



RIVERSIDE PUBLIC UTILITIES

Board Memorandum

BOARD OF PUBLIC UTILITIES

DATE: DECEMBER 12, 2016

ITEM NO: 10

SUBJECT: **AMENDED AND RESTATED POWER PURCHASE AGREEMENT BETWEEN SOLAR STAR CALIFORNIA XXXIX, LLC AND THE CITY OF RIVERSIDE – SAN BERNARDINO WELLS SOLAR PHOTOVOLTAIC PROJECT FOR 25 YEARS AT AN ESTIMATED NET SAVINGS OF \$17.9 MILLION OVER THE TERM OF THE AGREEMENT**

ISSUE:

Recommend that the City Council approve the Amended and Restated Power Purchase Agreement between Solar Star California XXXIX, LLC and the City of Riverside for a cumulative 4.50 megawatt renewable solar photovoltaic energy generation to be located on City-owned Scheuer, Garner, and Cooley Wells properties in the County of San Bernardino.

RECOMMENDATIONS:

That the Board of Public Utilities recommend that the City Council:

1. Approve the 25-year Amended and Restated Power Purchase Agreement between Solar Star California XXXIX, LLC and the City of Riverside to design, construct, operate and maintain a cumulative 4.50 megawatt solar photovoltaic energy generation to be located on the Well Sites;
2. Authorize the City Manager, or his designee, to execute the Amended and Restated Power Purchase Agreement, as well as any future amendments or extensions to the Amended and Restated Power Purchase Agreement under the terms and conditions substantially similar or superior to this Amended and Restated Power Purchase Agreement;
3. Authorize the City Manager, or his designee, to execute any documents necessary to administer the Amended and Restated Power Purchase Agreement that are consistent with the established policies by the City Council; and
4. Authorize the City Manager, or his designee, to terminate the Amended and Restated Power Purchase Agreement for circumstances provided in the Amended and Restated Power Purchase Agreement.

BACKGROUND:

On April 2 and 21, 2015, the Board of Public Utilities and City Council, respectively, approved a Power Purchase Agreement (2015 PPA) with Solar Star California XXXIX, LLC (Solar Star) to develop solar photovoltaic (PV) facilities at four City-owned sites: Scheuer, Garner, Gage and Tippecanoe (Four Well Sites) as depicted in Figure 1. The resulting 2015 PPA reflected the balance of benefits, burdens, and risks to develop the Four Well Sites based on factors known at the time. The basic terms of the 2015 PPA are summarized in Table 1 below.

Table 1 – 2015 PPA Terms and Benefits Summary

Attribute	2015 PPA
Capacity	5.50 megawatt (MW)
Rate	\$53.50/megawatt-hour (MWh)
Escalation	3 Percent
Term	25 Years
Buyout Option	Year 6 & 10
Commercial Operation Date (COD)	April 1, 2016
Outside COD	October 1, 2017
Anticipated Net Present Value Savings	\$23.5 Million
Sites to be Developed	Four Well Sites
Financial Penalty Cap	\$250,000
Daily Damage Penalty	\$2,500/day

The 2015 PPA also provided for a revision to or termination should unforeseen conditions arise that altered this balance in a manner that was unacceptable to Solar Star. As set forth below, such conditions arose and Solar Star asked for a renegotiation of the project sites, completion dates, and pricing. Staff recommends such revisions.

