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Electricity Export System from Planet Ark Power

eleXsys California Market Entry Report

Executive Summary

The eleXsys California Market Entry Report attempts to provide relevant insight into the California Energy, Solar, Battery Storage, and Microgrid markets in relation to eleXsys Energy and its value propositions. This specific article outlines the opportunity found in LADWP, LA's municipal utility, FIT+ pilot program which allows FOM solar exportation with TOD multipliers.

Current California Market Analysis
LADWP—Los Angeles Department of Water and Power

Background

The Los Angeles Department of Water and Power, the largest municipal water and power utility in the nation, was established more than 100 years ago to deliver reliable, safe water and electricity to 4 million residents and businesses in Los Angeles.

LADWP provides its 681,000 water customers and 1.4 million electric customers with quality service at competitive prices. As the largest municipal electric utility in the nation, the LADWP's Power System is **vertically integrated**—the LADWP both owns and operates the majority of its generation, transmission, and distribution systems.

Renewables

LADWP and City of Los Angeles leaders have been at the forefront of California utilities in adopting aggressive clean energy goals. LADWP was among the first electric utilities to achieve the first major state legislated target of 20% renewables by 2010. LADWP exceeded the next state legislated milestone of 33 percent in 2020 with 34%.

As of calendar year 2018, LADWP achieved 32% renewables, including:

Wind	11%
Solar	13%
Geothermal	7%
Eligible Hydroelectric Power	2%

FIT Program

Like most municipal utilities in California, LADWP offers a Feed-in-Tariff (FiT) program for renewable energy projects, connected Front-of-Meter. The FiT program allows property owners and developers to sell the output of local eligible renewable energy projects directly to LADWP (as opposed to consuming the energy onsite to satisfy the customer's load). This program generates local renewable capacity through a public-private partnership while helping LADWP achieve Renewable Portfolio

Standard mandates. The current Feed-in-Tariff program offers a set exportation rate for solar projects without a need or incentive for storage.

> LADWP will purchase energy, for a term not exceeding 20 years, from projects via a Standard Offer Power Purchase Agreement at a set price dependent on system size and location. This price includes all energy, capacity rights, and environmental attributes associated with the project.

Total = 185 MW		
In-Service 85.6 MW	Active 80.9 MW	Available 18.5 MW

Updated as of 6/1/2021

FiT Pricing Table			
Project Capacity	In-Basin Projects		Owens Valley Projects
	Solar PV	Non-PV	Solar PV
30 kW - 500 kW	14.5¢ per kWh	11.5¢ per kWh	11.5¢ per kWh
> 500 kW - 3 MW	14.0¢ per kWh	11.0¢ per kWh	Not Available
> 3 MW	13.5¢ per kWh	10.5¢ per kWh	Not Available

In the current FiT program, eleXsys could partner with a developer on a project to optimize the solar system, energy exported, and revenue generated while providing additional FCAS through its FOM connection. LADWP has also limited the size of applicable solar systems in their Owens Valley Projects due to hosting capacity issues and limitations on the circuit.

> Eligible Projects shall have a Capacity ranging from 30 kW to 10 MW. Due to available hosting capacity, Projects in the Owens Valley will be limited to an aggregated Capacity of 500 kW per LADWP distribution circuit.

EleXsys could also solve voltage limitations on the distribution grid and increase hosting capacity for solar penetration. Owens Valley solar installation is currently restricted by grid limitations. An eleXsys demonstration project in the Owens Valley region would prove that eleXsys can increase hosting capacity w/o the need of distribution upgrades, allowing for solar optimization and system maximization…

FIT+ Program

The FiT+ Pilot Program expands upon the existing FiT program to further promote the use of locally generated solar energy and to ensure the deployment of energy storage projects that can dispatch solar energy in a manner that optimizes the deliverability of renewable energy to nearby load centers at hours that are most beneficial for the electric grid.

Additionally, FiT+ Pilot Program projects may also be designed to:

1. increase the reliability and resiliency of the grid by allowing energy to be consumed on-site during a potential LADWP grid outage (Resiliency); and

2. reduce customer energy consumption from the grid during certain peak periods (Peak Shaving).

How does the program work?

