

Hub Talk!

LADWP and USC Credit Union Resources For Financing Sustainable Upgrades for Your Home and Life

Co-sponsored by
USC Office of Sustainability and USC Staff Assembly

November 7, 2024

Today's Speakers

Introductions: USC Chief Sustainability Officer Mick Dalrymple

LADWP Senior Utility Services Specialist Brian Ho

LADWP Electrical Engineer, Demand Response Program Development
Manager Ronak Chikhalya

USC Credit Union Vice President Consumer Lending Valerie Ives

USC Sustainability Moonshot

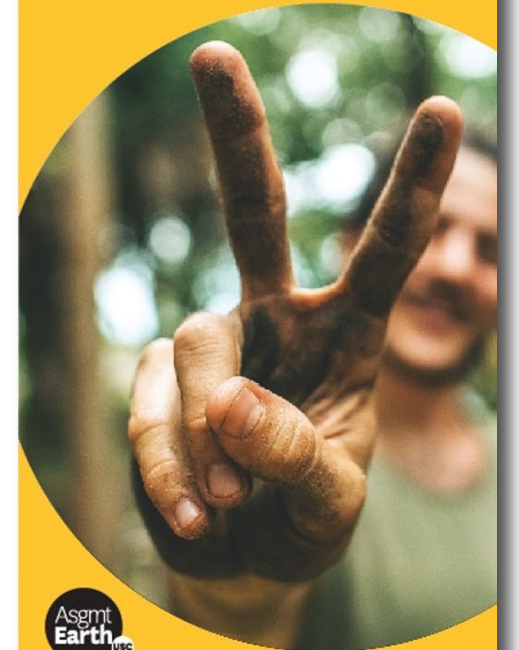
“Sustainability is at the core of everything I believe. The challenges are real and immediate, and I’m confident our collective energy and commitment will exceed them.” USC President Carol L. Folt

Develop and integrate sustainability solutions throughout everything we do — Education, Research, Healthcare Delivery, Operations, and Engagement — in order to build a healthy, just, and thriving campus and world.



<https://www.youtube.com/watch?v=a-snKDR-n9s>

**Change
Starts
With Us.**
We're all in.



**Asgmt
Earth**
USC
Working together
for a sustainable future

Assignment: Earth

USC's 2028 Sustainability Framework



Working together
for a sustainable future



Education



Research



Equity and
Inclusion



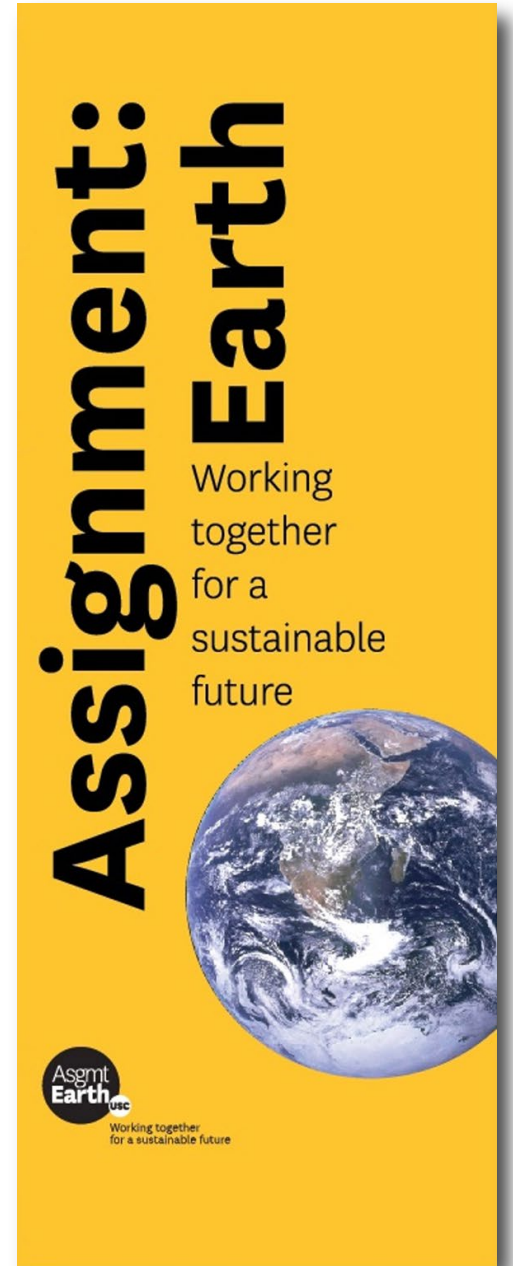
Operations



Engagement



USC Sustainability

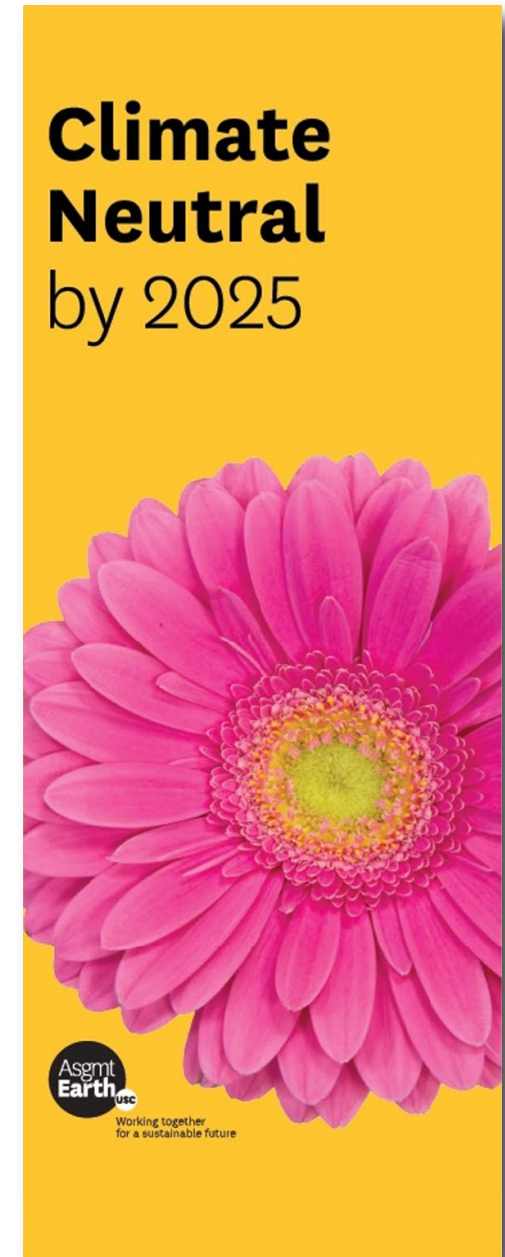


Assignment: Earth Ops Goal – Climate Neutrality by 2025

Great partnership between LADWP and USC to reduce carbon-based energy consumption.

- 20-year Energy Purchase Agreement provides USC with up to **25MW** of electricity from LADWP Springbok 3 Solar Farm
- Meets one-quarter of USC's annual electricity needs
- Equivalent of taking 5,413 gas-fueled cars off the road
- Contributes to DWP Clean Energy Adder program, which makes renewable energy more accessible + affordable for multifamily residents in USC campuses' neighborhoods

<https://today.usc.edu/solar-power-usc-ladwp-agreement/>





Customer Rebate Programs Energy Efficiency and Electrification

November 7, 2024

Brian Ho
Senior Utility Services Specialist

Program Design & Liaison
Distributed Energy Solutions

Energy Efficiency Rebates

Cool LA Marketplace

Residential

[Income-qualified](#) electric customers are eligible for a rebate of up to \$225 on the purchase of select air conditioners (limit two).

Complete details on this program can be found at ladwp.com/cool-la



Efficient Product Marketplace

Residential

A convenient marketplace that allows customers to receive rebates for popular energy efficient products available at various retailers.

Products	Rebates
Light Bulbs	\$2.50
Power Strips	\$15
Televisions	up to \$25
Window AC's	\$75
Thermostats	up to \$75
Refrigerators	up to \$75

Energy Efficiency Rebates

Consumer Rebate Program

Residential

Provides rebates for purchasing and installing qualifying energy-efficient products that exceed state/federal efficiency standards.

- **Cool Roof:** up to \$0.60 per sq ft
- **ENERGY STAR Windows:** \$2 per square foot
- **Whole House Fan:** \$200 per unit
- **Variable Speed Pool Pump:** \$500 per unit
- **HVAC System:** up to \$120 per ton
- **Central Heat Pump HVAC:** \$300/ton
- **Heat Pump Water Heater:** \$1,500



Complete details on this program can be found at ladwp.com/crp

Energy Efficiency Rebates

City Plants

Residential & Commercial

Offers free shade trees to residents and businesses in the City of Los Angeles.

- Yard Trees: Receive up to seven free water-efficient shade trees delivered to your door, including stakes, ties, and fertilizer.
- Tree adoption events: Community event to take home a yard tree
- Trees for apartments/HOAs: Free trees for parkway in front of apartment building.



Complete details on this program can be found at cityplants.org

Energy Efficiency Rebates

Home Energy Improvement Program

Residential

Free home energy efficiency upgrades designed to help customers reduce their energy bills.