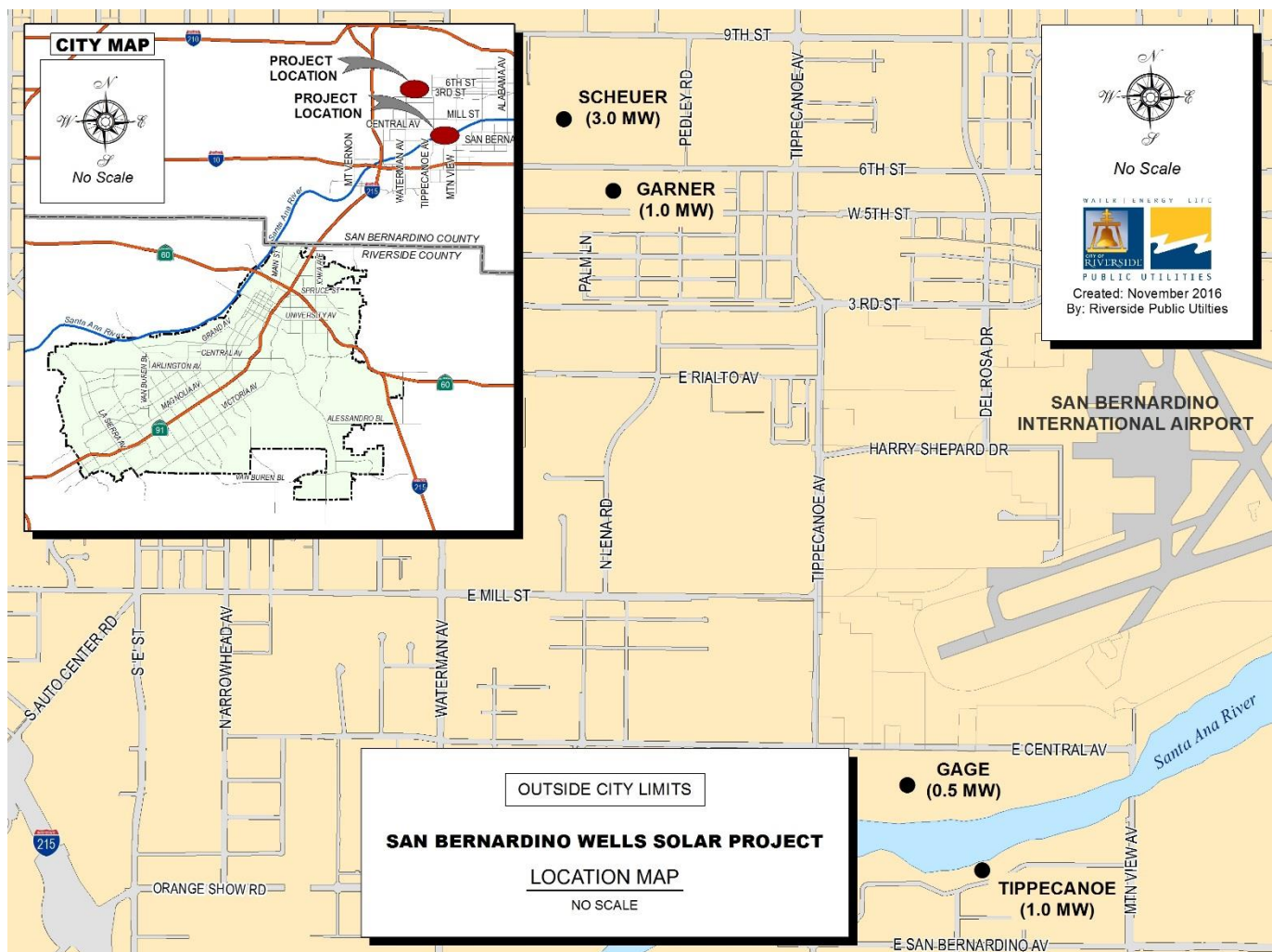


Figure 1: Location Map – Four Well Sites

Following the 2015 PPA execution, Solar Star proceeded with the project design, environmental review, and permitting activities. The environmental review and permitting process resulted in unforeseen conditions that affected both project cost and schedule beyond what was anticipated in the 2015 PPA.

Specifically, the environmental review process revealed unforeseen, adverse impacts to biological resources at the Gage and Tippecanoe sites. These two sites were slated to produce 0.5 MW and 1.0 MW, respectively. Accordingly, Staff and Solar Star agreed to abandon these two sites, resulting in an overall project capacity reduction from 5.5 MW to 4.0 MW. The request for proposal (RFP) allowed for flexibility in utilizing various City-owned properties within Southern California Edison (SCE) service area for solar development. As such, the 2015 PPA gave Solar Star the flexibility to recapture 0.5 MW at the Cooley Wells site. The total PV generation is expected to be approximately 4.50 MW.

In addition to the environmental impacts, the permitting process resulted in costly street improvements, landscape, and electrical underground conditions from the City of San Bernardino associated with the Scheuer and Garner Well sites. The anticipated increase in project cost due to these conditions was approximately \$750,000. These conditions were unforeseen at the time the 2015 PPA was being negotiated. In an attempt to mitigate these cost impacts, Staff engaged the City of San Bernardino and were successful in eliminating the electrical underground condition, minimizing the landscape requirements, and reducing the street improvements cost. The total San Bernardino cost impact was reduced to approximately \$162,000.

