Sunrun Grid Services Business Overview

Opportunities to Partner with SMUD on the Path to a Carbon- Free 2030

Presentation to SMUD Board of Directors
January 2021

sunrun

Distributed Energy Resources can be a critical part of the path toward SMUD's Zero Carbon commitments

Sunrun applauds SMUD's ambitious Zero Carbon by 2030 commitment

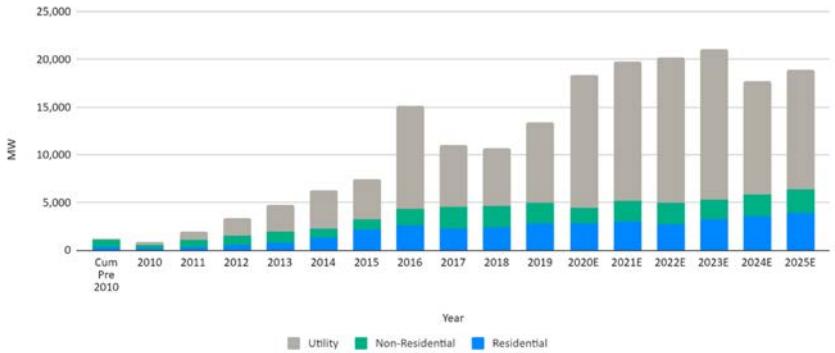
A critical part of achieving this will be leveraging **all available and proven clean energy technologies**

DERs like **customer-sited solar and battery storage** can be key building blocks for the path to a zero-carbon future

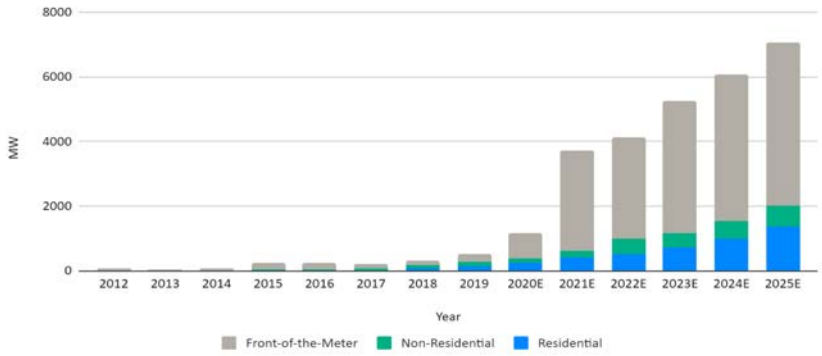
As the market leader in residential solar and battery storage (over 14,000 battery systems deployed nationwide), **Sunrun is excited to partner with SMUD to deliver a carbon-free 2030**

National Distributed Energy Trends

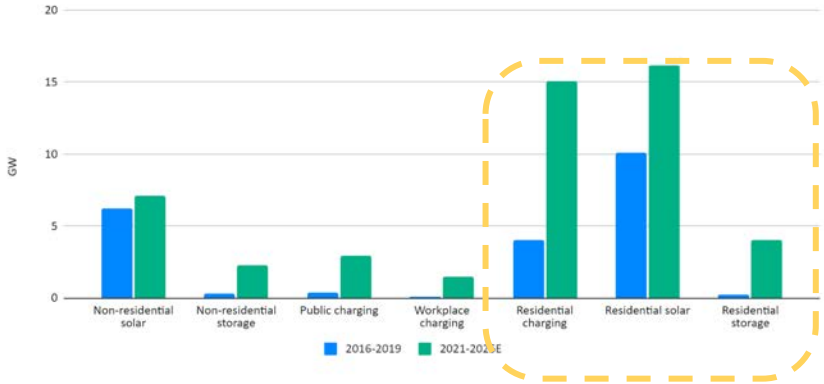
US Annual Solar Deployment by Type (MW)



US Annual Storage Deployment by Type (MW)



US Annual DER Deployment by Type (GW)



Source: WoodMackenzie Power & Renewables

Key Residential Growth Drivers

- Dramatic decline in solar and battery storage costs
- Utility rate increases due to aging infrastructure
- Focus on resilience, safety, and grid stability
- Consumer trends towards electrification (i.e., EV, smart home, etc.) and sustainability

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How do solar and battery storage work?

1

Solar Panels produce electricity when the sun is shining, providing electricity to the home and reducing the electricity purchased from the utility

2

Inverters convert the electricity from DC (direct current) energy to AC (alternating current) energy

3

The Battery stores the electricity to use it when it is needed most, either to reduce utility costs or for resiliency

4

Sunrun's Meter monitors the solar production to ensure optimal performance

5

When the system generates more than needed, the excess electricity is sent back to the Utility and credits are applied to the electricity bill

Benefits of Residential Battery Storage

Resiliency: help single-family and multifamily customers power through uncertainty with clean, constant, and immediate home backup power

Local Capacity / Peak Reduction : optimized dispatch can be used to shape the aggregate load profile and reduce costs to the utility