Upgrades include:

- Caulking and Weather-stripping (Windows and Doors)
- LED lights
- Low Flow Showerheads / Faucet Aerators
- Low Flow Toilets
- Attic Insulation

Complete details on this program can be found at ladwp.com/heip



Energy Efficiency Rebates

Comprehensive Affordable Multifamily Retrofit

Commercial

Offers low-income multi-family property owners free efficiency assessments to help save energy and reduce costs, as well as aid with work scope development and obtaining bids from contractors.

Complete details on this program can be found at ladwp.com/camr



Financial incentives for reducing greenhouse gas emissions in common areas and inside units.

- **5-64 Units:** \$5,400 - \$6,750/MTCO₂e
- **65+ Units:** \$6,200 - \$7,750/MTCO₂e

Participating properties must:

- Consist of five (5) or more units.
- Have at least 66% of households at or below 80% of Area Median Income (AMI) and be located in a Disadvantaged Community (DAC).
- *Properties not located in a DAC may be eligible with proof of rent regulatory agreement or provision of public assistance program documentation.*
- Install improvements that save at least 5% energy.
- *May be eligible to receive incentives to install solar photovoltaic (PV) systems if savings exceed 5%.*

Energy Efficiency Rebates

Food Service Program

Commercial

Rebates for a variety of qualifying electric cooking and refrigeration equipment to help customers decrease energy use by as much as 75%, helping to lower their utility bills.

Complete details on this program can be found at ladwp.com/foodservice



Rebates from \$40 to \$5,000 (regardless of purchase price)

▪ Ice Maker	\$50
▪ Refrigerators	\$40 - \$100
▪ Fryer	\$500
▪ Dishwasher	\$600
▪ Freezers	\$75 - \$800
▪ Ovens	\$350 - \$5,000

Energy Efficiency Rebates

Commercial Direct Install

Commercial

The Commercial Direct Install Program provides **free energy efficiency upgrades** to qualifying businesses:

- Non-residential electric customer
- Average 250 kW or less of electrical use
- Customers that lease their building are eligible, but landlord permission is required.

Energy-Saving Measures:

- Upgrades to energy efficient lighting systems and lamps
- LED exit signs



Complete details on this program can be found at ladwp.com/cdi

Electric Vehicle Rebates

Home Charger Rebate

Residential & Commercial

Residential: Rebate to help offset the cost of purchasing *and* hardwire installing a qualifying Level 2 (240 volt) charging station. An additional rebate for *Income Qualified* customers available.

Commercial: Rebates to businesses to help offset the cost of installing three (3) types of commercial charging stations / equipment for electric vehicles (EVs): Level 2 Charging Stations, Direct Current Fast Chargers (DCFCs), and Medium- and Heavy-duty Charging Stations.



Complete details on these programs can be found at ladwp.com/ev

Electric Vehicle Rebates

Used Electric Vehicle Rebates

Residential

Rebate up to \$4,000 for qualified used electric vehicles (EV) *and* additional rebate for applicants residing in home enrolled in the EZ-SAVE or Lifeline programs.

Complete details on this program can be found at ladwp.com/ev





Los Angeles
Department of
Water & Power

LADWP Distributed Energy Resource and Demand Resource Programs

Ronak Chikhalya, P.E.

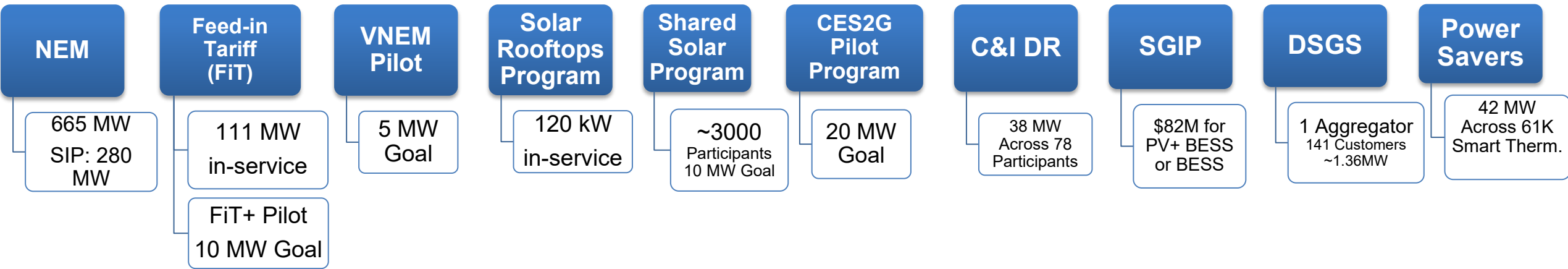
November 7, 2024



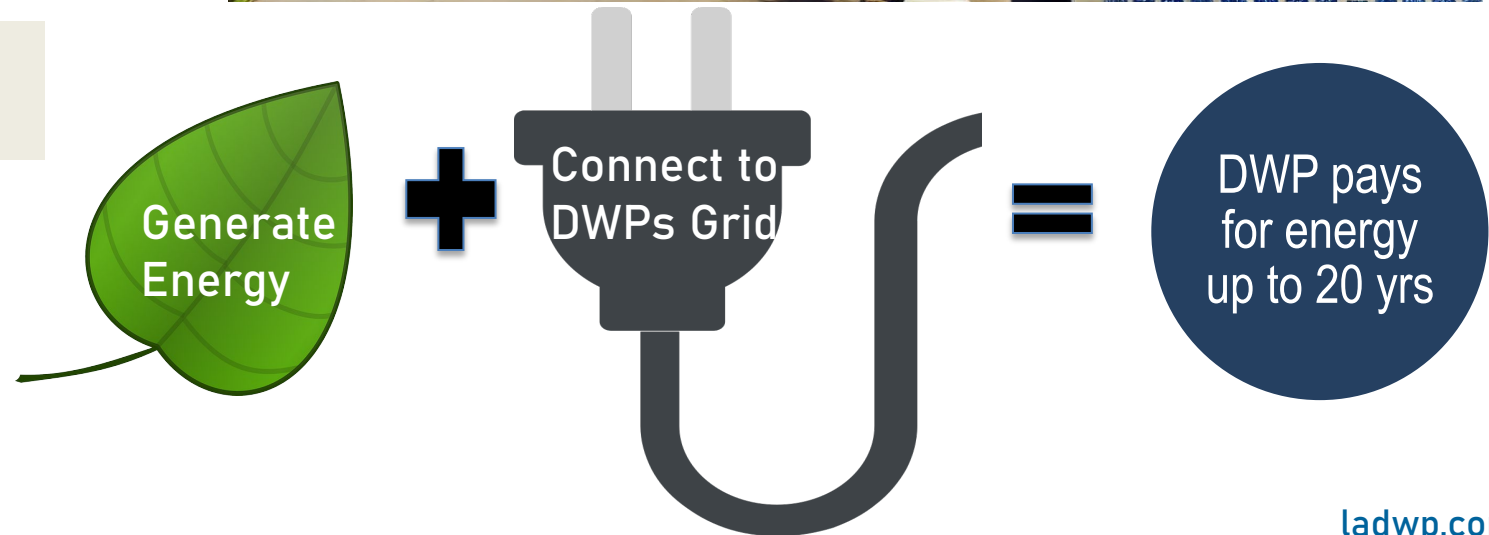
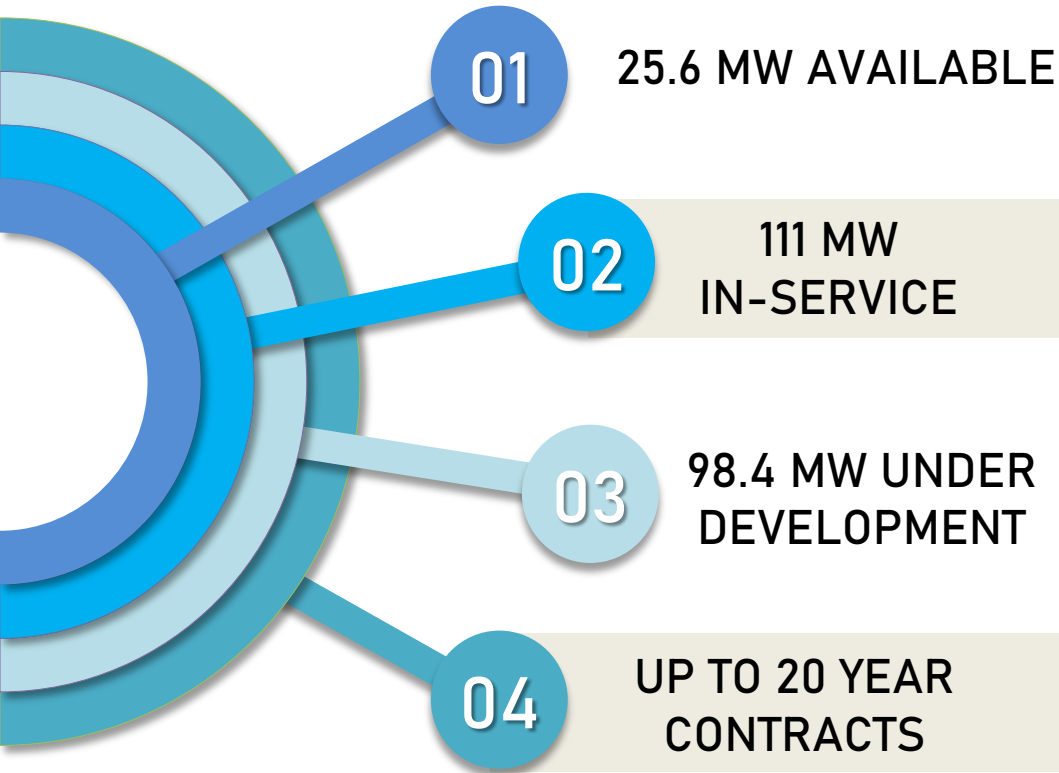
Agenda

