Relates to Item Nos. 6/B and 19

SHARED SOLAR PILOT PROGRAM DETAILS & RATE DESIGN

SEPTEMBER 25, 2018

LA DWP

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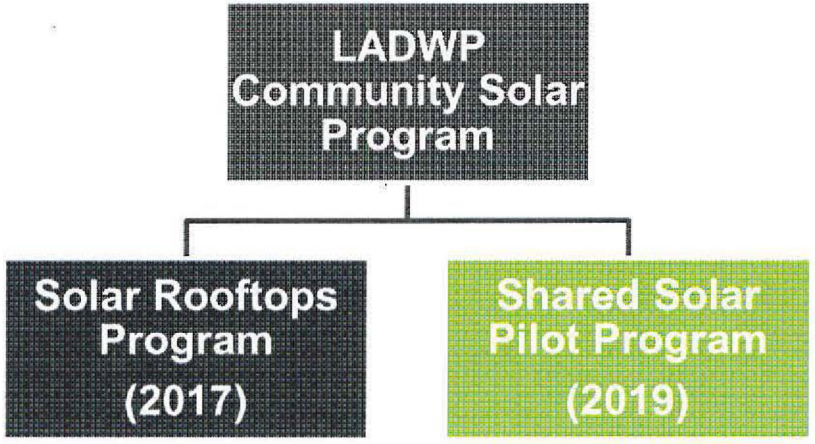
BACKGROUND

COMMUNITY SOLAR PROGRAM OVERVIEW

LADWP's Community Solar Program consists of two components that each aim to reduce barriers to receiving the benefits of solar.

Pays participants $360 annually for 20 years if they install a LADWP-owned solar panel system on their rooftops.



Procures solar projects and allows subscribers to offset a portion of their energy usage charged at retail rates with block(s) of energy charged at program rate.

LADWP is designing a Shared Solar Pilot Program and corresponding rate structure and plans to launch the pilot program in January 2019. This presentation outlines key program design and rate structure elements.

BACKGROUND

LADWP SHARED SOLAR PILOT PROGRAM GOALS

LADWP will launch a Shared Solar Pilot Program (SSP) in Q1 of 2019 to expand solar equity, meet key sustainability goals, and strengthen ties with the community.

LADWP Shared Solar Program Goals

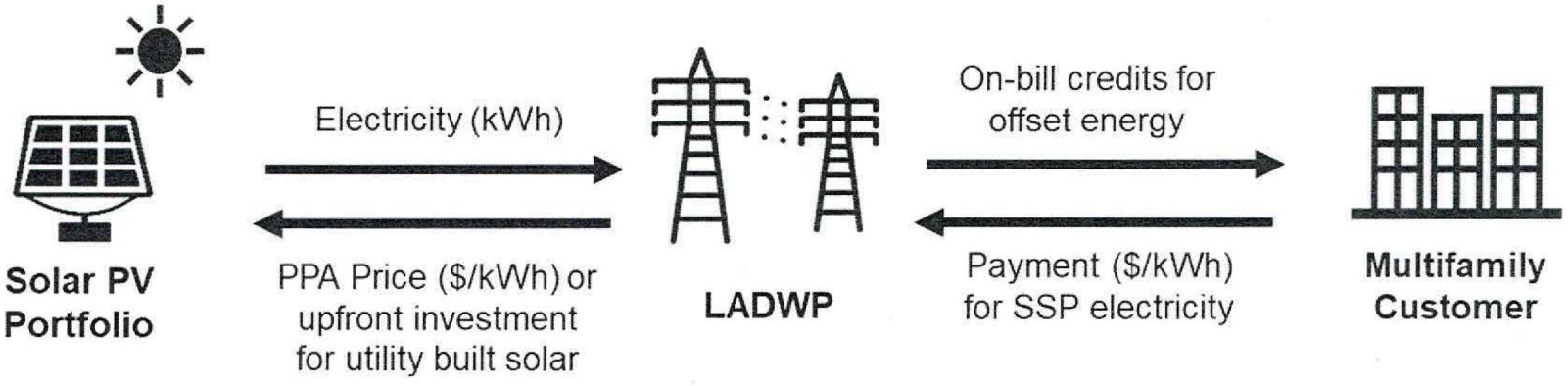
Goal Type	Specific Goals
Equity	• Expand access to solar by reducing barriers, such as high capital costs, credit requirements, and lack of site control • Enable geographic solar diversity and expand benefits of solar
Sustainability	• Support the Sustainable pLAn • Increase solar portfolio and contribute to LADWP's Renewable Portfolio Standard Goal with LADWP retaining the Renewable Energy Credits (RECs) from the program
Community	• Educate community about solar and renewable energy • Create local jobs and training opportunities