The Garner and Cooley Well sites will be served under SCE's Net Energy Metering Aggregate (NEMA) tariff whereby the PV system is connected on the customer side of the meter and the PV energy produced will be utilized onsite.

The Scheuer Well site will be serviced under SCE's Renewable Energy Self-Generation Bill Credit Transfer (RES-BCT) tariff whereby, the PV energy produced will be offset against onsite and offsite energy used by RPU facilities within SCE's service territory. The PV system will be connected directly to SCE's grid in conformance with SCE requirements. In order for SCE to analyze project impacts associated with the new grid connection, they prepared a System Impact Study (SIS). SCE completed the Scheuer SIS in mid-November 2015 and required costly system upgrades estimated at \$500,000. Furthermore, Solar Star anticipates SCE system upgrades to delay energizing the PV system by approximately 14 months. Based upon information published by SCE, these upgrades were unforeseen and their cost and schedule impacts were not anticipated. The 14 months delay by SCE surpasses the outside COD of October 1, 2016 as specified in the 2015 PPA.

In October 2015, Solar Star acknowledged that continued development of the Well Sites as originally contemplated in the 2015 PPA was becoming financially infeasible due to the unforeseen cost and schedule impacts outlined above. In December 2015, Solar Star began working with Staff to amend the 2015 PPA in order to rebalance the project benefits and risks. The resulting negotiations culminated in the Amended and Restated Power Purchase Agreement (Amended PPA). A comparison of the basic terms between the 2015 PPA and Amended PPA are summarized in Table 2 below.

Table 2: PPA Terms and Benefits Summary Comparison

Attribute	2015 PPA	Amended PPA	Difference
Capacity	5.50 MW	4.50 MW	Capacity Reduced by 1 MW
Rate	\$53.50/MWh	\$57.75/MWh	8 Percent Rate Increase
Escalation	3 Percent	3 Percent	Unchanged
Term	25 Years	25 Years	Unchanged
Buyout Option	Year 6 & 10	Year 6 & 10	Unchanged
COD	April 1, '16	Garner & Cooley – Oct. 23, '17 Scheuer – Dec. 31, '17	Scheduled Extended
Outside COD	Oct. 1, '17	Garner & Cooley – Dec. 23, '17 Scheuer – March 12, '18	Scheduled Extended
Anticipated Net Present Value (NPV) Savings	\$23.5 Million at 5.5 MW	\$17.9 Million at 4.5 MW	\$5.6 Million Reduction in NPV Savings
Sites to be Developed	Four Well Sites	Scheuer, Garner & Cooley Sites	Removed Gage & Tippecanoe, added Cooley
Financial Penalty Cap	\$250,000	\$625,000	Increase Cap by \$375,000
Daily Damage Penalty	\$2,500/day	\$1,500/day for NEMA Sites \$3,500/day for RES-BCT Site	Increase total daily penalty by \$2,500/day

Staff recommends approval of the Amended PPA based on Solar Star's revised development plan, new schedule and revised, but still competitive, price. Solar Star has significant experience as demonstrated on the 7.5 MW Tequesquite PV project. Despite a significant permitting and regulatory process, the Tequesquite PV project was completed on time and has been providing renewable power since September 2015.

The Amended PPA proposes to develop three sites as depicted in Figures 2, for a total estimated PV generation of 4.50 MW.