- ❖ LADWP's Local DER Portfolio
 - ❖ Feed-in Tariff
 - ❖ Feed-in Tariff + Pilot Program
 - ❖ VNEM Pilot
 - ❖ CES2G Pilot
 - ❖ Shared Solar Program
 - ❖ Solar Rooftops Program
- ❖ LADWP's Demand Response Programs
 - ❖ Power Savers Program
 - ❖ Commercial and Industrial Demand Response Program

DER & DR Customer Programs



Feed-in Tariff (FIT) Program



FiT Program Benefits

Property Owner

- Monetize an underutilized asset (Rooftop/Parking lot)
- Up to 20-year revenue stream
- Support Los Angeles to achieve 100% clean energy
- Improve local grid reliability

Solar Developer

- Local Employment Opportunities – Development & Maintenance
- Portfolio Expansion
- Secure Investment Tax Credits – up to 40% per the Inflation Red. Act (IRA)

FiT Program Highlights

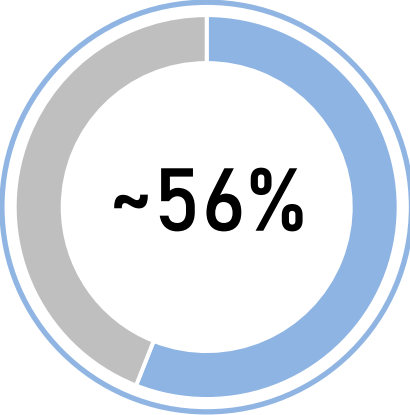
450 MW authorized by City Council

Open to all Renewable Energy Technologies

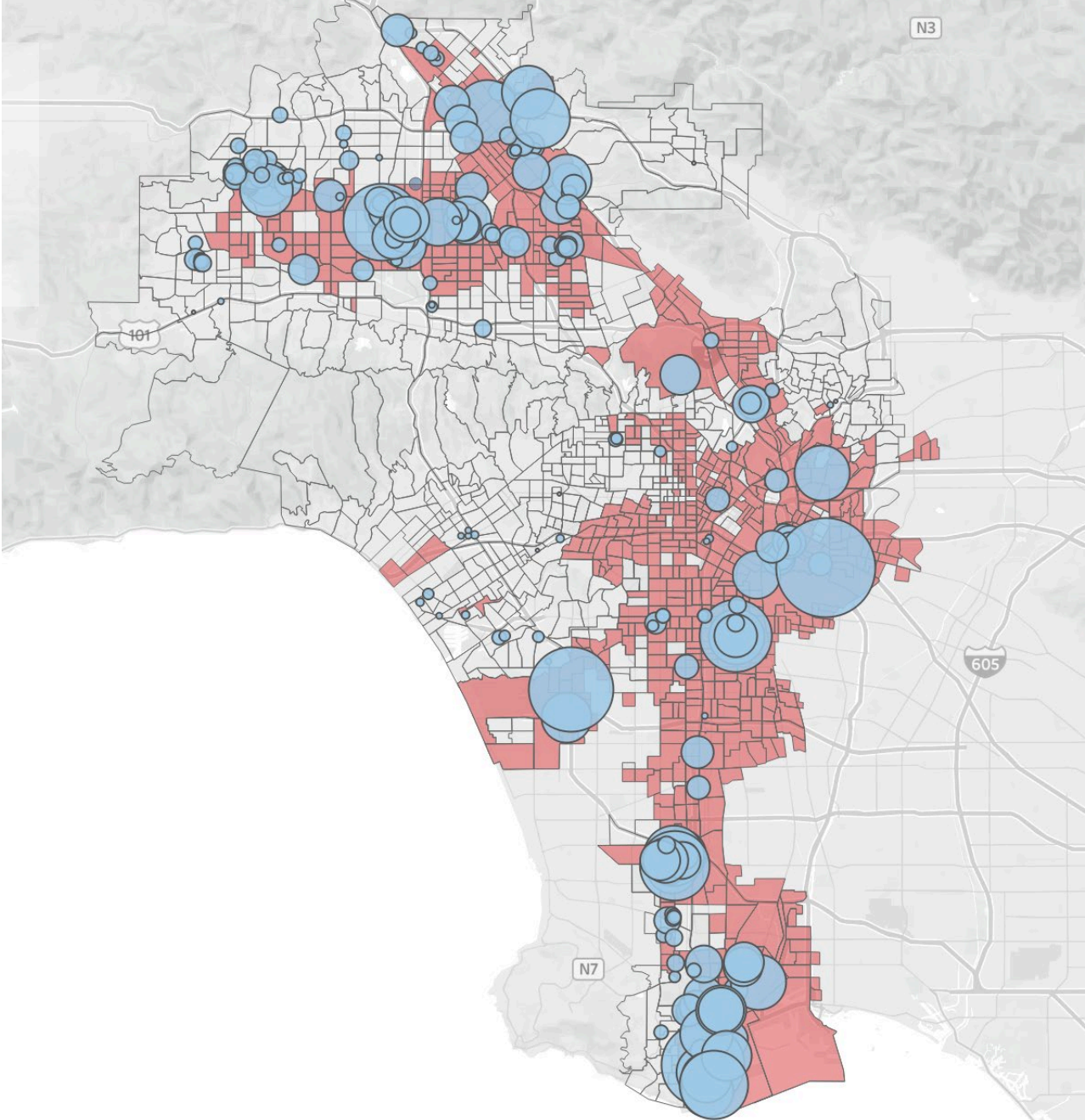
FiT Pricing Table			
Project Size (Capacity)	In-Basin Projects		Owens Valley Projects
	Solar PV	Non-PV	Solar PV
> 3 MW	13.5¢ per kWh	10.5¢ per kWh	Not Available
> 500 kW - 3 MW	14.0¢ per kWh	11.0¢ per kWh	Not Available
30 kW - 500 kW	14.5¢ per kWh	11.5¢ per kWh	11.5¢ per kWh

Program Representation in Disadvantaged Communities

(SB 535 and CaliEnviroScreen 4.0)



Feed-in Tariff



Feed-in Tariff (FIT) Carport and Canopy Solar w/EV Equipment

Existing FiT Program



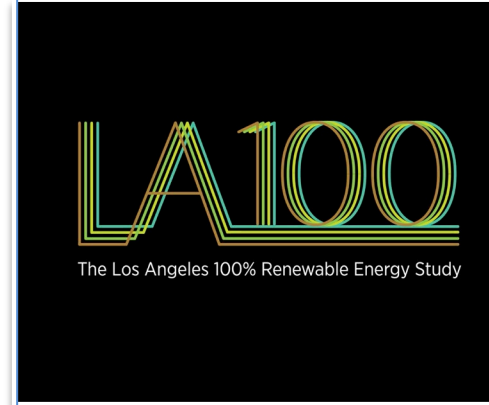
- 111 MW In-Service
- Only 8.5% of the installed FiT capacity is in the form of steel structures through carports or canopies

The Challenge



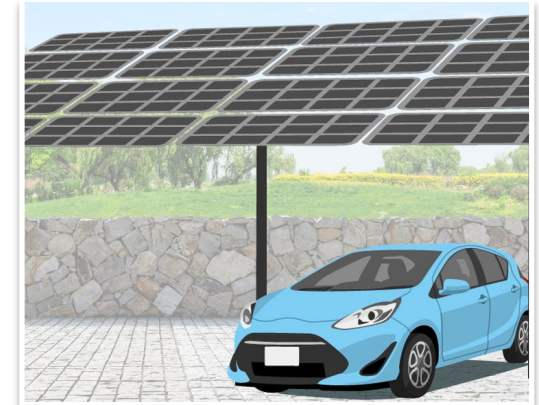
- Lack of carport solar projects within the LA basin due to high costs of steel, fuel and equipment
- EV charging infrastructure is a significant barrier to mass EV adoption especially in DACs

The Opportunity



- The *LA 100 study* identified ~ 5,700 MW of non-rooftop local solar technical potential within the LA basin.
- Parking canopy solar potential represents the majority (58% or about 3,900 MW) of LA's local solar potential

The Solution



- Leverage AB32 funding (non-ratepayer impact) to offset the high cost of steel for PV carport and canopy systems
- LADWP proposes reimbursing customers with a one-time incentive upon project completion



Feed In Tariff Program:

Carport Incentive w/ EV Requirement



Location	W/ Commercial EV charger rebate, 25% of covered parking spaces require LV 2 EV Chargers	W/O Commercial EV charger rebate, 10% of covered parking spaces require LV 2 EV Chargers	Public EV Charger is required
DAC	✓	✓	✓
Non-DAC	✓	✓	

Alternatively, for every one (1) installed DC Fast Charger, the minimum required LV 2 EV charging infrastructure may be reduced by five (5).