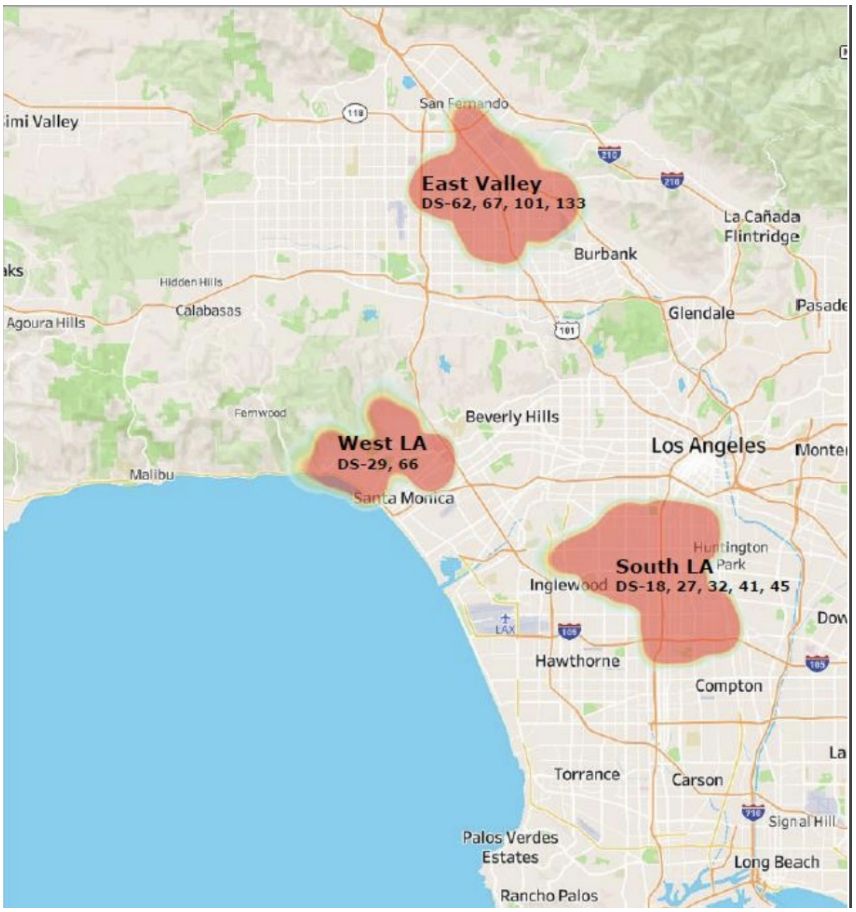
LADWP will purchase energy, for a term not exceeding 20 years, from projects via a Competitive Offer Power Purchase Agreement. Under the FiT+ Pilot Program, LADWP will use a competitive bidding process for up to 10 MW of solar + storage project within the City of Los Angeles. The 10 MWs of available capacity will be split over three bidding tranches. Each tranche will consist of a 90-calendar day window to allow for proposals to be submitted for only those eligible Zones.

Maps of the FiT+ Zones can be found at the link, using the password FiT+PilotZones*. Detailed explanations of the FiT+ Zones and the associated maps can be found in Section 3.5 of the FiT+ Pilot Program Guidelines.

Tranche A Bidding Period

The competitive bidding period for Tranche A begins on April 27, 2021 and will end on July 26, 2021. The program will only accept applications for projects within the eligible zones. Please refer to the FiT+ Pilot Program Guidelines for eligibility requirements.

Tranche Segmentation			
Category	**Tranche A**	**Tranche B**	**Tranche C**
Eligible Zones	South LA East Valley	South LA East Valley	South LA East Valley West LA
Tranche Capacity	3 MW	3 MW	4 MW



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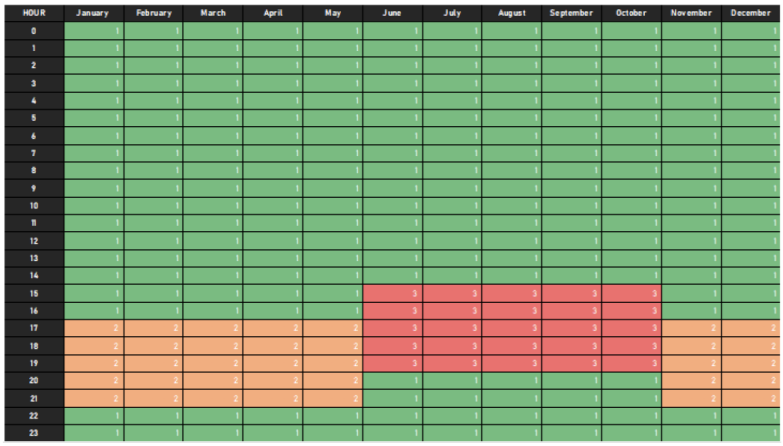
TOD (Time of Delivery) Multiplier