Source: Community Solar Program – Shared Solar Program, Draft Board Letter, September 25th, 2018.

PROGRAM DETAILS

LADWP SSP OVERVIEW

SSP will allow customers to offset monthly energy usage charged at retail rates with one or two 50 kWh blocks charged at the SSP rate.



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PROGRAM DETAILS

LADWP SSP COMPONENTS

Residential customers, living in multifamily dwellings, where lack of site control and infrastructure typically precludes traditional residential PV systems, can subscribe and purchase energy through SSP.

Capacity & Eligibility

- Up to 10 MW AC
- Available to **multifamily dwelling residents** on certain rate schedules:
  - R1A - Standard Residential
  - R1D - Low Income
  - R1E - Lifeline

Structure & Compensation

- Customers can purchase 50 kWh blocks of energy with a maximum purchase of 2 blocks
- 10 year fixed price ($/kWh)
- Flexible participation with no monetary penalties for cancellations

Source: Community Solar Program – Shared Solar Program, Draft Board Letter, September 25th, 2018.

PROGRAM DETAILS

SSP DISCOUNTED OFFER STRUCTURE

LADWP is working with state and federal agencies to obtain grant and other external funding to use for eligible customers, who for example may include low to moderate income (LMI) customers and/or those in disadvantaged communities (DACs).

Discounted Offer Goals

- Reduce solar barriers by removing fees and credit checks
- Reduce disparities identified by the Solar Penetration metric
- Bridge solar education gaps

Discounted Offer Structure

- Secure outside funding to buy down the cost of a typical subscription
- Rate ($/kWh) will be determined at a later date once outside funding value is confirmed

Sources: Community Solar Program Shared Solar Pilot, April 24, 2018, Slide 13.
Community Solar Program – Shared Solar Program, Draft Board Letter, September 25th, 2018.

PROGRAM DETAILS

SSP EXTERNAL FUNDING OPPORTUNITY EXAMPLES

External funding could provide a discounted rate for eligible customers.

LADWP SSP External Funding Opportunity Examples

Funding Source	Sponsor	Max Funding Amount*
Solar in Your Community Challenge	Department of Energy (DOE)	$500,000
Community Solar Pilot Program	California Department of Community Services and Development	$3,000,000
Linkage Fees or Prop HHH	Affordable Housing Commission	$500,000

**Funding amounts based on one time lump sum awards as detailed in applications and LADWP estimates.*

SHARED SOLAR PROGRAM RATE DESIGN

SSP PILOT RATE METHODOLOGY

LADWP calculated the SSP Rate by adjusting the current residential rate to account for the costs and benefits of shared solar.

***SSP Rate* = (1) Current Rate – (2) Solar Benefits + (3) Solar Generation Mix Costs**

1 Current Rate

- Residential R-1 (A) Tier 1 Rate
- Excludes Power Access Charge

2 Solar Benefits

- Updates R-1 (A) Tier 1 Rate components:
  - Generation capacity reduction
  - Avoided energy costs
- REC value

3 Solar Generation Mix Costs

- Solar portfolio energy cost (utility-built + PPA solar)

SHARED SOLAR PROGRAM RATE DESIGN

SSP PILOT RATE METHODOLOGY

SPP subscribers will lock in a fixed rate for 10 years, with LADWP updating the SPP rate annually for new subscribers.

