

Distributed Energy Resource: Plan – Part 1

Board of Directors
May 23, 2024



Agenda

- Overview of Programs
- DER Vision, Definitions & Objectives
- Current Programs
- Near-Term Plans

DER Plan: 2 parts

Part 1 (May)

1. DER Vision, Definitions & Objectives
2. Current Programs
3. Near-Term Programs & Timeline (1-2 yrs)

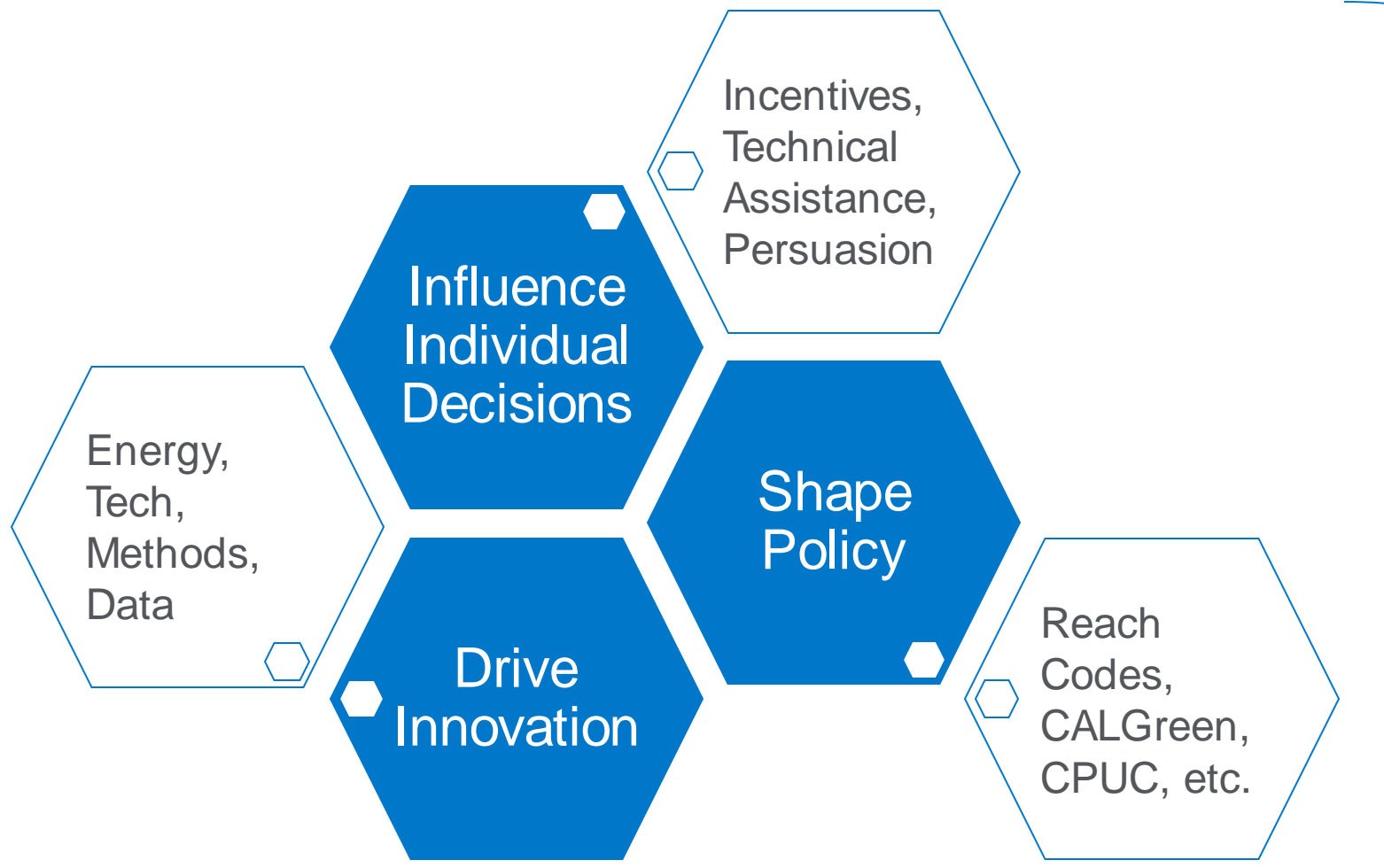
Part 2 (TBD)

1. Quantification: what we have, what we want to achieve
2. DER Challenges
3. Innovation
4. Policy Needs
5. Future Concepts (3-5+ years)

Overview of Programs

The background features a large, light blue circle on the right side. To its left, there is a cluster of numerous small, yellow-green dots of varying sizes, some of which are partially enclosed by the blue circle. The overall aesthetic is clean and modern.

