

Exhibit to Agenda Item #1

Provide the Board an update and status of customer programs under the **2030 Zero Carbon Plan.**

Board Energy Resources & Customer Services Committee and Special SMUD
Board of Directors Meeting

Wednesday, September 18, 2024, scheduled to begin at 6:00 p.m.

SMUD Headquarters Building, Auditorium

2030 Zero Carbon Plan

Customer programs & initiatives

September 18, 2024

Powering forward.
Together.

Board Energy Resources & Customer Services Committee and Special SMUD Board of Directors Meeting



Zero Carbon Plan Overview



Zero Carbon customer program portfolios



Building electrification & energy efficiency

Helping customers decarbonize their homes and workplaces by optimizing and managing their electricity use and converting from gas to efficient electric equipment.



Distributed energy resources/load flexibility

Programs and options to participate in building our Virtual Power Plant to help shift and manage loads during times when energy is needed or when excess energy is available.



Transportation electrification

Incentives, information and special rates to help customers purchase and charge EVs for homes and businesses.



Green pricing

Gives customers the ability to opt in and select a level of renewable and/or carbon-free electricity that meets individual or corporate objectives above and beyond our standard retail rates.

Building electrification & energy efficiency

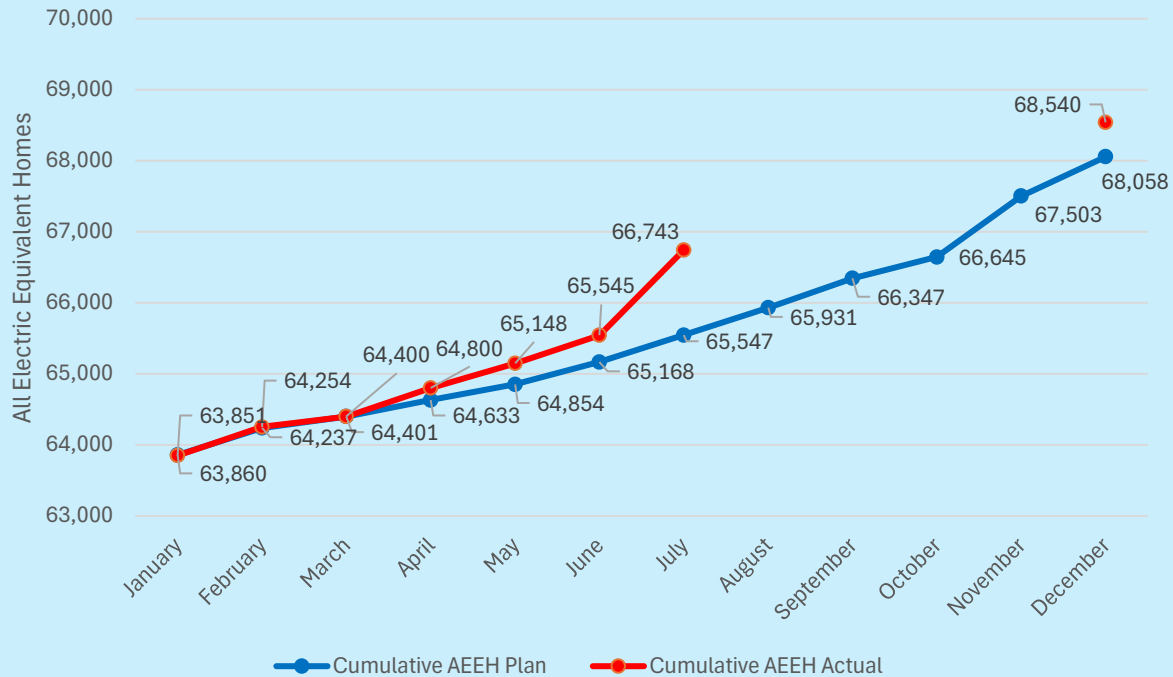


Helping customers decarbonize their homes and workplaces by optimizing and managing their electricity use and converting from gas to efficient electric equipment.

