%	10.2	1.0%	\$779
Columbia II	2013	Solar	\$69.98	Flat	7.6	0.7%	\$535
Kindbirg Sola	2013	Solar	\$68.50	Flat	58.9	5.6%	\$4,035
LACSD Puente Hills	2014	LFG	\$80.00	Flat	75.9	7.2%	\$6,073
Summer Solar	2014	Solar	\$71.25	Flat	15.9	1.5%	\$1,130
Antelope Big Sky Ranch	2014	Solar	\$71.25	Flat	15.9	1.5%	\$1,130
<b>TOTAL</b>			<b>\$72.60</b>		<b>250.7</b>	<b>23.9%</b>	<b>\$18,199</b>

**Estimate of Forecast Energy Supply and Demand Balance**

Figure 1 shows forecast retail load (electric energy sales) and energy supply from existing long-term resources (including the proposed Powerex Contract). Pasadena Water and Power (“PWP”) will not have a noticeable need for additional energy resources until 2023. This analysis assumes that PWP will continue to use less than one-half of its entitlement to coal energy from the existing contract with Intermountain Power Plant (“IPP”). Starting in July 2027, after the IPP contract expires, there will be a significant need for additional energy supply. Determining the appropriate size and types of resources to fill this gap will be a primary focus of the 2018 Integrated Resource Plan.

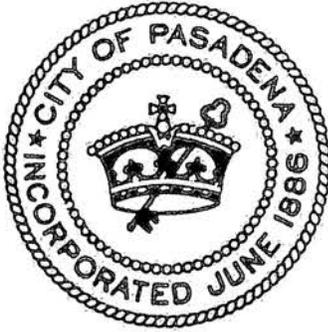
**Figure 1**



This analysis assumes a nominal load increase, due primarily to transportation electrification. PWP’s actual energy sales and corresponding resource need may be higher or lower than shown. Given this

uncertainty, and the lack of resource need over the next five to seven years, it would not be prudent to lock in additional fixed priced energy contracts at this time.

The chart shows that PWP had excess energy supply in calendar year 2017, due primarily to short term renewable energy procurement for state compliance requirements.



# Agenda Report

April 9, 2018

**TO:** Honorable Mayor and City Council

**THROUGH:** Municipal Services Committee (March 27, 2018)

**FROM:** Water and Power Department

**SUBJECT: AUTHORIZE THE GENERAL MANAGER TO ENTER INTO A CONTRACT WITH POWEREX CORP. FOR THE PURCHASE OF RENEWABLE ENERGY**

## **RECOMMENDATION:**

It is recommended that the City Council:

1. Find that the proposed action is exempt from the California Environmental Quality Act ("CEQA") pursuant to State CEQA Guidelines Section 15061(b)(3) (General Rule); and
2. Authorize the General Manager, to enter into an eleven year Contract with Powerex Corp. ("Powerex") for the purchase of renewable energy in an amount not to exceed \$12,932,000, pursuant to Resolution No. 4184-2, which grants the General Manager authority to execute contracts without public bidding for purchases, sales, exchanges, transmission or storage of electric energy or capacity; and pursuant to Resolution No. 9063, which grants the General Manager authority to enter into agreements for the purchase of Renewable Energy Credits ("RECs"). As a result, Competitive Bidding and Competitive Selection are not required.

## **EXECUTIVE SUMMARY:**

The proposed renewable energy purchase contracts will support efforts by the Pasadena Water and Power Department ("PWP") to meet the State of California's mandatory Renewable Portfolio Standard ("RPS") requirements at the lowest cost consistent with good utility practice. The proposed contract is consistent with the City's RPS Procurement Plan and RPS Enforcement Program (collectively, "Pasadena RPS Policy"), which was approved by the City Council on January 29, 2018.