Feed-in Tariff (FIT) Program Carport and Canopy Incentive Adder

Proposed Adder within LADWP In-Basin Service Territory - \$/Watt-AC

Under 500kw	\$1.50
500kw to 3MW	\$1.20
3MW to 10MW	\$0.90
Adder Avg \$/Watt	\$1.20

Proposed Adder for LADWP In-Basin DACs - \$/Watt-AC

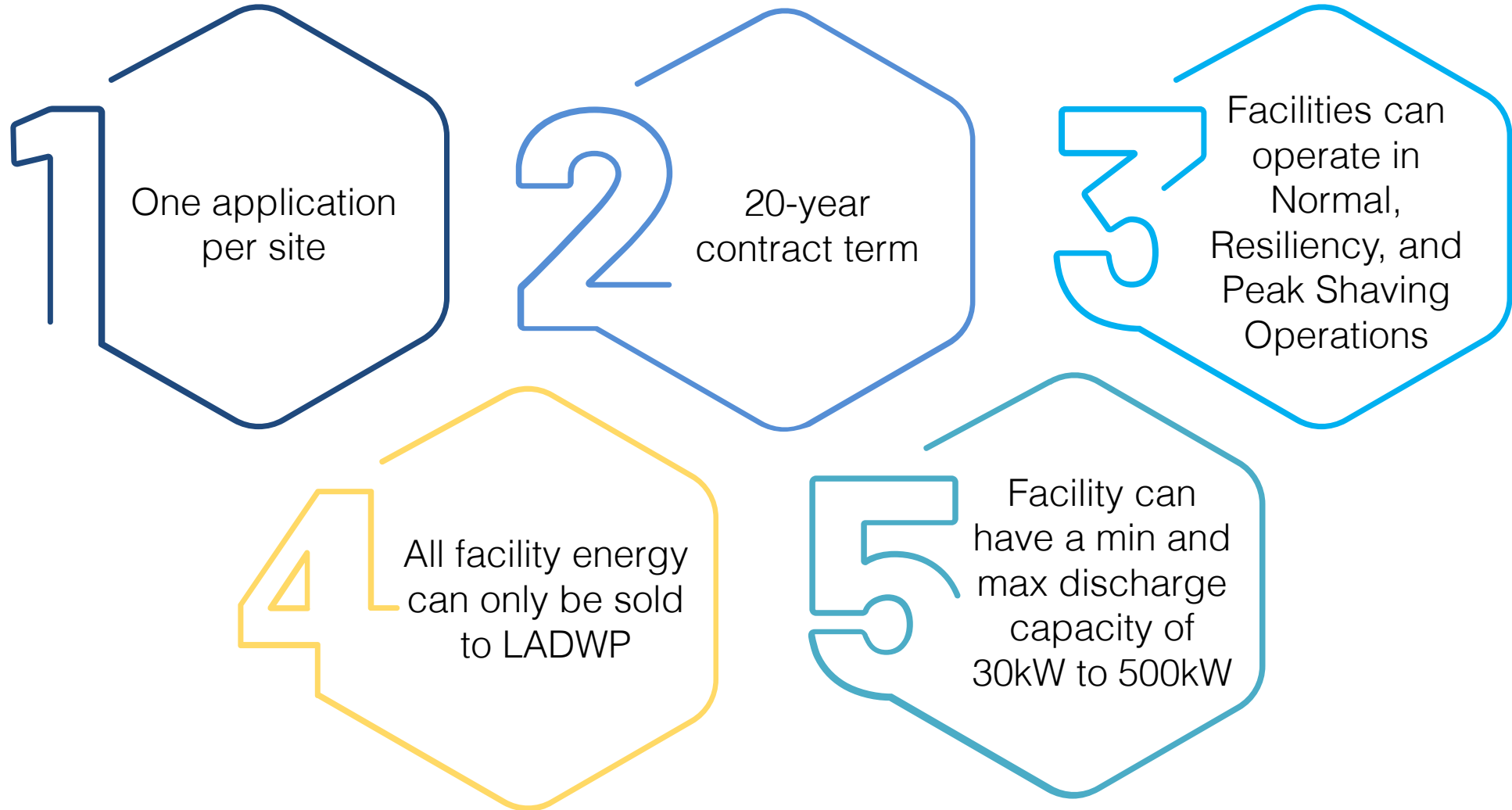
Under 500kw	\$1.70
500kw to 3MW	\$1.40
3MW to 10MW	\$1.10
Adder Avg \$/Watt	\$1.40

FiT+ Pilot Program

- Achieve long term strategic goals for DERs
- Expand FiT to promote the use of locally generated solar combined with energy storage
- Repurposed 10 MW from the FiT Expansion Program (*Energy storage allows for dispatchable renewable energy during grid needs*)
- Maintain RPS by only allowing PV charging
- Projects are limited to Preferred Zones of Development



FiT+ Pilot Requirements

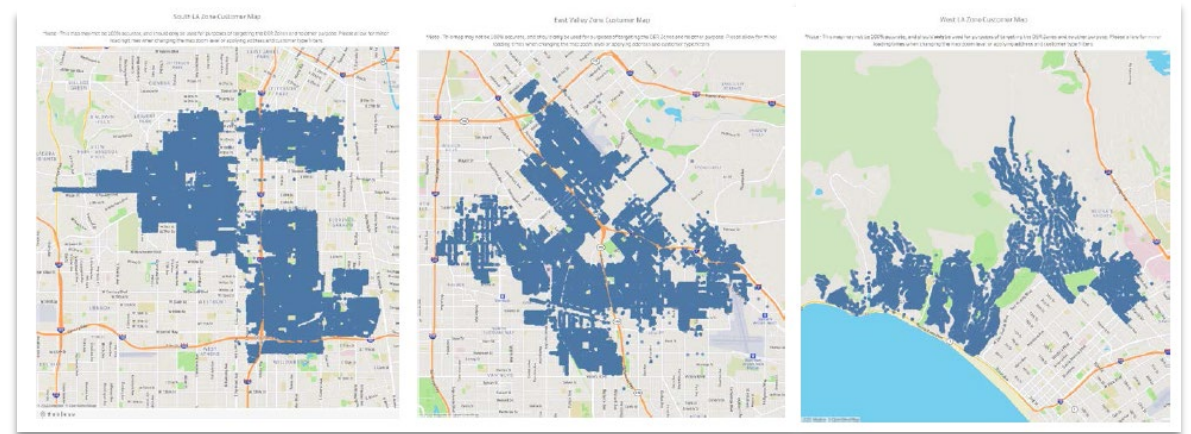


LADWP will evaluate applications and discover market pricing through a competitive bidding process

FiT+ Pilot Guidelines

- Existing FiT projects can be retrofitted if it meets guideline requirements
- Interconnection Cost Reimbursement up to \$150,000
- Focus on specific zones in the 4.8kV system
- 10 MW available for rebid
 - 1. South Los Angeles
 - 2. East Valley
 - 3. West Los Angeles