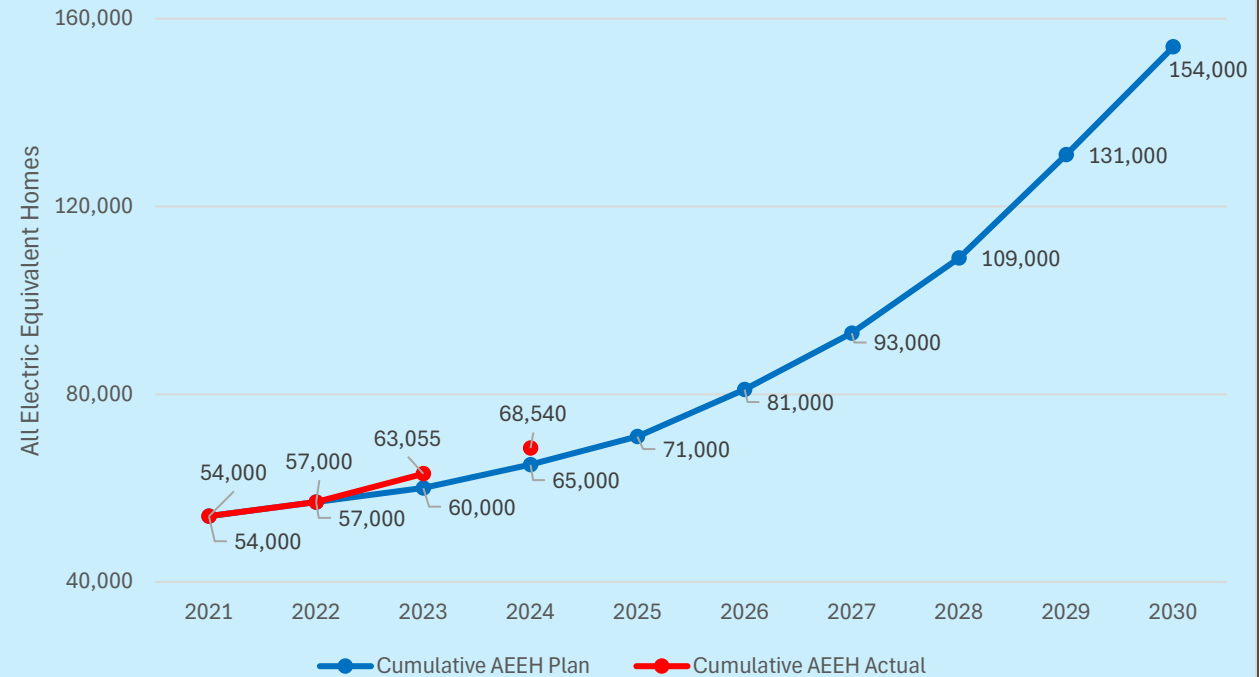
Building electrification & energy efficiency

Customer program portfolio status

2024 All Electric Equivalent Homes



All Electric Equivalent Homes by 2030





Building electrification & energy efficiency

Key metrics & milestones

	2023 Final	2024 Goal	YTD (July)	2024 Forecast
Heat pump HVAC conversions	2,914	3,805	2,493	4,280
Heat pump water heater conversions	940	1,583	1,457	2,008
Induction cooktop conversions	392	410	194	349
Smart homes				
• Single-family homes	562	450	218	686
• Multifamily units	1,363	850	517	1,072
Multifamily units retrofitted	1,113	660	363	1,223
Income qualified home electrification retrofits	791	882	496	882
Commercial retrofit and new construction projects	324	330	156	417
All electric equivalent homes (cumulative)	63,055	68,058	66,115	68,540

Program milestones:

- Solid year-over-year increases in electrification project installations
- Expansion of Home Electricity Reports
- SMUD Contractor Network growth
- Community Impact Plan offerings
- Commercial building electrification uptake
- Launch of statewide all-electric residential new construction program (CalEHP)

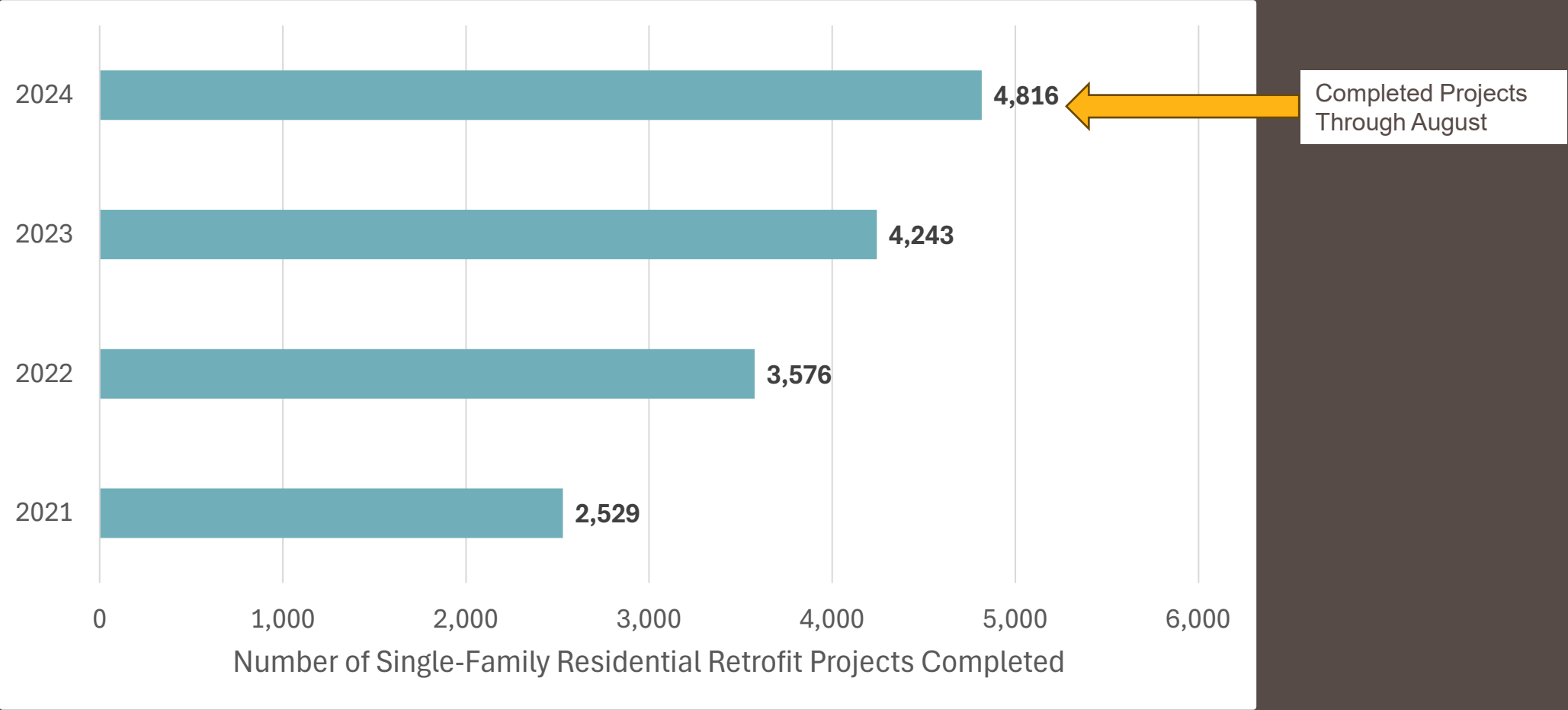
Looking ahead:

- Statewide potential study - Spring 2025
- Coordination with State/DOE IRA programs
 - HOMES, HEEHRA
- Adapting programs to next code cycle
- Grants and financing options



Building electrification & energy efficiency

Residential retrofit project completions





Building electrification & energy efficiency

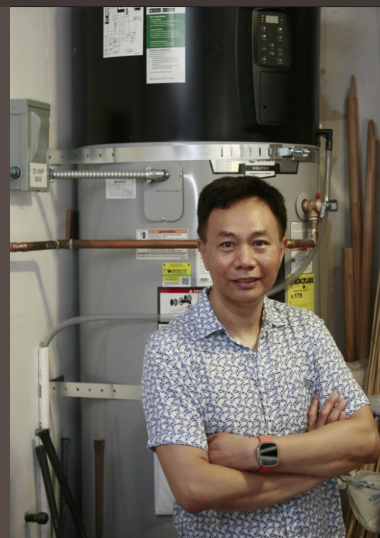
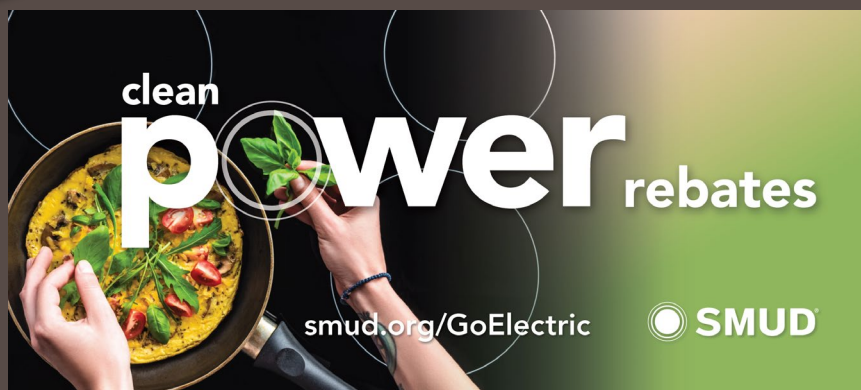
Key program incentives*

	Equipment Type	Incentive	Criteria
Residential	Heat pump HVAC	Up to \$3,000	Variable stage heat pump for maximum rebate
	Heat pump water heater (HPWH)	Up to \$1,500	50+ gallon tank. Must meet Advanced Water Heater Specifications
		Up to \$2,000	65+ gallon tank. Must meet Advanced Water Heater Specifications
		Up to \$2,500	80+ gallon tank. Must meet Advanced Water Heater Specifications
	Induction stove/range	Up to \$750	Convert from gas to induction (24" or larger)
	Go Electric / Panel upgrade	Up to \$2,000	\$500 per circuit needed or \$2000 for panel upgrade
Commercial	Gas to Electric Heat pump HVAC	<=3 tons, \$2,000 per ton >3 tons, \$1,500 per ton	<ul style="list-style-type: none"> - Single-zone and multi-zone inverter driven heat pumps (mini split) - Packaged & split-system heat pumps - Variable Refrigerant Flow (VRF)
	Heat pump water heater	\$4,500 per unit	Residential-style, converted from gas to electric heat pump
		\$7,000 per unit	Commercial-style, converted from gas to electric heat pump
		\$5,000 per unit	Split-system, converted from gas to electric heat pump
	Commercial induction range	\$1,000 per unit + \$800 per Hob	Convert from gas to induction
	Go Electric infrastructure upgrades	Up to \$50,000	Transformer and main panel incentives available when electrification projects require equipment upgrades.