In order to proactively minimize the cost to ratepayers and to meet the increase in RPS requirements, it is recommended to procure these resources now. Resolution No. 4184-2 grants the General Manager authority to execute electric energy, capacity and transmission contracts and Resolution No. 9063 grants the General Manager

authority to enter into agreements for certificates, including RECs; however, the City Council approved Energy and Credit Risk Management Policy for PWP ("PWP Risk Policy") requires City Council approval on contracts that are longer than three years in duration. Since the Powerex contract is eleven years in duration, City Council authorization is required, in order to comply with the PWP Risk Policy.

The proposed contract with Powerex will provide Portfolio Content Category ("PCC") 1 and PCC 2 bundled renewable energy and RECs over the course of eleven calendar years, beginning in 2020 and ending in 2030. PWP will receive approximately 830,000 MWh of bundled renewable energy and RECs, which is equivalent to approximately 6-7% percent of PWP's projected retail load over that time period. The total includes 770,000 MWh of PCC 1 and 60,000 MWh of PCC 2 bundled renewable energy and RECs. By incorporating market index pricing plus a fixed renewable premium, the recommended contract significantly limits PWP's market price risk and potential for experiencing ongoing above-market energy costs or stranded investment.

**BACKGROUND:**

Details on the Compliance Period ("CP") RPS requirements are listed in the 2018 Pasadena RPS Policy. Overall, PWP must comply with the following:

**Table 1: State RPS Requirements**

Pasadena Water & Power California Energy Commission-Compliant RPS Procurement Plan Requirements by Calendar Year ("CY")						
California RPS Mandatory Procurement Requirement (% of Net Retail Sales) <sup>(1) (2)</sup>	Compliance Period 3		Compliance Period 4	Compliance Period 5	Compliance Period 6	Compliance Period 7+
	YEAR	%	CY: 2021-2024  40% by 12/31/2024	CY: 2025-2027  45% by 12/31/2027	CY: 2028-2030  50% by 12/31/2030	CY: 2031+  (3 year blocks) 50%
	2017	27.0%				
	2018	29.0%				
	2019	31.0%				
2020	33.0%					
PCC 1 Minimum:	75% or more of Net Procurement Requirement					
PCC 2 Maximum:	25% or less of Net Procurement Requirement					
PCC 3 Maximum:	10% or less of Net Procurement Requirement					
Long-Term Contracts:	N/A	At least 65% of contracts must be long-term contracts (at least 10 years in duration)				

The California RPS includes a mix of renewable energy product types, classified into three PCC's. PCC 1, the most expensive type of renewable energy, includes energy "bundled" with the RECs, and delivered together into a California balancing authority area such as the California Independent System Operator ("CAISO"). The California RPS requires that, beginning in 2017, at least seventy-five percent of PWP's state-mandated renewable energy procurement must be in the form of PCC 1 resources. PCC 1 resources currently sell at a premium of \$13 - \$19 per MWh above the market price of energy for long-term contracts (longer than fifteen years). Powerex has offered PWP a shorter term of eleven years, which limits exposure to changes in the regulatory

landscape, changes in retail load, and secures a price which limits market exposure and leaves room to sign additional contracts, as needed.

PCC 2 product RECs are separated from the energy generated at the original RPS certified facility and may be attached to incremental energy from another facility. Both the RPS-certified facility and the resource providing the incremental energy, must be interconnected to a transmission system within the Western Electricity Coordinating Council ("WECC") service territory. PCC 2 products are currently traded at a premium of approximately \$5 to \$8 per MWh above the market price of energy, for short-term energy (one year or less). This price point is based on the current compliance period. PWP was unable to find other comparable options for anything beyond CY 2020. Beginning in 2017, procurement of PCC 2 RECs under California RPS is limited to no more than twenty-five percent of the RPS target for any given year. In order to minimize the cost exposure to customers and meet the minimum requirement of the California RPS, it is necessary to secure PCC 1 and PCC 2 resources now, as many entities are facing an RPS shortage in the future, including PWP. This is a result of the termination of existing contracts and the increase in RPS requirements, post 2020. RECs for PCC 1 resources may be carried over for use in future calendar years provided that they are retired within 36 months of generation. This provides flexibility in maximizing this contract. As mentioned earlier, the proposed Powerex contract is expected to fill approximately 6%-7% of PWP's need for the future compliance periods.