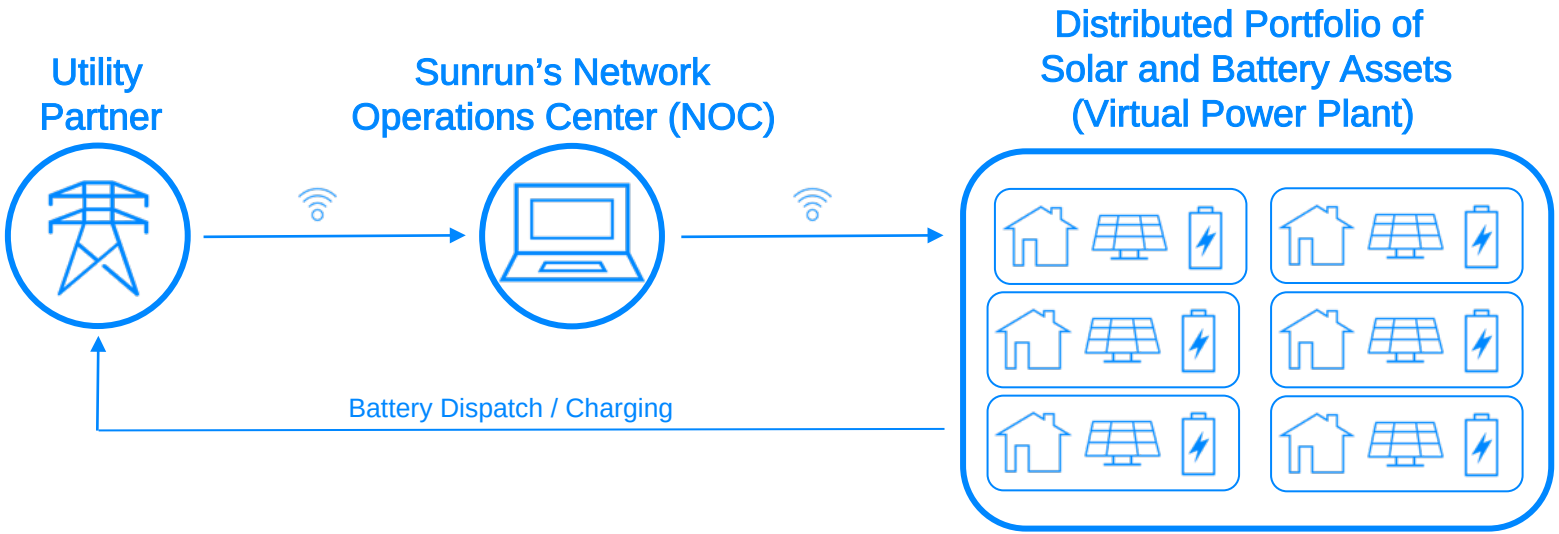
Customer Engagement : co-branded marketing provides an additional way to engage with customers and provide value

Alignment with Consumer Sentiment : pushing utilities to transition to clean energy sources

Non-Wires Alternatives : local resources can delay, reduce, or even eliminate need to upgrade transmission and distribution lines

Expanding Reach of Other Utility Programs: partner to drive interest in other programs like Critical Peak Pricing, EV incentives, etc.

Sunrun Utility Grid Services Capabilities



Customer Experience

- Customer and asset DER enrollment
- Customer care & support
- Sales & marketing
- Operations & maintenance

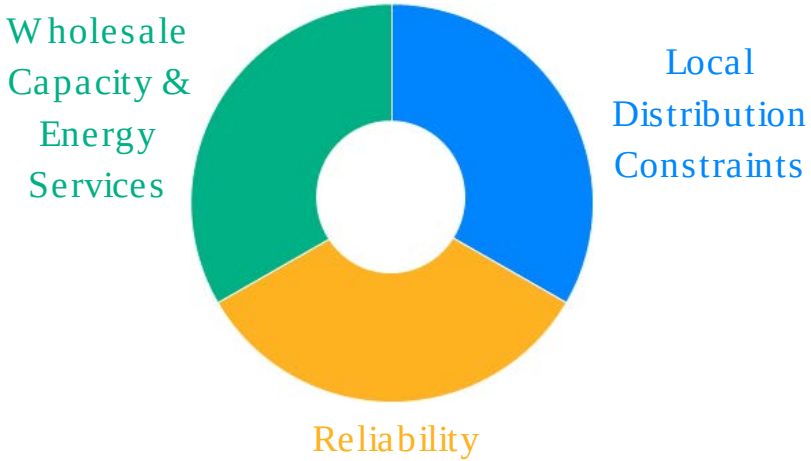
Integration Platform & DER Operations

- Third party technology integration and management
- Distributed system operations and dispatch control
- DER management software and platform
- System monitoring & maintenance

Sunrun Leads in Grid Services Programs

Virtual Power Plants have already been established in markets with ~7 million potential participants (1)

We offer Brightbox throughout our service territories and have more than **$50 million** of grid service revenue either already contracted or in the pipeline. We have now developed 'proof of concept' programs in **10% of our geographies** .(2)