How We Effect Change



1. **Demonstrate** scalable **methods** for CA to adopt

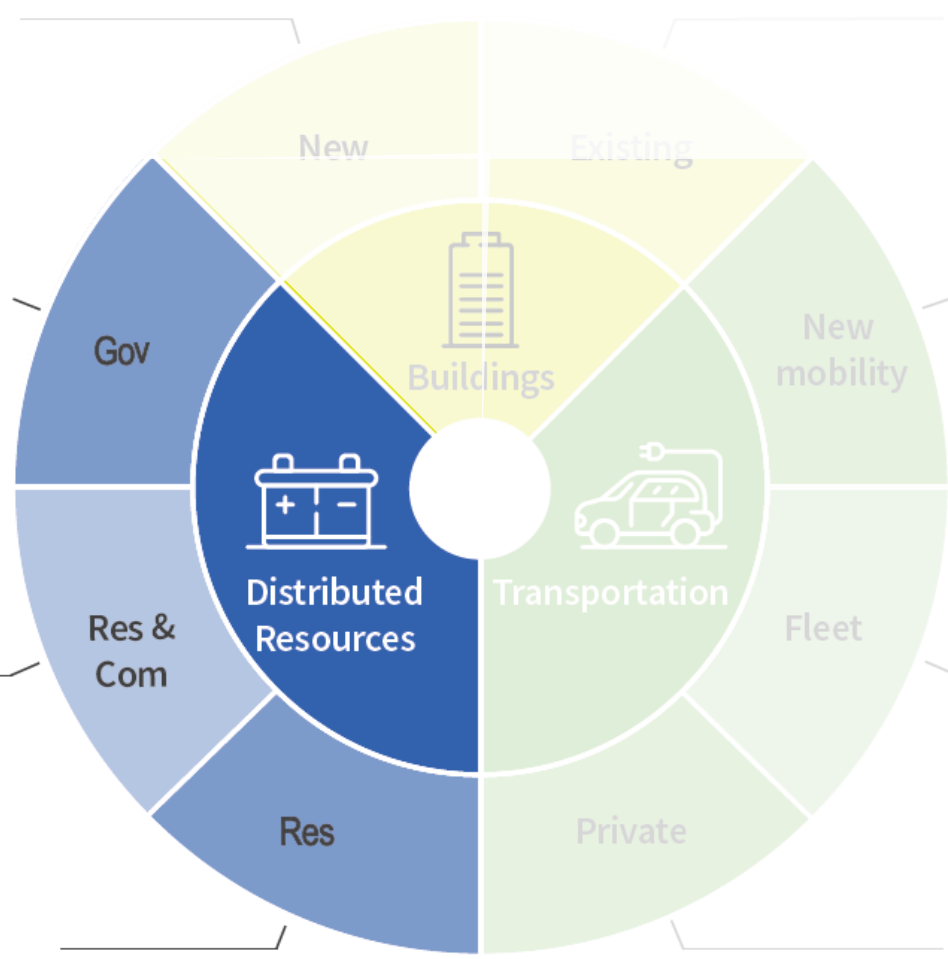
And

2. Mobilize **market forces** to support decarbonization

Programs Portfolio



Reach codes
Technical asst.