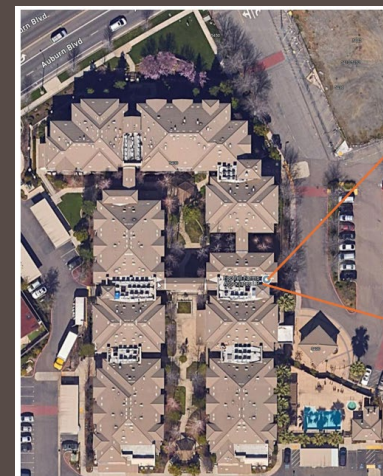
(*) Current incentives, subject to change



Building electrification & energy efficiency Highlights



Heat pump water heater replacement for Mr. Yu



Foothill Farms Multifamily Complex Electrification



State Fair-induction cooking demonstration featured on Good Day Sacramento



May Lee Office Complex commercial all-electric kitchen



Sammy's Restaurant



Costco – 1600 Expo Parkway heat pump RTU conversion



Building electrification & energy efficiency

Project example: Energy efficiency & EV charging



Transportation electrification



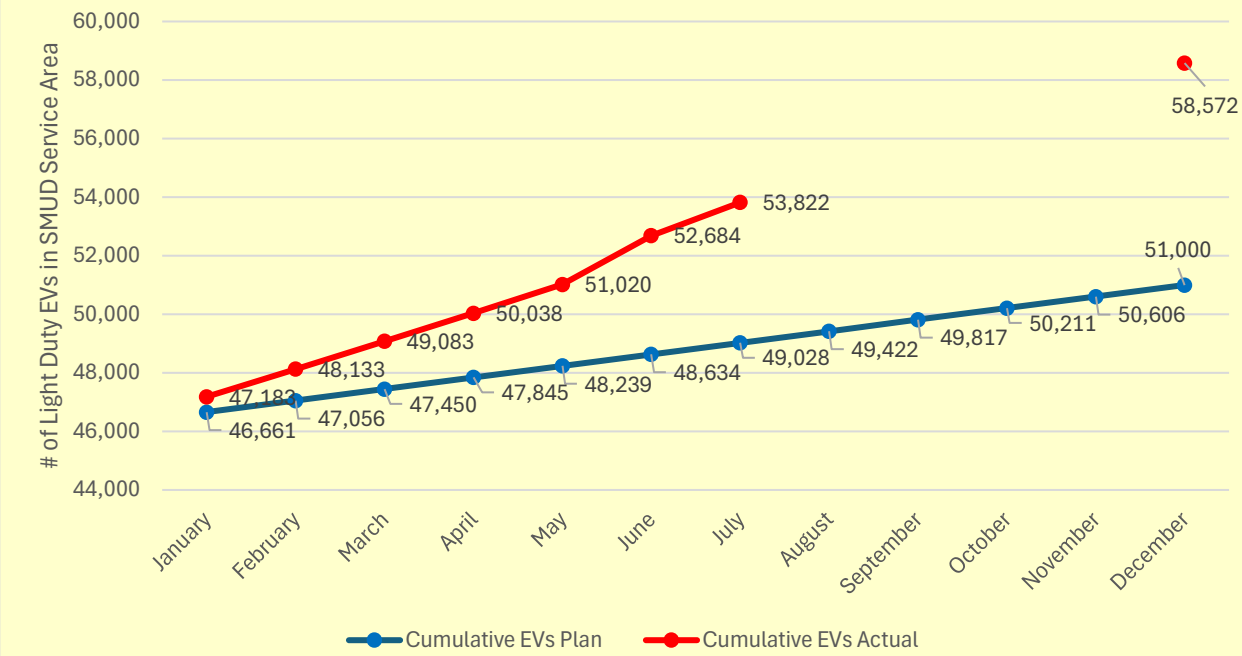
Incentives, information and special rates to help customers purchase and charge EVs for homes and businesses.