Annually, PWP will receive 70,000 MWh of PCC 1 bundled renewable energy and RECs from CY 2020 through CY 2030. PWP will receive variable amounts of PCC 2 bundled renewable energy and RECs, starting with 5,000 MWh annually in CY 2020, 15,000 RECS in CY 2021, 40,000 in CY 2022 and 0 MW from CY 2023-2030.

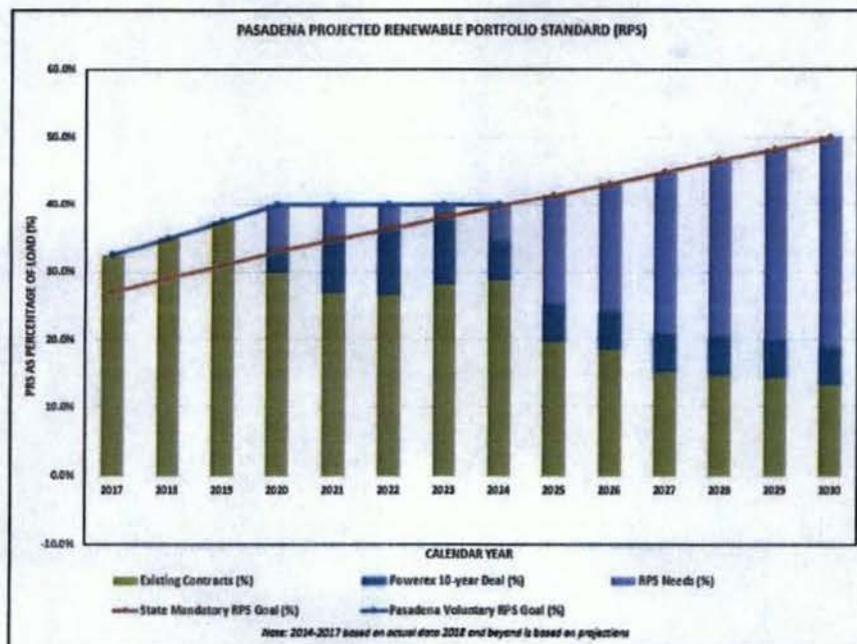
The purchase price for the renewable energy will be index price plus the price of the REC. The index price will be based on the CAISO market price at the point of delivery. The CAISO will pay PWP the index price for the renewable energy delivered to the grid by Powerex and PWP will pay Powerex the index price received from the CAISO plus the REC prices listed below. Effectively, the total net cost to PWP will be the Annual REC Premium indicated in Table 2.

**Table 2: Powerex Contract Annual Cost**

Calendar Year	PCC 1			PCC 2			Total	
	Quantity	REC Price per Unit	Annual PCC 1 REC Cost	Quantity	REC Price per Unit	Annual PCC 2 REC Cost	Quantity	Annual REC Premium
2020	70,000	\$16.30	\$1,141,000	5,000	\$6.35	\$31,750	75,000	\$1,172,750
2021	70,000	\$16.30	\$1,141,000	15,000	\$6.35	\$95,250	85,000	\$1,236,250
2022	70,000	\$16.30	\$1,141,000	40,000	\$6.35	\$254,000	110,000	\$1,395,000
2023	70,000	\$16.30	\$1,141,000				70,000	\$1,141,000
2024	70,000	\$16.30	\$1,141,000				70,000	\$1,141,000
2025	70,000	\$16.30	\$1,141,000				70,000	\$1,141,000
2026	70,000	\$16.30	\$1,141,000				70,000	\$1,141,000
2027	70,000	\$16.30	\$1,141,000				70,000	\$1,141,000
2028	70,000	\$16.30	\$1,141,000				70,000	\$1,141,000
2029	70,000	\$16.30	\$1,141,000				70,000	\$1,141,000
2030	70,000	\$16.30	\$1,141,000				70,000	\$1,141,000
Estimated Maximum Contract Total	770,000		\$12,551,000	60,000		\$381,000	830,000	\$12,932,000

**Projected RPS Impact of the Powerex Contract to the PWP RPS Portfolio**

This contract will add 6-7% RPS to PWP's annual RPS portfolio. The chart below shows the impact of this contract to PWP's RPS portfolio. As mentioned earlier, PWP can carryover PCC 1 RECS for a total of 36 months. PWP plans to carryover RECs to ensure RPS compliance from CY 2021-2023.