Partner	Type	Value Delivery Objective
ISO New England	ISO / RTO	20 MW of wholesale capacity
Hawaiian Electric Company	IOU	Capacity, load reduction, and frequency response
East Bay Community Energy	CCA(3)	Local capacity to replace retiring fossil fuel plant; Local capacity, peak demand reduction, development in low income communities
Green Mountain Power	ESCO	Local capacity through "bring your own device" program
PSEG	IOU	Local capacity through "bring your own device" program
Southern California Edison	IOU	Capacity, flexible demand reduction during peak events, and local development in low income communities
Orange & Rockland	ESCO	Local capacity, non-wires alternative
Silicon Valley Clean Energy	CCA	Local capacity, peak demand reduction, development in low income communities
Peninsula Clean Energy	CCA	Local capacity, peak demand reduction, development in low income communities
Glendale Water & Power	Muni	Local capacity, non-wires alternative

(1) Based on total utility customers in geographies where grid services programs have been established, based on company data and EIA data
(2) 2Q 2020 earnings conference call, August 10, 2020
(3) Community Choice Aggregator (CCA)

Case Study - Glendale Water and Power

Background

- The city is preparing for a 15% increase in Peak Demand over the next 20 years due to EV adoption
- Grid is in a transmission constrained load pocket, and ratepayers are opposed to new thermal generation capacity
- Growing interest in solar and batteries among single and multifamily owners and renters

Sunrun Solution

- Partner with the utility to enroll residents into a virtual power plant program that installs solar and batteries on single-family and multifamily residential properties with a goal of >20 MW in aggregate
- Sunrun manages customer acquisition, installation, and O&M
- Sunrun sells energy and capacity from the virtual power plant to Glendale Water and Power over 20 years

Glendale Water and Power Profile

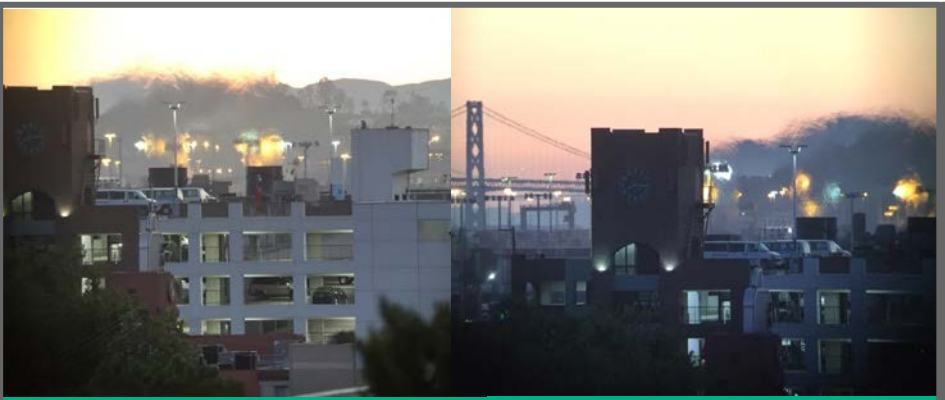
Peak Demand: 344 MW

Annual Load: 1,452 GWh

Location: Glendale, CA

Utility Type: Municipally Owned

Rolling Blackouts Underscore the Critical Need for Dispatchable Capacity and Local Resiliency

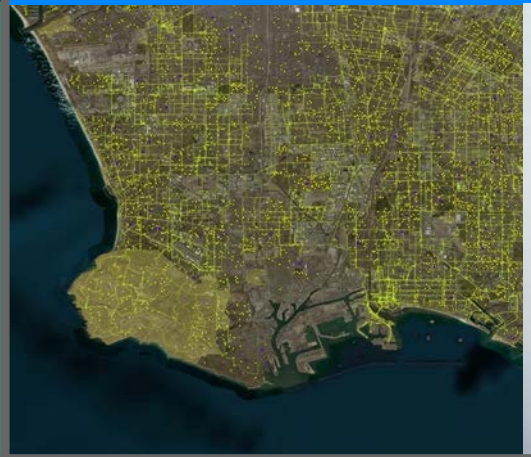


During recent CAISO rotating outages, Dynegy/Vistra jet fuel power plant in Oakland was running overtime - flooding a community of concern with toxic emissions.

Sunrun is helping to shut that plant down by deploying a VPP comprised of resilient solar+battery storage projects for low-income multifamily residential customers in West Oakland.

During this same time, Sunrun was called by our partners at SCE to ensure our batteries were helping the grid manage near-record demand.

We are deploying a VPP comprised of hundreds of solar+battery systems to help SCE manage current and emerging grid conditions via Demand Response.



Collaborating with Community Choice Aggregators to deliver resiliency, clean capacity, and bill savings

- Sunrun recently won contracts with multiple CCAs to deliver system capacity / reliability products
- Capacity will be delivered by thousands of aggregated single-family and multifamily residential solar+storage systems, which provide bill savings and critical resiliency to diverse range of CCA customers, in advance of upcoming fire and "Public Safety Power Shutoff" season
- Unique co-marketing programs enable us to reach priority customers much more quickly and efficiently, while amplifying CCAs' brand and customer presence