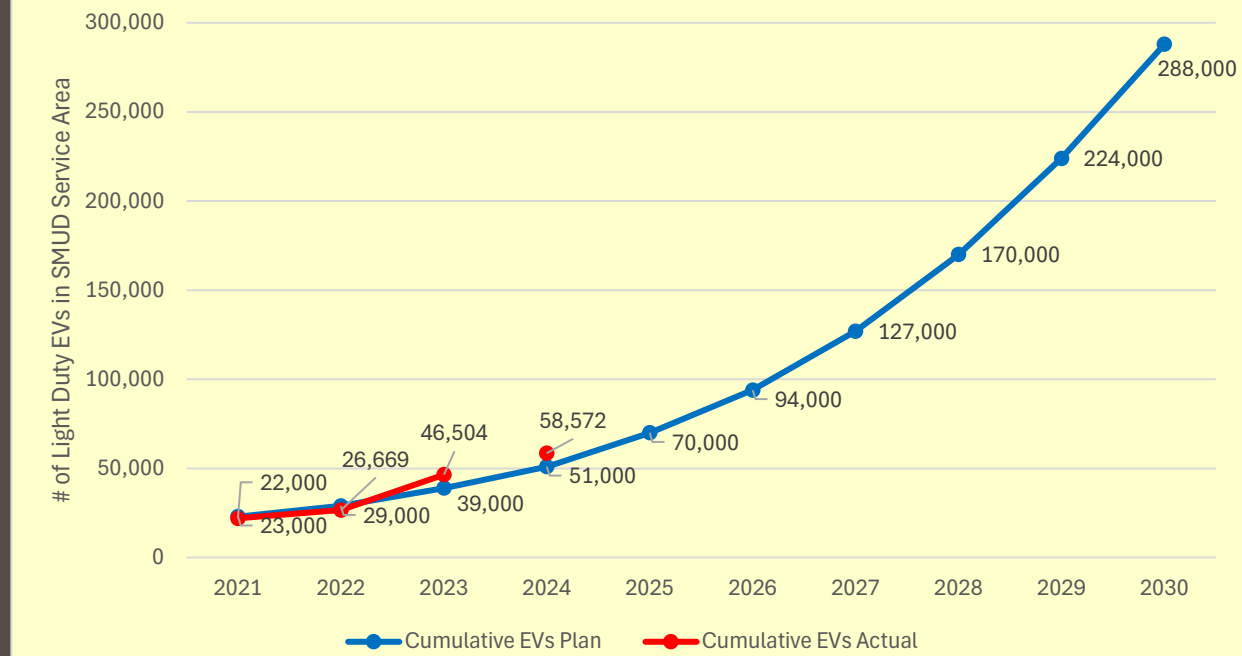
Transportation electrification

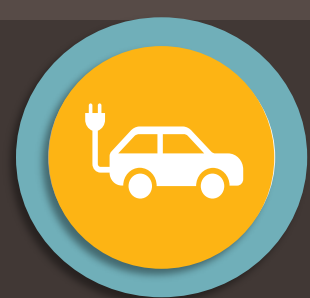
Customer program portfolio status

2024 Light Duty Electric Vehicles



Light Duty Electric Vehicles by 2030





Transportation electrification

Key metrics & milestones

	2023 Final	2024 Goal	YTD (July)	2024 Forecast
Charge@Home <ul style="list-style-type: none">Charger RebatesCircuit Installations	3,558 1,215	1,000 500	2,008 892	2,558 1,392
Commercial EV Chargers <ul style="list-style-type: none">L1/L2 ChargesDCFC	368 33	400 45	182 31	600 45
Residential EV Rate Participants (Cum.)	23,329	34,680	26,951	29,276
Income Qualified EVSE Installations <ul style="list-style-type: none">Chargers InstalledCircuits Installed	145 384	200 350	144 187	200 350
eFuel Services Program <ul style="list-style-type: none">Advisor ReportsProjects	21 2	25 6	8 0	25 3
Managed Charging Pilot Participants (Cum.)	965	1,000	1,159	1,200
Light Duty EV's in Service Territory (Cum.)	46,233	51,000	53,822	58,572

Program milestones:

- Charge@Home continued growth
- Contact SMUD First Centralized EV support
- ChargeReady Community REACH 1.0 grant multifamily projects
- Commercial EV charger installations and fleet electrification growth

Looking ahead:

- Updates and changes to CARB LCFS regulations
- Transition Residential Managed Charging from pilot to full scale program
- Grant implementation and opportunities
- Commercial business EV online tools



Transportation electrification

Key program incentives*

	Program/Measure	Incentive	Criteria
Residential	Charge@Home	Up to \$500 for charger Up to \$500 for Installation \$200 Circuit Sharing Device	Chargers rated at 32Amp maximum output Circuit installation with 40Amp maximum breaker size
	Charge@Home (Income Qualified)	No-cost direct install for EV charging equipment	Income eligibility/EAPR
Commercial	Level 1 EVSE	\$500/handle	Must be hard-wired and UL Listed
	Level 2 EVSE	\$4,500/handle	Must be hard-wired and UL Listed Maximum of 20 handles per site for general commercial Maximum of 50 handles per site for multi-family
	Low power DCFC (<50 kW)	\$7,500/handle (10 Maximum)	For commercial fleet applications
	Mid power DCFC (51-149.9 kW)	\$15,000/handle (2 Maximum)	
	High power DCFC (≥ 150 kW)	\$30,000/handle (2 Maximum)	
	Electrical Upgrades- Panel/Transformer	Up to \$6,000 for electrical upgrades	Limited to electrical upgrades required to support new EV loads

(*) Current incentives, subject to change



Transportation electrification

Highlights



New Electric School Buses and Chargers at River Delta USD



EV charger installation at WEAVE



SMUD's Ford F-150 Lightning powering an induction cooktop at the Celebrate Oak Park event