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



CES2G Pilot Program

Grid Connected – Separately metered systems from customer's normal load

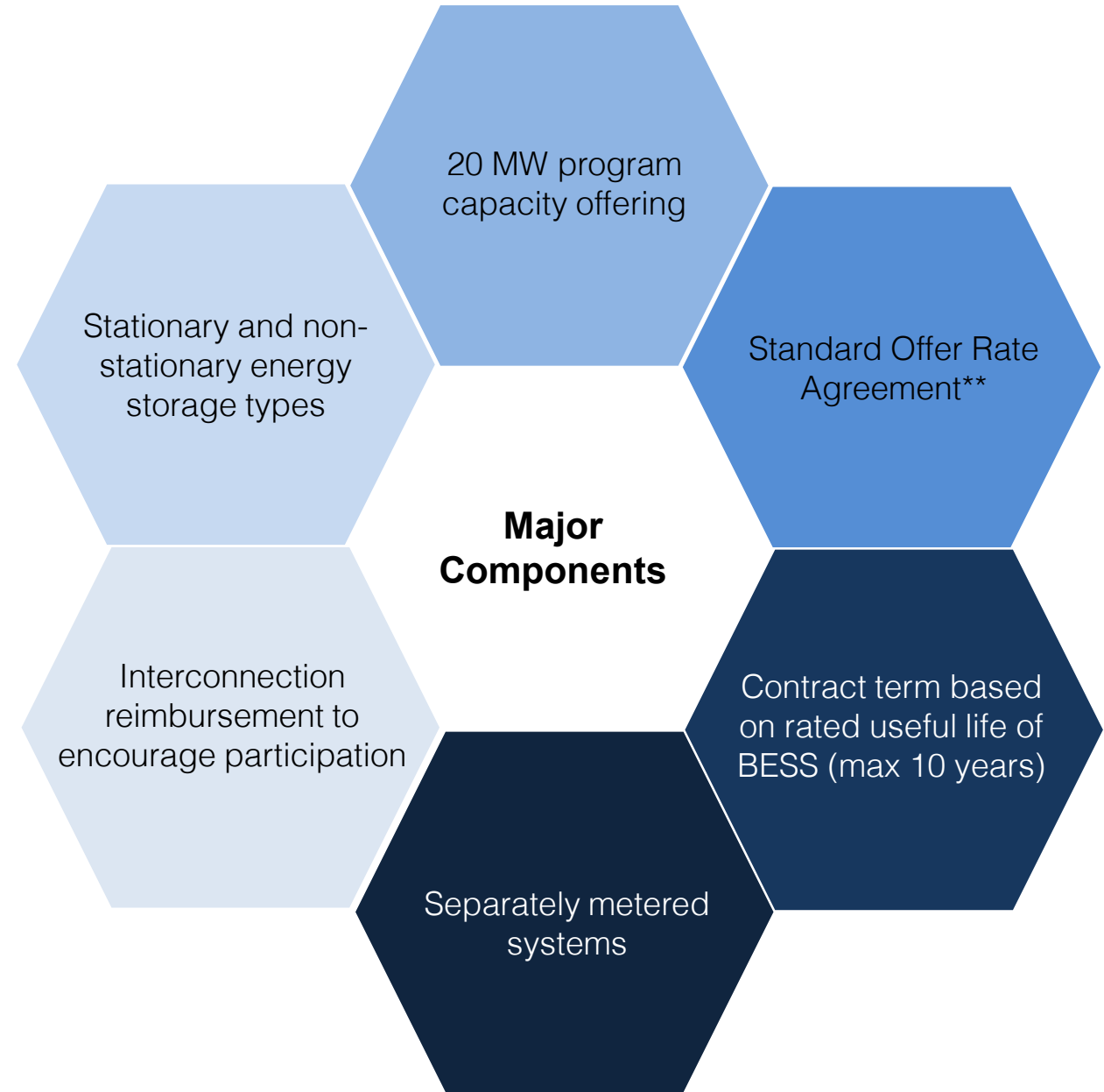


Stationary Energy Storage



Non-Stationary Energy Storage

CES2G Pilot Program Overview



**Declaration of Critical Peak Periods (CPP) are at the full discretion of the LADWP Energy Control Center

CES2G Pilot Requirements

- 1 Applicants must enroll in a DESS agreement
- 2 Minimum five up to a 10-year contract term
- 3 Applicants CES2G Facility is metered separately through a bidirectional revenue grade installation
- 4 All facility energy shall serve as system load or can only be sold to LADWP
- 5 Facility must have a minimum total Energy Storage capacity of 100kWhr

CES2G Tranche Breakdown

- The CES2G Pilot will have a total of 20 MWs of available capacity split over an initial three tranches.
- Each tranche will consist of a 90-calendar day window
- The terms of the DESS, IA, and Guidelines are non-negotiable.
- If capacity remains, more tranches may be created until the full capacity is reached at the discretion of LADWP.

Tranche Segmentation			
Category	Tranche 1	Tranche 2	Tranche 3
Eligible Zones	Only LA Basin Service Territory		
Tranche Capacity	4 MW	7 MW	9 MW

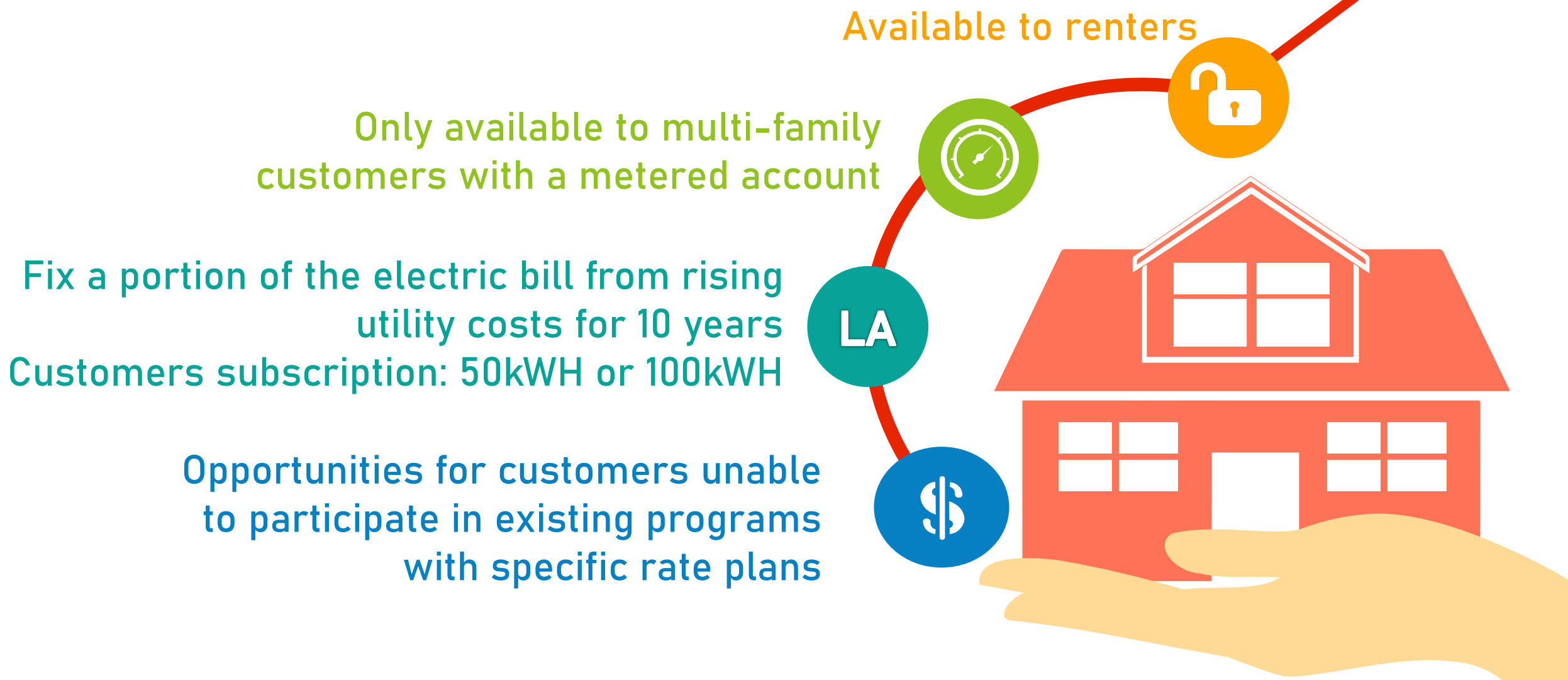
VNEM Pilot Program

Developer	Property Owner	Multifamily Ratepayer	LADWP
<ul style="list-style-type: none"> Installs Solar PV System Provide O&M Services Capture ITC, Rebates, and External Funding 	<ul style="list-style-type: none"> Receive value for energy production External funding could provide reduced cost for solar 	<ul style="list-style-type: none"> Receive value for portion of energy production Save money over time Flexible participation 	<ul style="list-style-type: none"> Capture RECs for RPS Goals Encourage local solar development Support Clean Grid LA efforts

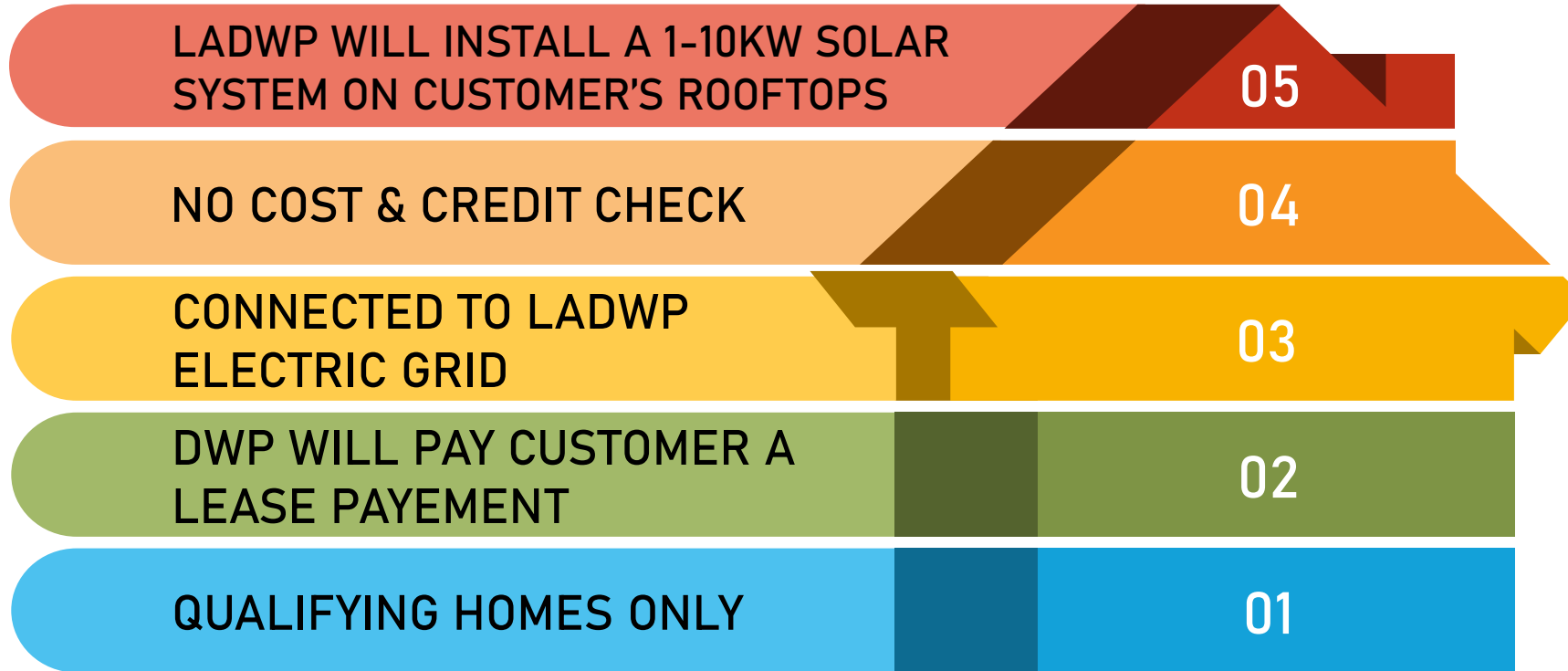
Project Size (Capacity)	Price of Energy
> 3 MW	13.5¢ per kWh
> 500 kW - 3 MW	14.0¢ per kWh
30 kW - 500 kW	14.5¢ per kWh

