



# City of Columbia

701 East Broadway, Columbia, Missouri 65201

Department Source: City Utilities - Water and Light

To: City Council

From: City Manager & Staff

Council Meeting Date: January 16, 2018

Re: Solar Project Power Purchase Agreement with Truman Solar, LLC

## Executive Summary

Staff has prepared for Council consideration an ordinance authorizing the City Manager to execute an agreement with Truman Solar, LLC, for the purchase of solar energy. Delivery of solar energy, from a 10 MW solar facility to be built by Truman Solar, LLC, is scheduled for commercial operation on April 1, 2019 at a price of \$44.81 per MWh. The generation source would consist of a solar array attached directly to the City's 13.8 kV distribution system built by Truman Solar, LLC. It is estimated that the additional solar energy will increase the energy from renewable sources by an additional 1.9% of total energy required.

## Discussion

As part of the Water & Light Strategic Plan, one of the Department objectives is to regularly evaluate renewable energy resources. In March of 2017, the City issued RFP 72/2017 for the purchase of solar energy. The proposed agreement is the result of the evaluation process and contract negotiations.

Staff has finalized contract details with Truman Solar, LLC, for a photovoltaic power purchase agreement. The term of the contract is for 30 years. Contract price is \$44.81 per MWh with no escalation in price for the life of the contract.

The size of the solar field once constructed is expected to be 10 MW's AC. The field is proposed to be a single-axis tracking system which should achieve an annual capacity factor of about 25%. Initial annual energy production is estimated at 23,000 MWh's for a first year cost of just over \$1 million. An annual degradation rate of 0.05% is anticipated. Total cost of the energy produced from the 30 year contract is estimated at \$28.8 million. The contract will be paid out of the annual purchased power budget which is \$68,500,000 for the current fiscal year.

The solar field will be interconnected directly with the City's 13.8 kV distribution system at the existing Rebel Hill substation. The energy from this system will be "behind-the-meter" and will reduce the City's load in the MISO market. The City will be required to extend two Rebel Hill feeders circuits to interconnect with the solar field at an estimated cost of \$1.4 million. Funding for the distribution extension required to connect this project can be brought forward as an appropriation at a later date and/or included within the FY2019 budget. For the life of the contract, this expense will add approximately \$2.10 per MWh to the total cost.

Based on information from the 2016 Renewable Energy Report, production profiles from existing solar contracts and our current renewable rate impact methodology, it is estimated



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this contract will have a .17% impact on rates and provide Columbia an additional 1.9% of renewable energy. Because the existing solar capacity credit is based on a fixed array, a new production profile and capacity credit will have to be developed that incorporates the tracking capability of this field. This will not occur until sufficient data can be collected.

At their January 3<sup>rd</sup> 2018 meeting, the Water & Light Advisory Board recommended approval of this contract.

Current City ordinance details the purchase of electricity generated from eligible renewable energy sources at the following levels:

- 2% by 2008
- 5% by 2013
- 15% by 2018
- 25% by 2023
- 30% by 2029

## Fiscal Impact

Short-Term Impact: Initial annual energy production is estimated at 23,000 MWh's for a first year cost of just over \$1 million. The contract will be paid out of the annual purchased power budget.

Long-Term Impact: Total cost of the energy produced from the 30 year contract is estimated at \$28.8 million.

## Strategic & Comprehensive Plan Impact

### Strategic Plan Impacts:

Primary Impact: Infrastructure, Secondary Impact: Not Applicable, Tertiary Impact: Tertiary

### Comprehensive Plan Impacts:

Primary Impact: Infrastructure, Secondary Impact: Livable & Sustainable Communities, Tertiary Impact: Not Applicable

## Legislative History

Date	Action
None	None

## Suggested Council Action

Staff recommends Council adopt an ordinance authorizing the City Manager to execute an agreement with Truman Solar, LLC, for the purchase of solar energy.