DC fast chargers for new bus fleet at San Juan USD



The Oaks multifamily EV charger installation



Transportation electrification

Project example: Multifamily EV charging & electrification





Transportation electrification

Project example: Fleet electrification



Distributed energy resources/load flexibility



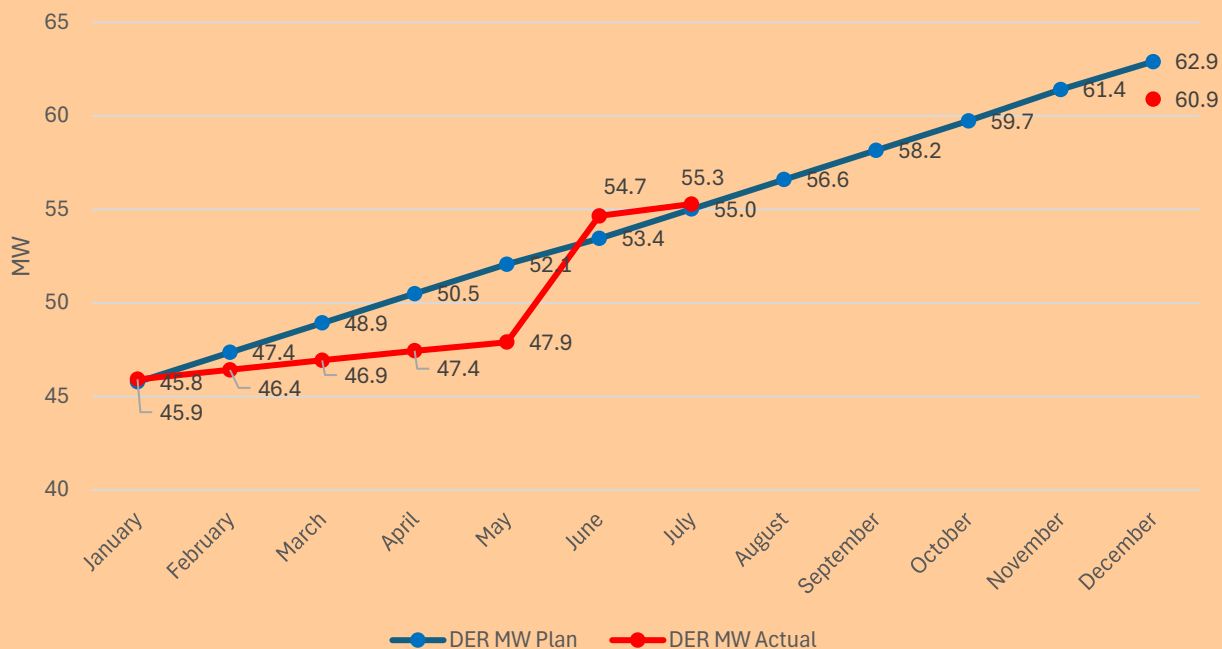
Programs and options to participate in building our Virtual Power Plant to help shift and manage loads during times when energy is needed or when excess energy is available.



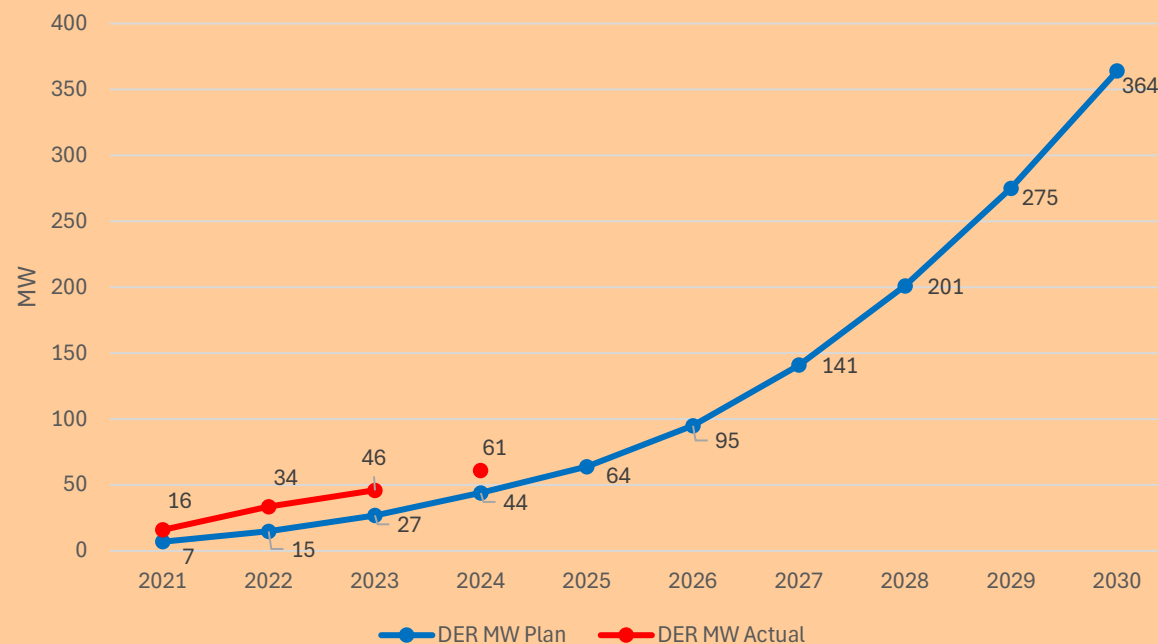
Distributed energy resources/load flexibility