Appliance incentives & finance
Income-qualified homes*
Local Gov incentives & finance



Solar + storage

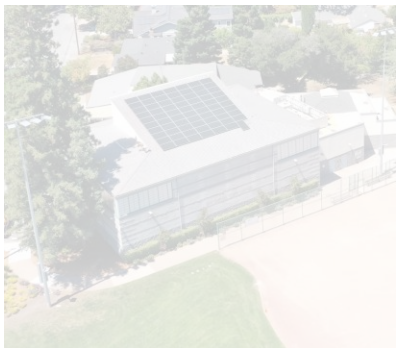
E-bikes*

Virtual power plant

Gov fleets

EV Managed Charging

EV incentives*
EV charging incentives & technical asst. +



Solar & storage



* Low-income program + Includes low-income benefits

Distributed Energy Resources (DER) Plan

Part 1



Distributed Energy Resources Definition

*Distributed Energy Resources (DERs) are **assets** on the distribution grid, typically **close** to load, and usually **behind the meter**, which can be used individually or in **aggregate** to provide **value** to the **grid and individual** customers.*



Virtual Power Plant (VPP): Definition

*Network of distributed energy resources
dispatchable for grid services*

PCE DER Objectives

- Provide **grid benefits**, especially peak shaving to reduce wholesale costs and carbon intensity, aiding further penetration of renewables
- Provide **resilience**
- **Lower operating costs** for customers
- Make **electrification** more economically beneficial
- Deepen PCE-customer **relationships** and foster retention
- Reduce PCE costs and support self-sufficient business model

Current Programs

Residential solar and storage

Incentives for installations.
Provides “load modification” value to PCE.



Size: ~600 homes Status: Enrollment closed

Solar & storage on public buildings (“GovPV”)

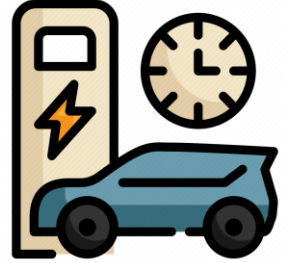
PCE provides all project development and procurement, no upfront cost.
Currently solar-only projects.



Size: 12 sites, 1.7MW Status: 22+ in rnd 2

EV managed charging (Resi & GovEV)

Shifts charging to best time for grid. Residential: Telematics based. Upfront incentive to enroll. GovEV: Part of fleet management & charging.