- The proposed VNEM Pilot Program will use up to 5MW of LADWP's current Feed-in Tariff Program capacity for 2-5 solar projects on multifamily residential buildings
- At least 40 % of the proceeds from the sale of energy generated will be allocated to tenants
- Participants in VNEM Pilot will be compensated at the Feed in Tariff rate, which varies depending on project size

Shared Solar Program



Solar Rooftops Program



Lease Payment by System Size				
System Size (kW)	≥ 1kW and <2kW	≥ 2kW and ≤5kW	> 5kW and ≤8kW	> 8kW and ≤10kW
Lease Payment(\$ per month)	\$20	\$30	\$40	\$50
Maximum Lease Payment (\$ over 20 years)	\$4,800	\$7,200	\$9,600	\$12,000

LADWP DR Goals

Demand Response



2030

2035

Demand Response Overview

- Strategic Demand Response Implementation Plan finalized and approved, with a 500 MW DR goal

2014



- C&I Demand Response Program was launched with the support of a contractor

2015



- C&I Demand Response Program in-house team began day-to-day operation of the program

2017



- An RFP for Residential Bring-Your-Own-Thermostat (BYOT) program was advertised through SCPPA

2019



- BYOT program, publicly marketed as Power Savers Program, was launched for residential & small commercial customers

2020



- LA100 study was completed
- As a result, key recommendations from LA100 were implemented

2021

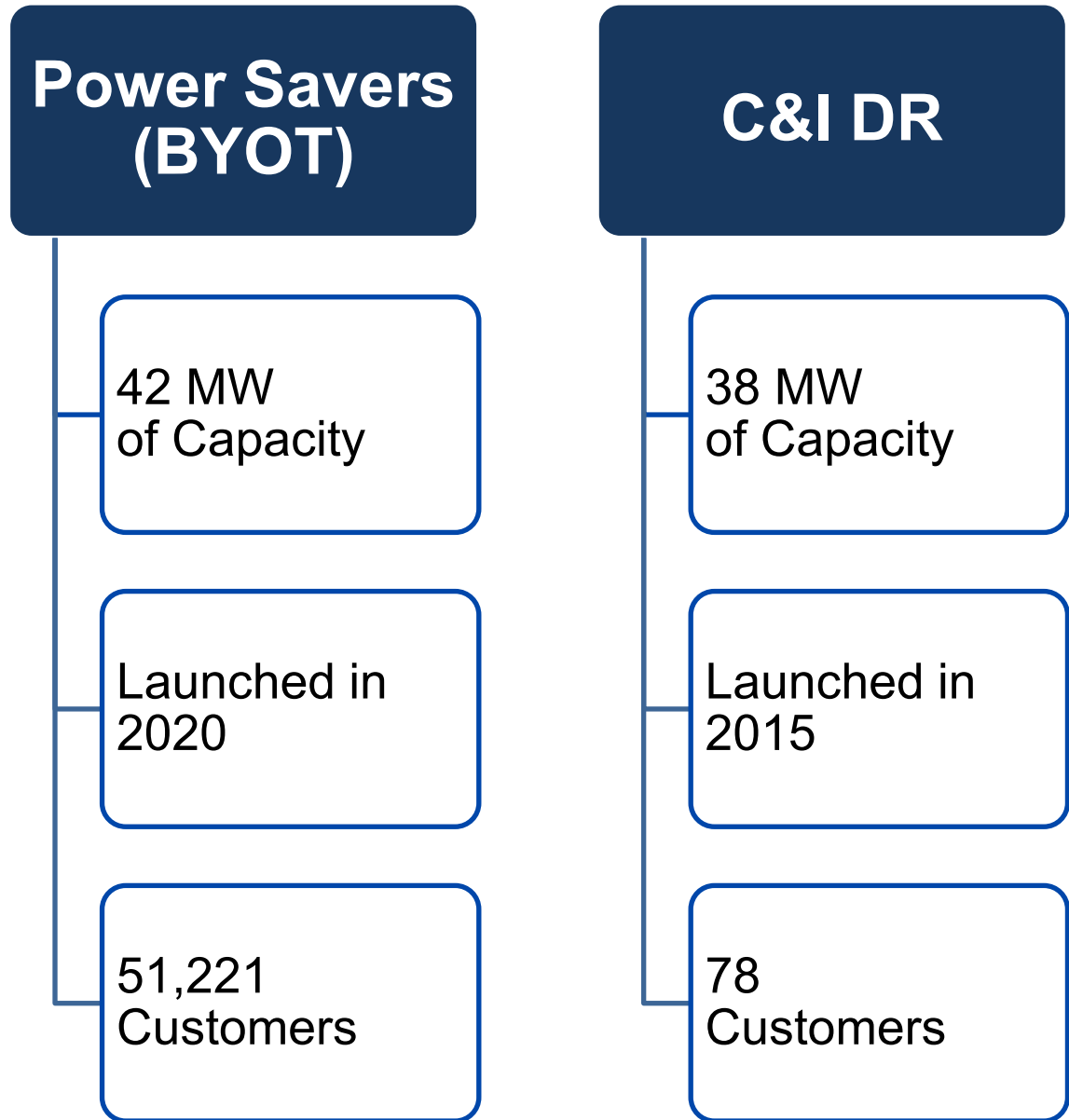


- LADWP has been working on a DR RFP to automate, consolidate program data and introduce new offerings
- RFP was advertised in April 2024

2022-2024



Existing Demand Response Programs



Power Savers Program

- 51,221 customers enrolled 60,724 thermostats
- Total energy saving since 2020 is 1,787MWh (33 events)
 - ❖ Equivalent to serving 465 homes for one year
- All-time Program Record:
 - ❖ Average peak demand reduction on Sept 9, 2024: **53 MWs**
 - ❖ Instantaneous peak demand reduction on Sept 9, 2024: **182 MWs**
- Offer enrollment and seasonal incentives
 - ❖ Enrollment incentive: \$65 per account
 - ❖ Seasonal incentive: Up to \$120 per account and based on performance



Power Savers Program



DR Season

- From June 1 through October 31
-



Program Parameters

- # of events: Maximum of 20
 - Event length: Up to 4 hours
 - Holidays are excluded
 - 1 pm – 10 pm PT
-