Customer program portfolio status

2024 Distributed Energy Resources Cumulative MW



Distributed Energy Resources MW by 2030





Distributed energy resources/load flexibility

Key metrics & milestones

	2023 Final	2024 Goal	YTD (July)	2024 Forecast
My Energy Optimizer Partner <ul style="list-style-type: none">Smart thermostats enrolled	23,802	38,435	26,926	30,000
My Energy Optimizer Batteries enrolled <ul style="list-style-type: none">Starter (TOD-optimized batteries)Partner+ (batteries enrolled in VPP)	326 80	506 580	553 107	600 208
Peak Conserve or NextGen ACLM (enrollments)	1,338	6,500	1,542	1,700
Commercial PowerDirect (MW enrolled)	21.2	22.7	27.5	29.8
Total MW	45.8	62.9	55.3	60.9

Note: All numbers are cumulative.

Program milestones:

- MEO Partner+ Battery Storage Virtual Power Plant (VPP) program changes
- MEO Partner Smart Thermostat program refinement
- PowerDirect program growth

Looking ahead:

- Continue scaling of key programs
- Increased focus on battery storage
 - Expansion of MEO Partner+
 - Multi-family installations
 - Planning for commercial VPP
- Operationalization and integration of portfolio resources



Distributed energy resources/load flexibility

Key program incentives*

	Program/Measure	Enrollment Incentive	Ongoing Incentive	Criteria
Residential	My Energy Optimizer Partner <ul style="list-style-type: none">Smart thermostats	\$50	\$25 at end of summer season (except CPP customers)	CPP customers receive rate discounts on summer mid- and off-peak usage
	My Energy Optimizer Partner + <ul style="list-style-type: none">Batteries	\$5,000 per battery, up to \$10,000 per site	Quarterly capacity payments (\$103 - \$300) based on number of batteries enrolled	Additional annual incentive for event calls outside of TOD hours: Summer months: \$3.80/kW/Month Non-Summer months: \$.85/kW/Month
	Peak Conserve	\$50	\$25 at end of summer season	Requires installation of two-way communicating device and controller on AC compressor
Commercial	Commercial PowerDirect	\$175/kW in incentives to offset on-site technology costs	Capacity payment of \$10 per kW/month	Must be AutoDR enabled

(*) Current incentives, subject to change



Distributed energy resources/load flexibility

Highlights



Honeywell T-stat added to My Energy Optimizer (MEO) program



MEO Partner+ Tesla Battery installation



Peak Conserve switch installation



PowerDirect device installation



Green pricing programs



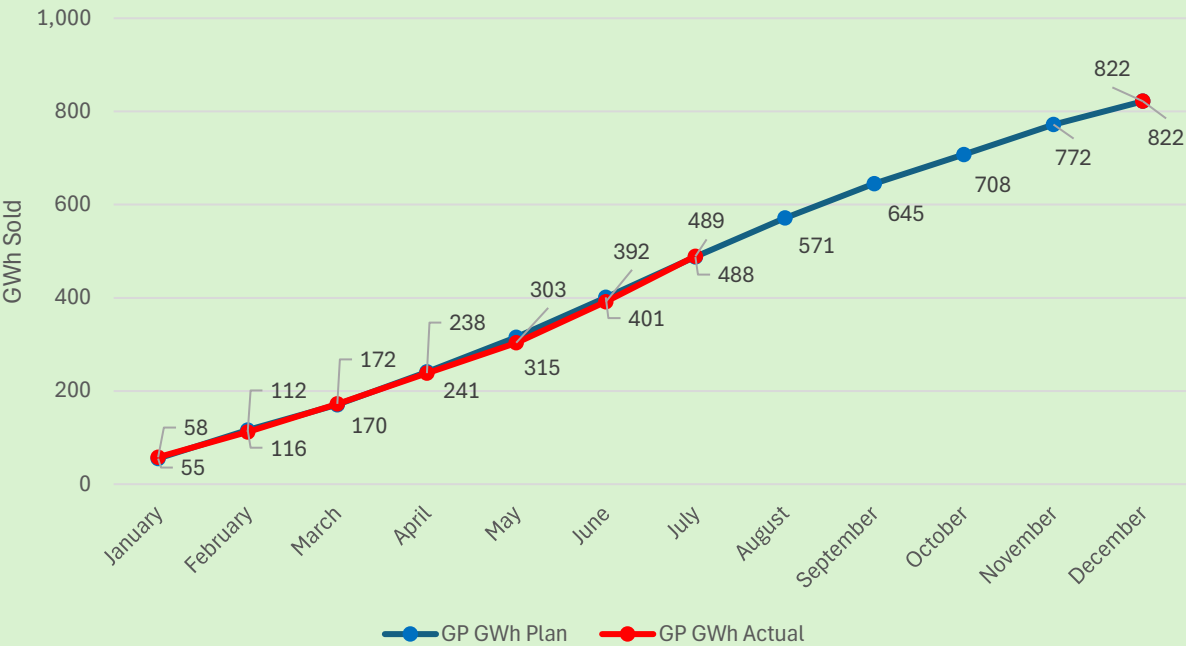
Gives customers the ability to opt in and select a level of renewable and/or carbon-free electricity that meets individual or corporate objectives above and beyond our standard retail rates.