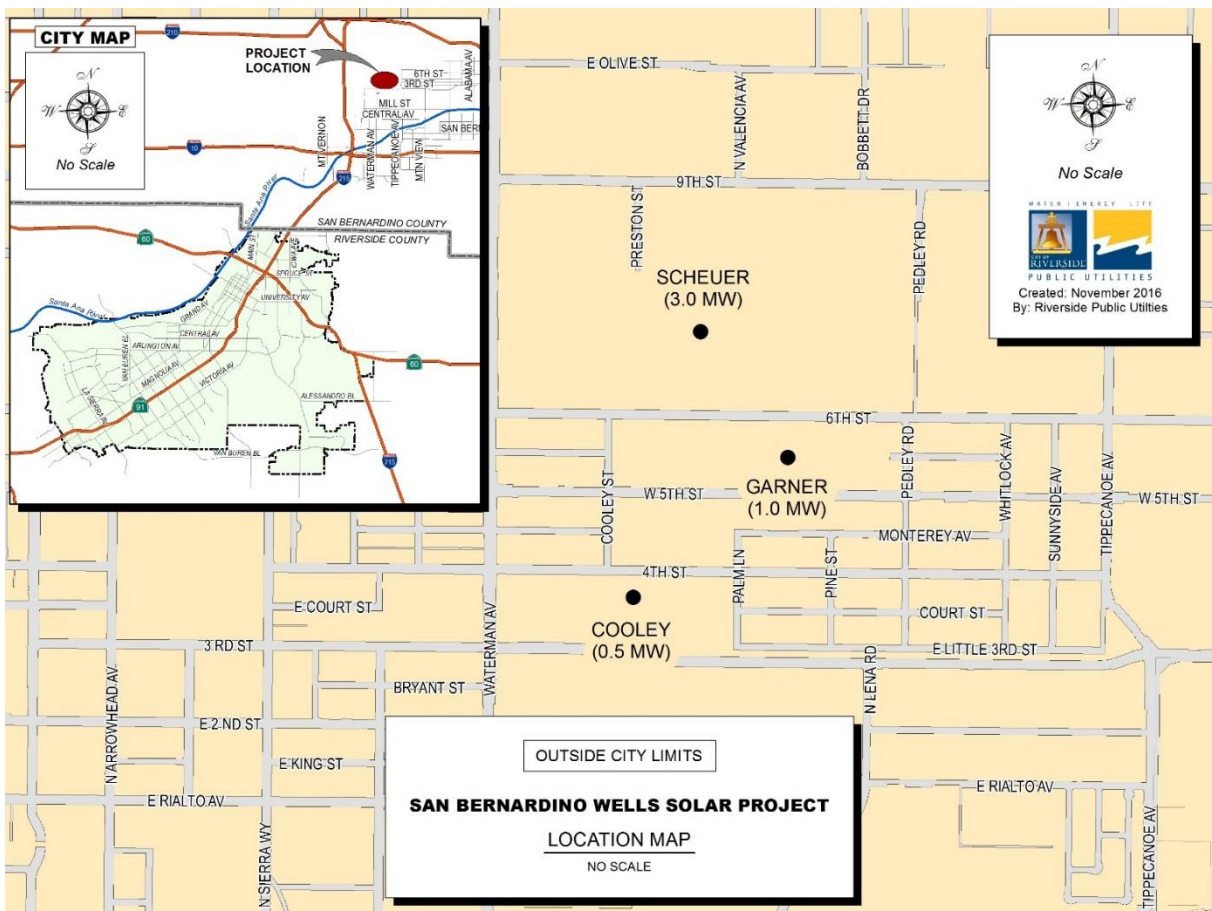


Figure 2: Project Location

The San Bernardino Well Solar Project and the resulting Amended PPA have the following terms and characteristics:

Seller's Experience: Solar Star California XXXIX, LLC is a wholly owned, direct subsidiary of SunPower Corporation, an industry leader in designing and manufacturing high-quality and high-efficiency solar PV modules, and has developed over 120 utility-scaled and 100,000 residential PV projects, including Riverside's 7.5 MW Tequesquite Solar project.

Change in Project Site Locations: The project will be located on three different City-owned Well Sites in the County and City of San Bernardino. The sites are maintained by the Public Utilities' Water Division, and will be developed by Solar Star as outlined in the Amended PPA. The Project site locations were modified from the 2015 PPA. The Gage and Tippecanoe sites were removed and the Cooley Well site was incorporated.

Interconnection Responsibility Remains Unchanged: The project will interconnect to SCE's distribution system. Solar Star will be responsible for the interconnection and associated costs, including any equipment required by SCE. The interconnection responsibilities remain unchanged from the 2015 PPA.

CEC Certification Responsibility Remains Unchanged: The developer is responsible for obtaining project certification as an eligible renewable resource by the California Energy Commission (CEC), and for registering the Renewable Energy Credits (REC) and transferring REC ownership to RPU. The CEC Certification responsibilities remain unchanged from the 2015 PPA.

Postponing the Commercial Operation Date (COD): The term of the Amended PPA remains at 25-years commencing the month of January following the RES-BCT COD - anticipated by December 31, 2017. However, with the extension of the COD date, the Amended PPA is expected to expire approximately two years later than anticipated in the 2015 PPA. Solar Star is responsible for the CEQA and permitting process. The Amended PPA contains protections for Solar Star due to unforeseen, insurmountable or cost-prohibitive permitting issues, further SCE energizing delays, as well as protections for RPU for Delay Damages, including termination provisions if COD is not obtained by certain milestone dates.