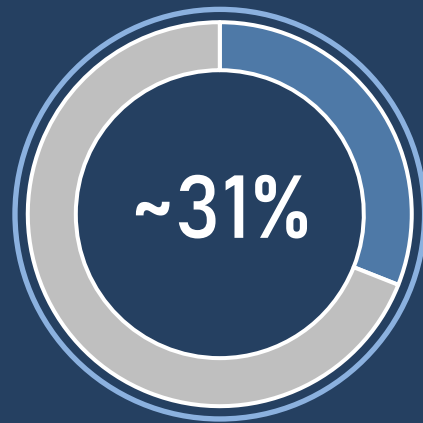


Event design

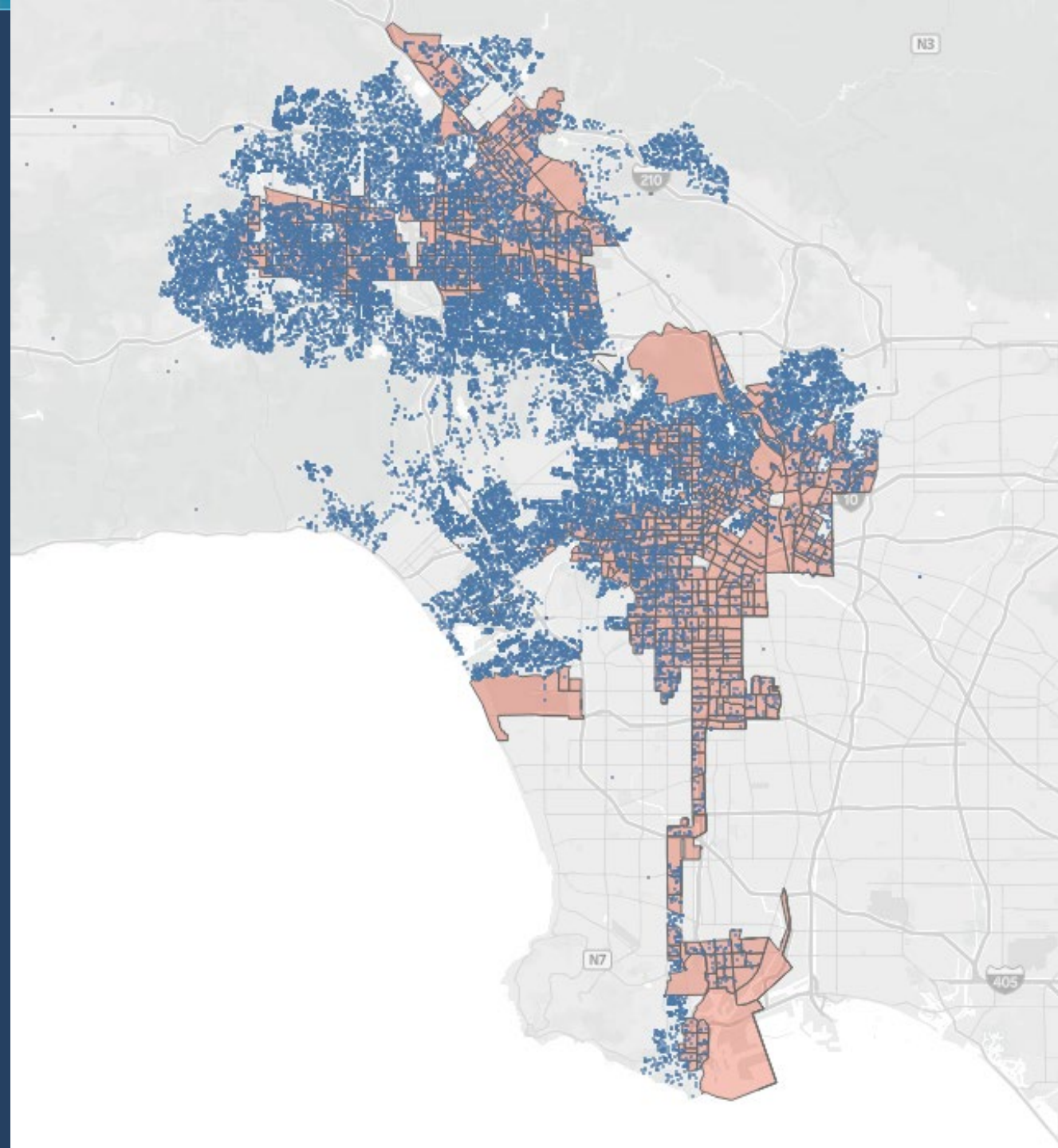
- Pre-cool
 - Up to 60 minutes
 - 2° offset
- Event
 - Up to 4 hours maximum
 - Up to 4° offset

Program Participants Located in Disadvantaged Communities

(SB 535 and CaliEnviroScreen 4.0)



Power Savers Program



Commercial and Industrial DR Program

- Launched a Pilot program in 2015
 - Supported by consultant at inception
- Currently over 38MW
 - Managed by LADWP staff
- Participation: 78 customers spread over 1200 locations

Program Participants



Manufacturing Plants



Office Buildings



Retail Buildings



Entertainment Studios



Indoor Agriculture



Educational Institutions



Museums



Cold Storage Facilities



Hotels



Pumping Stations

Program Parameters

C&I Program

For Large Commercial and Industrial Customers

Commitment	Notification	Incentive	Season	DR Event
Requires a commitment <u>Minimum of 100kW</u> of Load Reduction	2-Hour or 24-Hour Advanced Notification	<ul style="list-style-type: none">Capacity: \$12 or \$8 per kW/moEnergy: \$0.25 per kWh	From June 15 through October 15	<ul style="list-style-type: none">Maximum 12 Events1 p.m. to 6 p.m. on WeekdaysUp to 4-hr Duration

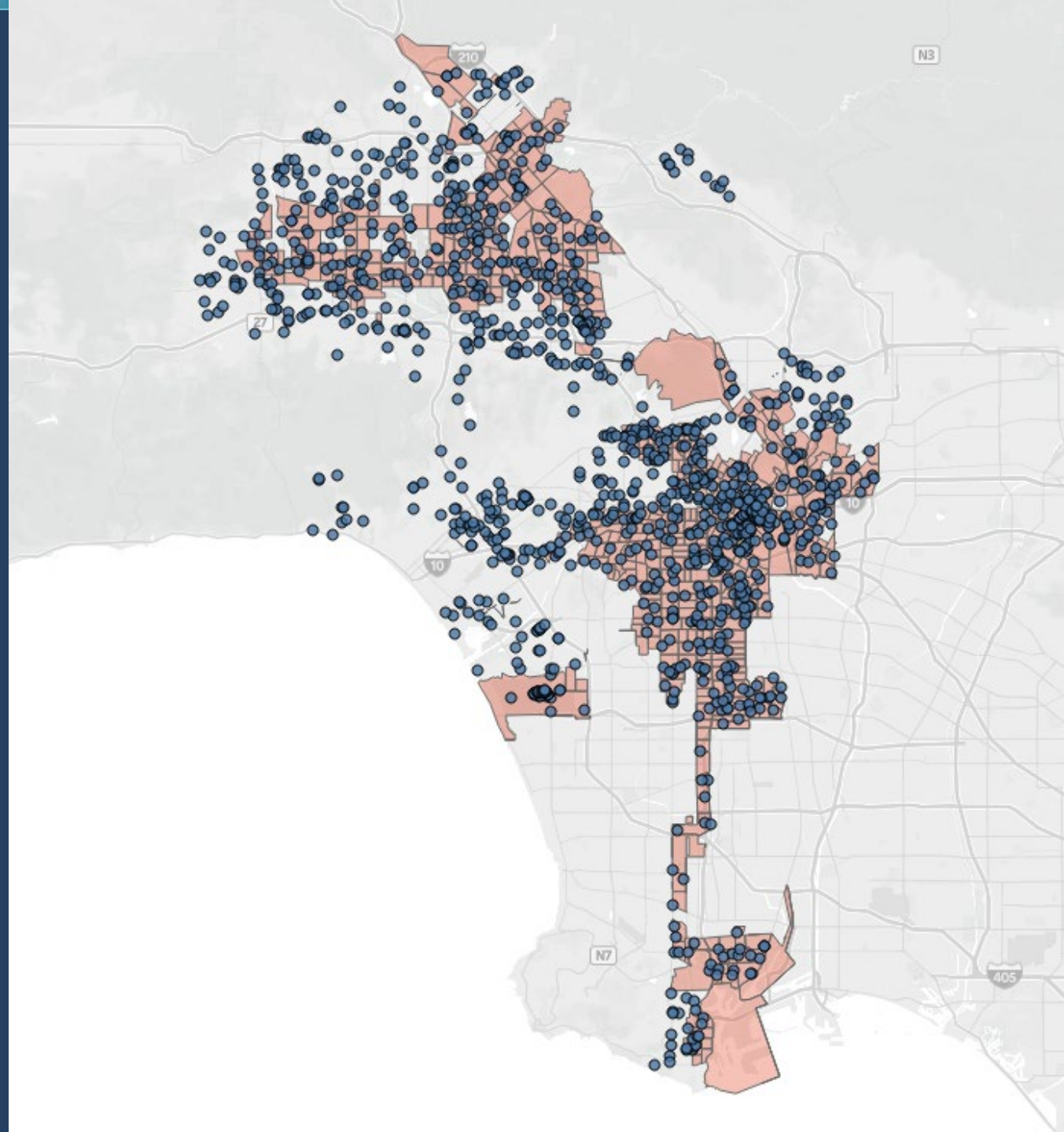
Managed by Internal DR Group with support from internal Stakeholders (Key Account Management, Rates Group, Corporate Communications, ECC, FSO)

Program Participants Located in Disadvantaged Communities

(SB 535 and CalEnviroScreen 4.0)