East Valley and West LA Multiplier Table			
Season	**Months**	**Hours**	**Multiplier**
Winter/Spring	November 1st – May 31st	5pm - 10pm	2.0x
Summer/Fall	June 1st – October 31st	3pm - 8pm	3.0x
		All Other Times	1.0x



HOUR	January	February	March	April	May	June	July	August	September	October	November	December
0	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1	1	1	1	1	1
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12	1	1	1	1	1	1	1	1	1	1	1	1
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15	1	1	1	1	1	3	3	3	3	3	1	1
16	1	1	1	1	1	3	3	3	3	3	1	1
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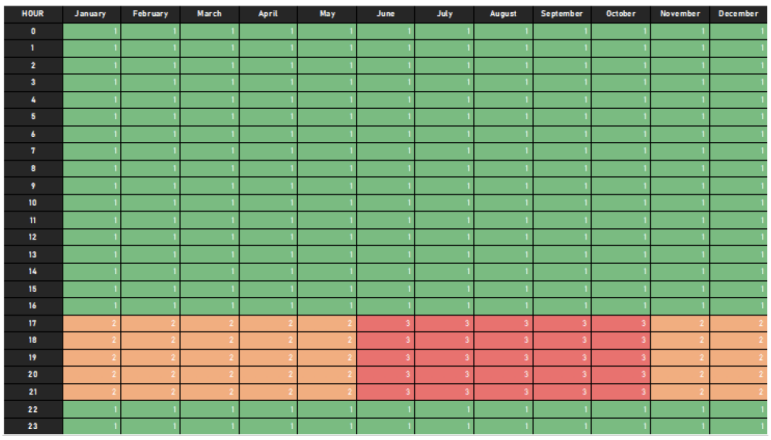
21	2	2	2	2	2	1	1	1	1	1	2	2
22	1	1	1	1	1	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1	1	1	1	1	1

South LA Multiplier Table			
Season	**Months**	**Hours**	**Multiplier**
Winter/Spring	November 1st – May 31st	5pm - 10pm	2.0x
Summer/Fall	June 1st – October 31st	5pm - 10pm	3.0x
		All Other Times	1.0x



HOUR	January	February	March	April	May	June	July	August	September	October	November	December
0	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	1	1	1	1	1
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11	1	1	1	1	1	1	1	1	1	1	1	1
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16	1	1	1	1	1	1	1	1	1	1	1	1
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21	2	2	2	2	2	3	3	3	3	3	2	2
22	1	1	1	1	1	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1	1	1	1	1	1

The Fit+ Program offers Time of Delivery Multipliers of rates that LADWP will pay for exported energy. As seen above, Easy Valley & West LA regions receive a 2x multiplier in the Winter/Spring during the hours of 5pm to 10pm and a 3x multiplier in the Summer/Fall during the hours 3pm to 8pm. Similarly, the South LA region receives a 2x multiplier in the Winter/Spring during the hours of 5pm-

10pm and a 3x multiplier in the Summer/Fall during the hours of 5pm to 10pm. The only difference is the 3x multiplier is 5pm to 10pm for the South LA region while it is a 3pm to 8pm timeframe for East Valley & West LA. All other hours and days will receive the normal 1x rate.

A 5-hour TOD multiplier means that the most efficient BESS systems would have a 5-hour configuration. Our current 50kw 372 kw/hr configuration, a 7-hour system, is sufficient to enjoy all of the multiplier opportunities, however, may prove to be too costly in some project circumstances.

Other Requirements

- Applicants may not exceed total project capacity of 500 kW-AC (and no lower than a 30 kW discharge capacity) at the Point of Delivery. **However, nameplate capacity may exceed 500 kW.**
- The contract term is 20 years.
- Facilities may be operated in three modes: normal operations, resiliency operations, peak shaving operations.
- Projects participating in the existing FiT program may add battery storage if the proper forms are completed.
- BESS must comply with EL 9540 standards. Only non-GHG emitting batteries qualify. It should comply with IEEE 1547 and UL 9540 for grid safety.
    - **No grid charging is allowed.**
- Inverters must have safety testing conforming with UL 1741SA and IEEE 1547.
- An automatic transfer switch is needed for facilities with resiliency/peak shaving capabilities (must be able to electrically isolate).
- **Solar PV systems that participate in LADWP's Net Energy Metering programs are not eligible for the FiT+ Program**