Buyout Option Remains Unchanged: The City will have two opportunities to acquire ownership: at COD anniversary year 6 and at year 10 of the Amended PPA term. It is anticipated that the City would consider purchasing the San Bernardino Wells Solar Project if the project performance is superior and economically favorable to the City. The purchase option remains unchanged from the 2015 PPA.

Increase in PPA Pricing: The all-in price (energy, capacity and environmental attributes) is \$57.75/MWh escalating at 3% per year, with a levelized price of \$78.20/MWh for the full term of the Amended PPA. The price is about 54% lower than RPU's current retail rate paid to SCE for FY 2016/17. Solar Star will guarantee the all-in price to RPU regardless of whether Solar Star receives any solar incentives. The pricing was increased from \$53.50/MWh to \$57.75/MWh in year one or about 8.0% from the 2015 PPA. This increase was due to unforeseen environmental, permitting and SCE System upgrade impacts. The project design is complete and Solar Star has mitigated these impacts to a point where staff feels this pricing fairly balances the unforeseen impacts identified after the 2015 PPA execution and rebalances the project benefits, burdens, and risks to develop the Well Sites. The Amended PPA rate, when compared to the 2015 PPA, reduces RPU's anticipated net present value savings over the life of the project from \$18.8 million to \$17.9 million or by approximately \$0.9 million as summarized in Table 3.

Table 3: Pricing Summary

PPA	MWh Rate	Escalation Rate	Levelized Price	PPA Net Present Value	Ave. % Below SCE Rate Savings
2015 PPA	\$53.50/MWh	3%	\$72.40/MWh	\$18.8 million at 4.5 MW	62%
Amended PPA	\$57.75/MWh	3%	\$78.20/MWh	\$17.9 million at 4.5 MW	59%

Increase to Mitigation of Development Risk: The Amended PPA includes enforceable development milestone dates with financial penalties of \$1,500/day for NEMA Sites (Garner and Cooley) or 3,500/day for RES-BCT Site (Scheuer), if dates are missed. The City retains its right to unilaterally terminate the Amended PPA. The financial penalty cap was increased from \$250,000 to \$625,000 and the development surety was increased from \$187,500 to \$375,000 in the Amended PPA. Both parameters provide RPU greater leverage to ensure successful project completion.

Performance Guarantee Remains Unchanged: The Amended PPA includes an enforceable annual performance guarantee to generate a minimum of 85% of the Annual Contract Quantity as defined in the Amended PPA with financial penalties, or in more severe cases, the City may unilaterally terminate the Amended PPA. The performance guarantee remains unchanged from the 2015 PPA.

Sharing of Regulatory Costs Remains Unchanged: Solar Star will share in potential regulatory costs, up to \$30,000/year, with a maximum cap of \$200,000 over the term of the PPA, to address future laws or regulations that negatively impact the economic value of this resource (e.g., PV projects are no longer considered to be a renewable resource). The sharing of regulatory costs remains unchanged from the 2015 PPA.

Site Restoration Remains Unchanged: Solar Star will be responsible, at its own costs, to restore the sites to their original conditions (with wear and tear allowance) at the end of the Amended PPA provided that Riverside does not exercise its buyout option. The site restoration responsibility remains unchanged from the 2015 PPA.

FISCAL IMPACT:

The current annual cost of power from SCE for the Well Sites is approximately \$1.8 million which is currently reflected in the Water Division's operating budget Account No. 6200000-422200. The generated solar power will not offset 100% of the Well Site electrical load. The estimated cost of power under the Amended PPA is detailed in Table 4 with an annual escalation of 3.0% per year starting in 2019.

Table 4: Estimated Power Cost

Fiscal Year	Estimated PPA Power Cost
2017/18	\$433,500
2018/19	\$690,000

The estimated net present value savings for the term of the PPA is anticipated to be \$17.9 million.

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Approved by: John A. Russo, City Manager
Approved as to form: Gary G. Geuss, City Attorney

Concurs with: Daniel E. Garcia, Public Utilities Interim Assistant General Manager/Resources

Certifies availability of funds: Laura Chavez-Nomura, Public Utilities Assistant General Manager/Finance

Attachments: 1. Amended and Restated Power Purchase Agreement between Solar Star California XXXIX, LLC and City of Riverside
2. Presentation