Year 1 of Pilot

- LADWP **has calculated SPP rate** using the July 2018 R-1 (A) Tier 1 Rate and a portfolio of solar facility costs
- LADWP will recalculate rate in Jan. 2019 using an average of the July, Oct, Jan rates

Future Years of Pilot

- LADWP **will recalculate rates every January** using updated numbers

The recalculation will incorporate the latest average residential R-1 (A) Tier 1 Rate, REC value, solar portfolio price and inflation.

SHARED SOLAR PILOT PROGRAM RATE DESIGN

CURRENT (SEPT. 2018) R-1(A) TIER 1 RATE

The following table details the components of the current R-1(A) Tier1 Rate.

R-1(A) Rate Component July - Sept 2018	Rate
Energy Charge Tier 1, Zone 1, first 350 kWh (Capped)	$0.0702
Energy Charge Tier 1, Zone 1, first 350 kWh (Incremental)	$0.0023
ECA	$0.0569
ESA	$0.0015
RCA	$0.0030
IRCA	$0.0107
VEA	$0.0013
CRPSEA	$0.0047
VRPSEA	$0.0141
Total Rate Excl. Power Access Charge	**$0.1648**
Power Access Charge Per Month (Tier 1)	$ 1.75

SHARED SOLAR PILOT PROGRAM RATE DESIGN
METHODOLOGY

- The Tier 1 rate excluding the Power Access Charge is broken down into cost components based on the 2015 COS Study.
- Those components are included in the solar rate with an adjustment to Generation Capacity based on the solar system having a 20% capacity factor and the Generation Energy O&M being replaced with Solar Energy.
- The actual rate for the first year of the program will be recalculated based on the Tier 1 rate in January 2019. The rates for future participants will be calculated annually.

Functional Rate Component	2015 COS Study	% of Total Costs	July-Sept 2018 R-1(A)Tier 1 Rate (1)	Capacity Adjustment (20% Solar)	Solar Rate SB3 + 4 UBS FY 18/19
Transmission	$ 126,637,360	9%	$ 0.0152		$ 0.0152
Generation Capacity	$ 183,240,190	13%	$ 0.0220	$ (0.0044)	$ 0.0176
Generation Energy & O&M	$ 468,400,282	34%	$ 0.0562		
Solar Energy	**n/a**	**n/a**	**n/a**		**$ 0.0700**
Distribution @34.5kV	$ 46,663,847	3%	$ 0.0056		$ 0.0056
Distribution @4.8kV	$ 239,035,951	17%	$ 0.0287		$ 0.0287
Distribution @Secondary	$ 97,813,300	7%	$ 0.0117		$ 0.0117
Meter Costs	$ 8,441,049	1%	$ 0.0010		$ 0.0010
Account Expenses	$ 49,382,347	4%	$ 0.0059		$ 0.0059
A&G	$ 53,623,373	4%	$ 0.0064		$ 0.0064
General Plant Costs	$ 21,049,321	2%	$ 0.0025		$ 0.0025
City Transfer Costs	$ 79,338,468	6%	$ 0.0095		$ 0.0095
Total	**$1,373,625,488**	**100%**	**$ 0.1648**	**$ (0.0044)**	**$ 0.1742**

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SHARED SOLAR PILOT PROGRAM RATE DESIGN

ENERGY RATE COMPONENT – PORTFOLIO APPROACH

Navigant used a portfolio approach to calculate the energy component of the residential rate including five projects that should all come online in 2019.

	Residential R-1(A) Rate	Portfolio: Springbok 3 + UBS Projects
Energy	$0.0562	$0.0700
Approach	Generation Energy and O&M proportion of Tier 1 Rate (see previous slide) based on 2015 COS study	Calculated a blend of four future UBS projects and Springbok 3 PPA (2019)

UBS projects include: Sun Valley Transmission HQ (166 kW AC), Valley Generation Station Instrument Shop (90 kW AC), Van Nuys Service Planning (300 kW AC), and Green Meadows (150 kW AC). The remaining 9.3 MW AC comes from the Springbok 3 solar farm.