Resi Size: ~700 enrolled Status: general start

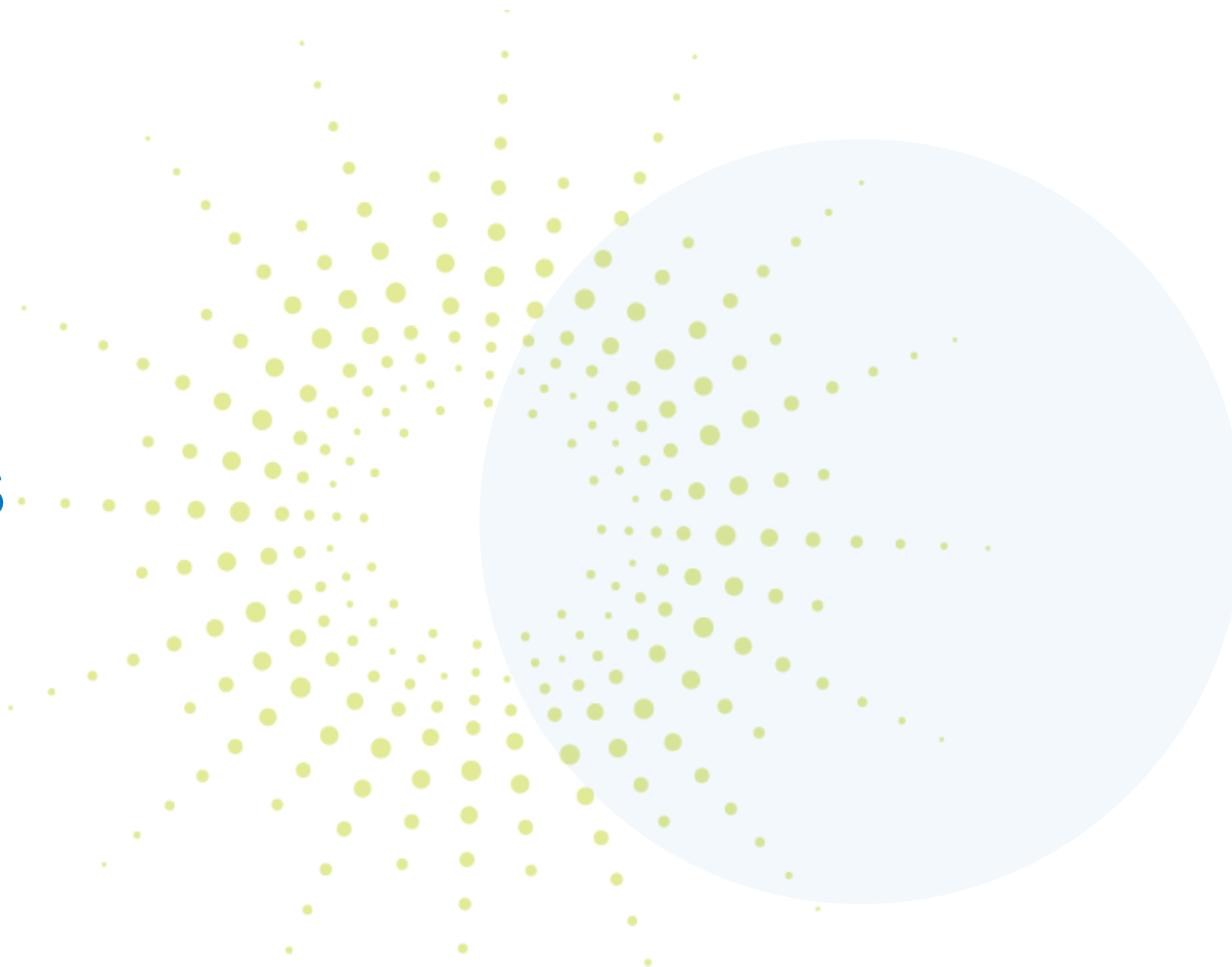
FLEXmarket

Pay for performance incentives to contractors for efficiency and electrification. All sectors. Higher incentives for grid benefits.



Size: \$4.6M from CPUC Status: Rnd 1 ongoing

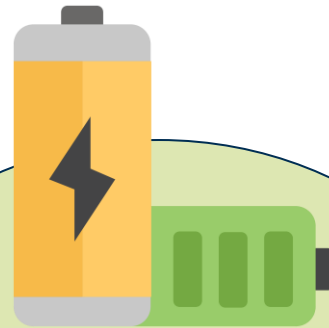
Near-Term Plans



Residential: Three Services



Right-sized resilience



Fixed battery storage
(and solar)



“Virtual power plants”



New Residential Solar & Storage Program

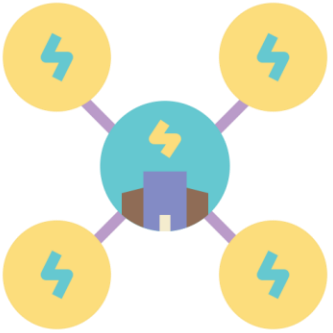


PCE Finance



PV + Battery

Customer selects providers



PCE Grid Services

Community DERs: Adding storage to GovPV

1. Add storage to existing sites
2. Develop new sites with solar and storage

Includes:

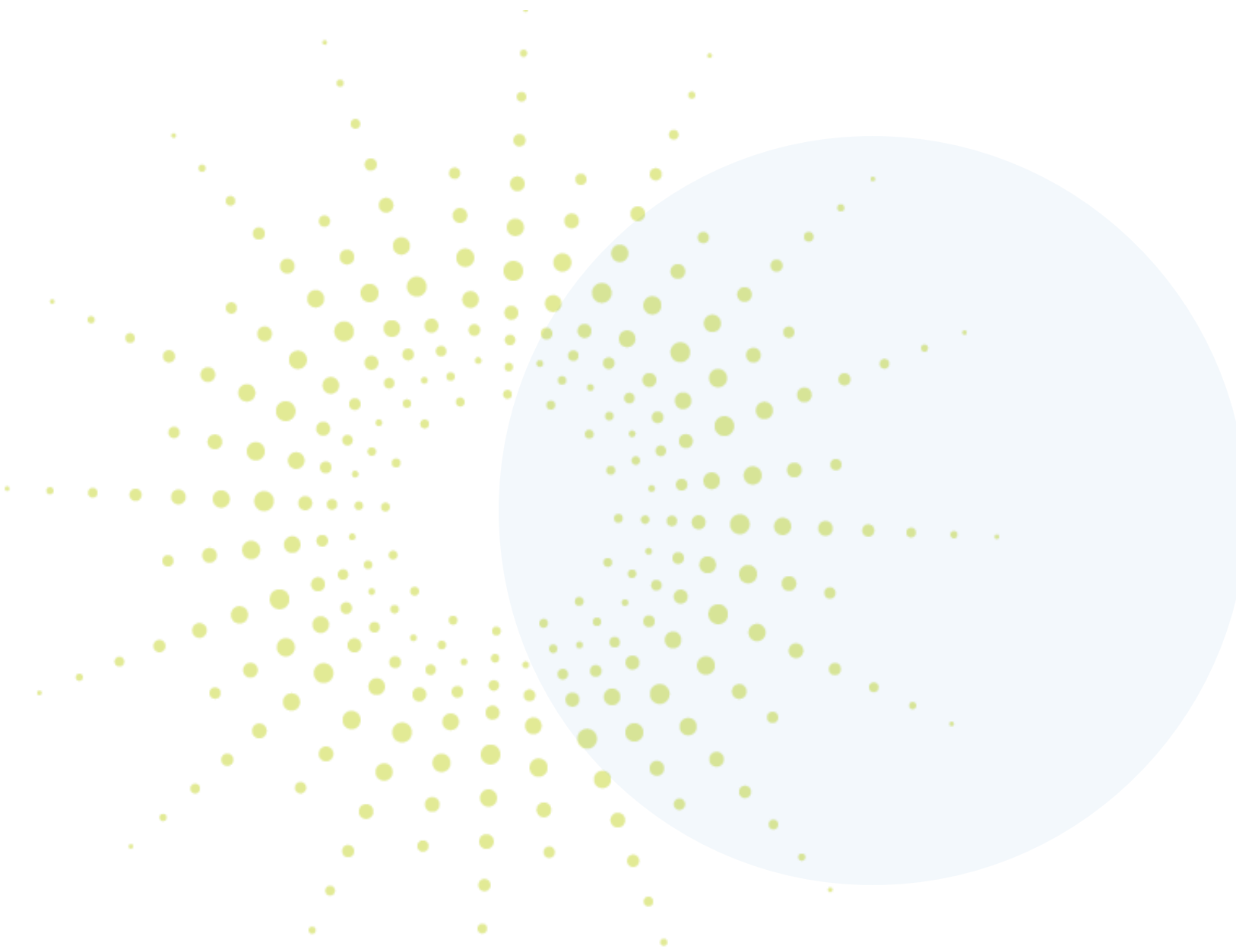
1. New financial and operating model
2. Third-party finance
3. Grid services integration



Timeline

	2020	2021	2022	2023	2024	2025	2026
Buildings		LI Home Upgrade			Home Upgrade v2	VPP homes	
Local Generation & DERs	Resi solar & storage v1				Resi solar & storage v2		
	GovPV		Rnd 1 installs, Rnd 2 start		GovPV2 install	GovPV2b batteries	Round 3 start (add sectors)?
			FLEXMarket		EV Managed Charging (resi & fleet)		
Innovation	EV Mg Chg Pilot I		EV Mg Chg Pilot II				
		Harvest Thermal				V2B pilot?	Microgrid?

Backup



Programs: Recent Highlights

1. Buildings & Appliances

- Reach Codes: State-leading, 19 agencies adopting building & EV codes
- Retrofits: 10x acceleration in 2023, est. 2,500 heat pumps



2. Electric Vehicle Charging

- 1000 ports installed, 2/3rds in multifamily, highest need segment
- Innovation in approach, \$4,000 avg per port (vs PG&E \$18k)
- EV managed charging pilot in-progress



3. Distributed Resources

- GovPV Round 1: 12 sites, 1.7 MW solar, CY2024, ~\$17M customer savings
- GovPV Round 2: ~20-30 sites, 6-16 MW, contracting in-progress
- Load modification with residential PV+ESS program



Highlights – Underserved Communities

1. Electric Vehicles: 570 vehicles

- \$6 million in savings over 10 years
- 30,000 MT CO2 over 10 years

2. Home Upgrade: 300 homes completed

- Home repairs plus electrification
- 2024 ramp-up: more homes, whole-home retrofits

3. E-Bikes: over 800 bikes

- Extremely popular
- >50% of trips displace car trips