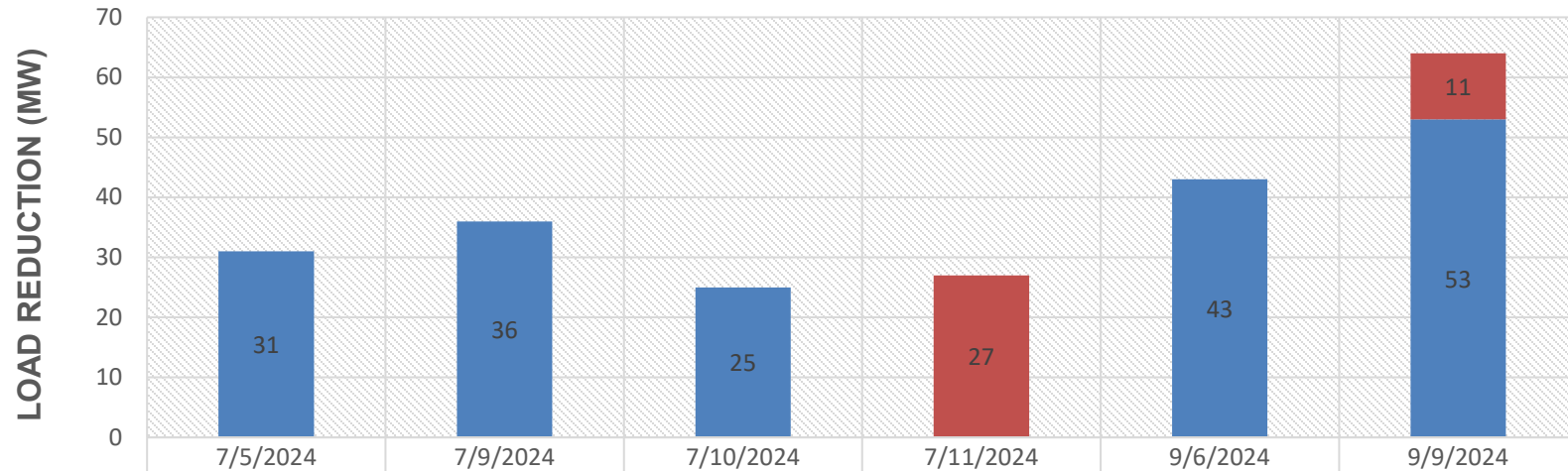


Commercial and Industrial
Demand Response Program



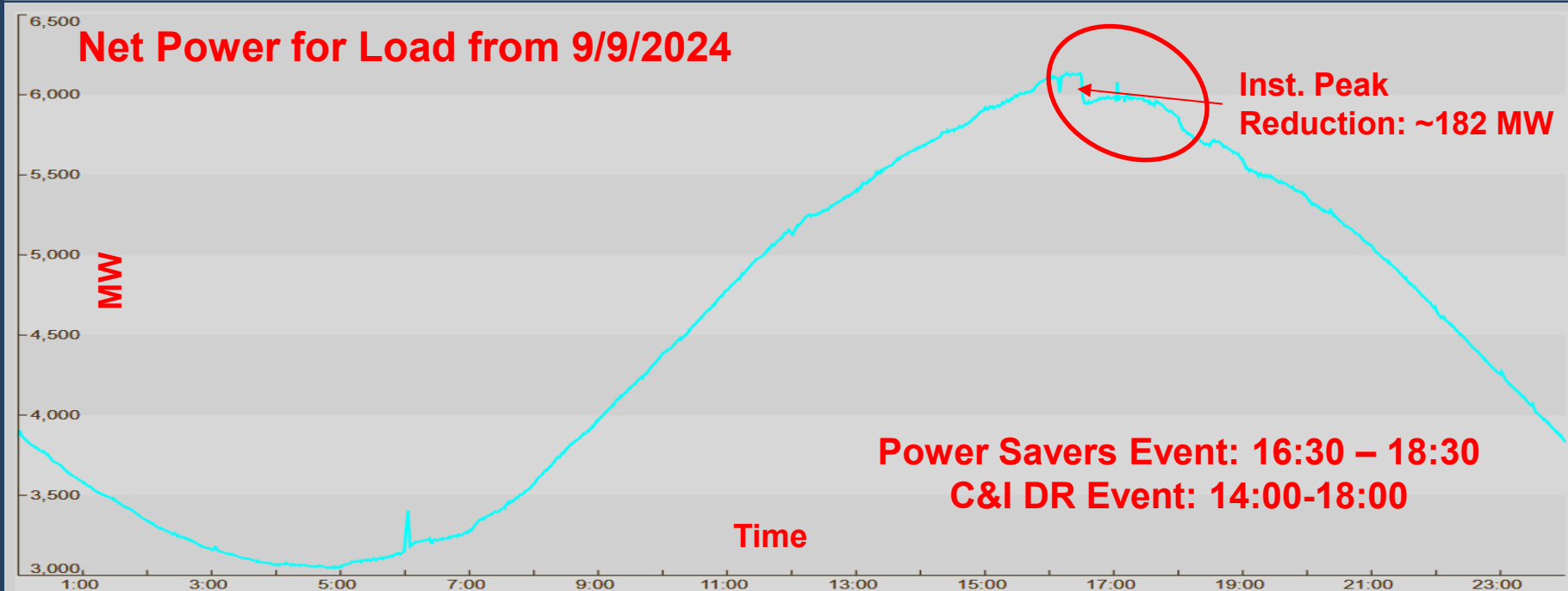
Impact of DR Programs

2024 DR SEASON - AVG. LOAD REDUCTION PER EVENT



	7/5/2024	7/9/2024	7/10/2024	7/11/2024	9/6/2024	9/9/2024
C&I DR Program (MW)	0	0	0	27	0	11
Power Savers Program (MW)	31	36	25	0	43	53

2024 DR EVENT DATES




The Future - Upcoming DR RFP



Accelerate the integration of DR resources onto the grid



Implement automation and efficient data processing for DR Programs



Expand existing DR Programs to achieve the LA100 goals



Develop new DR Programs using latest available technologies



Enable surgical dispatch of DR resources by grid operators



Promote equity for customers through DR Programs by use of external funds



Thank you!

All Solar Programs:
www.ladwp.com/solar

Power Savers Program:
www.thermostatrewards.com/ladwp

Commercial and Industrial DR Program:
<https://www.ladwp.com/drprogram>



**USC CREDIT
UNION**

Hub Talk With LADWP and USC Credit Union

Sustainable Upgrades to Your Home, And How To Pay For Them





About USC Credit Union

For People, Not For Profit

USC Credit Union was founded in 1973 for a small group of USC employees.

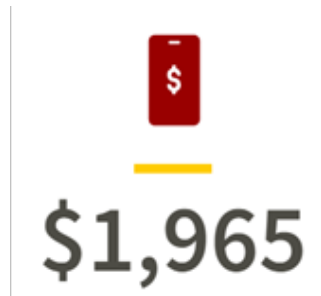
50 years later, we're proud to serve the unique needs of our 80,000 member-owners.

Who We Serve

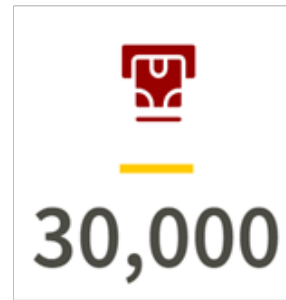
USC staff, faculty, students, alumni, Los Angeles County and Orange County, and all family members and relatives!



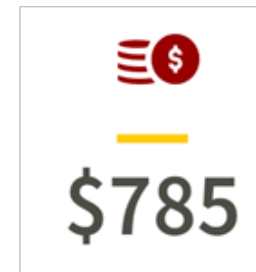
of profits go back to member-owners



Avg. annual savings for member households



Free CO-OP Network ATMs nationwide



million in assets



USC Credit Union Member-Owner Benefits



*You're an Owner,
Not a Number.*

*Better Rates.
No or Low Fees.*



Personal Attention

*Not for Profit.
No Stockholders.*



*Cooperative Movement.
You Have a Voice.*

*Your Deposits are
Insured and Safe.*

Why Finance with USC Credit Union?



Competitive Rates – Enjoy lower rates on loans for everything from solar panels to energy-efficient home improvements and clean-energy vehicles.



Personalized Service – Our team is dedicated to providing guidance and support tailored to your unique financial and sustainability goals.



Local Expertise – As a part of the USC community, we understand your needs and offer services built for Trojans and our neighbors.



Flexible Terms – We offer customizable loan terms, making it easy to find an option that fits your budget and timeline.



Commitment to Sustainability – Financing with us means supporting a credit union that actively promotes sustainable initiatives for a cleaner future.



Our Commitment to Sustainability

USC Credit Union supports clean energy and climate resilience with affordable and accessible financing options for:



Solar Loans



EVs



Home
Improvements



E-Bikes

Our 4 Core Impact Areas



AFFORDABLE
HOMEOWNERSHIP



CLEAN AND
RENEWABLE ENERGY



SMALL BUSINESS &
ENTREPRENEURSHIP



FINANCIAL
INCLUSION



x



Arbor Day Foundation[®]

With each funded clean-energy loan, USC Credit Union and the Arbor Day Foundation[®] will plant up to 5,000 trees in the Los Padres National Forest

No One Size Fits All Solution

Larger Projects

- Home Equity Loans (HE Loan)
- Home Equity Lines of Credit (HELOC)
- Solar Loans
- Solar Lease*

Medium to Smaller Projects

- Electric Vehicle Loans
- Personal Loans
- Credit Cards

*Solar leasing can gain you access to a system, but misses out on tax credits and long-term financial benefits. A solar loan allows you to benefit from tax credits, increase your home's value, and ultimately save more in the long run.