SHARED SOLAR PILOT PROGRAM RATE DESIGN

ENERGY RATE COMPONENT – PORTFOLIO CALCULATION

- The energy rate component of the initial SSP rate is based on the 10 MW AC generation facility portfolio, including capacity from four UBS projects, with the remaining 9.3 MWs from the Springbok 3 solar farm.
- Costs for each portfolio facility are weighted based on system capacity. Final costs have not been determined for the four UBS projects, so NREL construction and O&M costs were used as a best estimate.
- In coming years, actual UBS projects costs will be used to calculate the energy rate component.

Solar Portfolio	Capacity (kW AC) (3)	% of Program Capacity	Construction Cost (1)	O&M Costs (2)	Total Cost	Total Weighted Cost
Sun Valley Transmission HQ	166	2%	$ 0.287	$ 0.020	$ 0.307	$ 0.0051
Valley Generation Station Instrument Shop	90	1%	$ 0.287	$ 0.020	$ 0.307	$ 0.0028
Van Nuys Service Planning	300	3%	$ 0.287	$ 0.020	$ 0.307	$ 0.0092
Green Meadows Project (Solar Rooftop & Carport)	150	2%	$ 0.287	$ 0.020	$ 0.307	$ 0.0046
Total UBS Capacity	706	7%				$ 0.0217
Springbok 3 - PPA	9,294	93%			$ 0.0520	$ 0.0483
Total Portfolio	**10,000**	**100%**				**$ 0.0700**

1) LADWP estimate using the NREL Levelized Cost of Energy Calculator.

2) Numbers from NREL US Solar Photovoltaic System Cost Benchmark: Q1 2017. Assumes an inverter replacement every 5 years.

3) Capacity for UBS projects is total project capacity. Total capacity for Springbok 3 is 90 MW AC.

SHARED SOLAR PILOT PROGRAM RATE DESIGN
COST RECOVERY

Shared Solar Pilot Program customers can receive a fixed rate of $0.174 per kWh for 10 years without creating a cost shift between customers.

				LADWP Financial Position		
Year/Period	Res. Avg Rate Increase (1)	Residential Tier 1 Rate	Solar Rate	Over / (Under) Recovery From Solar Customers	SSP REC Value (2)	Net Impact to LADWP
July-Sept 18		$ 0.1648				
2018-19	3.5%	$ 0.1706	$ 0.174	$ 0.004	$ 0.020	$ 0.024
2019-20	2.8%	$ 0.1754	$ 0.174	$ (0.001)	$ 0.020	$ 0.019
2020-21	1.5%	$ 0.1779	$ 0.174	$ (0.004)	$ 0.020	$ 0.016
2021-22	4.0%	$ 0.1850	$ 0.174	$ (0.011)	$ 0.020	$ 0.009
2022-23	4.7%	$ 0.1936	$ 0.174	$ (0.019)	$ 0.020	$ 0.001
2023-24	4.2%	$ 0.2018	$ 0.174	$ (0.028)	$ 0.020	$ (0.008)
2024-25	2.8%	$ 0.2075	$ 0.174	$ (0.033)	$ 0.020	$ (0.013)
2025-26	2.4%	$ 0.2125	$ 0.174	$ (0.038)	$ 0.020	$ (0.018)
2026-27	2.0%	$ 0.2167	$ 0.174	$ (0.043)	$ 0.020	$ (0.023)
2027-28	4.4%	$ 0.2262	$ 0.174	$ (0.052)	$ 0.020	$ (0.032)
NPV (5%, 10 FYs)				**$ (0.154)**	**$ 0.154**	**$ 0.000**

1) Increases for 2019-20 and after are the overall residential increases (Includes Adjustment factors) from most recent LADWP financial plan. Increase for 2018-19 is the overall residential percentage increase from the LADWP financial plan (7.01%) x 50% to account for the overlap of the current July-Sept 18 rate and FY 2018-19.
2) From LADWP trading desk.

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