**Selection Process**

A selection process was used that resembled, but did not completely conform to the competitive selection process set forth in P.M.C. 4.08.049. Through its membership with the Southern California Public Power Authority ("SCPPA"), PWP solicited offers for PCC 1 and 2 resources through a SCPPA Request for Proposal ("RFP"), for Renewable Energy Resources and Energy Storage Solutions and by directly contacting several credible renewable facility owners, marketers, and brokers. SCPPA would not be a party to the proposed contract.

SCPPA issued its RFP on January 3, 2017, with an update on January 12, 2018. Through the SCPPA RFP, there were no resources that met PWP's specific needs (shorter term, index pricing, etc.). In fact, a majority of the resources were for a contract term of twenty years or longer. As a result, PWP reached out to counterparties for shorter term contracts and Powerex was the only counterparty willing to contract for an eleven year term at current market prices.

PWP is not aware of any local businesses that offer RECs or any other wholesale energy supplies or associated environmental attributes and therefore did not conduct any local outreach.

PWP routinely purchases short-term energy projects from Powerex, and occasionally sells energy to Powerex.

**Prior Contracts**

**Table 3: List of Recent Transactions with Powerex**

Counter Party	Date Executed	RPS PCC	Quantity (MWh)	Term	Total REC Premium
Powerex	August 11, 2016	PCC 1	17,500MWh/Year	January 1, 2017 to December 31, 2020	\$976,500
		PCC 2	35,000MWh/Year		\$630,000
	January 31, 2017	PCC 1	7,500MWh	February 2, 2017 to December 31, 2017	\$112,125
		PCC 2	5,000MWh		\$26,250

**COUNCIL POLICY CONSIDERATION:**

The proposed agreement is consistent with the City's Urban Environmental Accords goals with respect to increasing renewable energy and reducing greenhouse gas emissions, the General Plan Energy Element, and the City Council's Strategic Planning Goals.

**ENVIRONMENTAL ANALYSIS:**

The approval of the contract is to purchase renewable energy and RECs from existing Powerex pool of renewable resources in Washington State and British Columbia, all of which are (or are pending to be) CEC certified as RPS-eligible. This action is determined to be exempt from CEQA for the following reasons:

Since this contract is based on existing resources, there is no construction or other direct physical change in the environment; the use of renewable energy would have a beneficial effect on the environment by reducing greenhouse gas emissions and air pollutants; therefore it is exempt from CEQA under the general rule set forth in CEQA Guidelines section 15061(b)(3), 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.

**FISCAL IMPACT:**

The maximum cost of this action will be \$12,932,000 for a period of eleven fiscal years starting fiscal year ("FY") 2020. Funding for this action will be addressed in future appropriations to the Power Operating budget from FY 2020 to FY 2031. The potential rate impact is listed below:

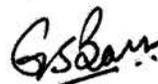
**Table 4: Powerex Contract Potential Rate Impact**

Expected Cost or Rate Impact	Increase
Powerex Renewable Premium (Avg \$/year)	\$1,175,000/year
Average Rate Impact of Powerex Renewable Premium (\$/kWh)	\$0.000994/kWh
Current Average Monthly Bill for 500kWh/month customer (\$/mo)*	\$94.19/mo
Bill Impact on 500kWh/month customer (\$/mo) based on current rates	Approximately \$0.497/mo

\*The monthly bills do not include any potential changes in electric rates that have been proposed or may occur in the future.

There will be no anticipated impact to other operational programs or capital projects as a result of this action.

Respectfully submitted,



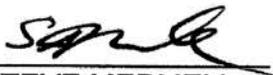
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