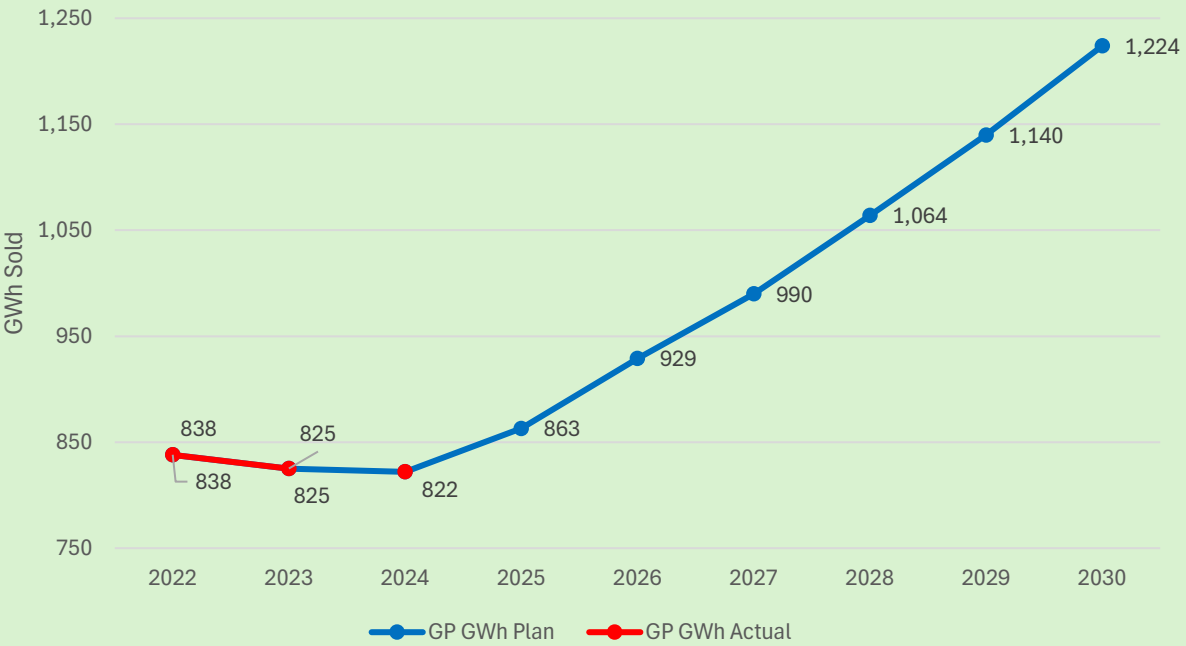
Green pricing programs

Key metrics & milestones

2024 Green Pricing GWh



Green Pricing GWh by 2030





Green pricing programs

Key metrics & milestones

	2023 Final	2024 Goal	YTD (July)	2024 Forecast
Residential Greenergy accounts	61,520	61,520	63,291	61,520
Commercial Greenergy accounts	1,489	1,489	1,544	1,489
Neighborhood SolarShares <ul style="list-style-type: none">Enrolled premises (Cum.)<ul style="list-style-type: none">Single familyMultifamilyAccessory dwelling units	58 843 146	104 1,510 262	67 975 169	93 1,349 234
Commercial SolarShares <ul style="list-style-type: none">CustomersAccounts	30 410	30 410	30 443	30 445
Total gross GWh sales	823	822	475	822

Program milestones:

- Retooled renewable supply to adjust to increased Renewable Energy Credit costs
- Launched SolarShares program for low-& moderate-income customers
- Development and design of Hosted Community Solar projects with two school districts

Looking ahead:

- Development of Commercial Renewable Shares Program
- Neighborhood SolarShares fully subscribed in 2025
- Updated Green Pricing portfolio goals
- Community Solar and grant opportunities



Green pricing programs

Highlights



Moonbelly Bakery local commercial
Greenery participant



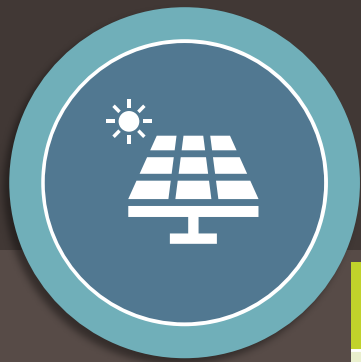
Contact Center Greenery Support Team



CalPERS Office Complex receives
100% renewable power through
SolarShares and Greenery



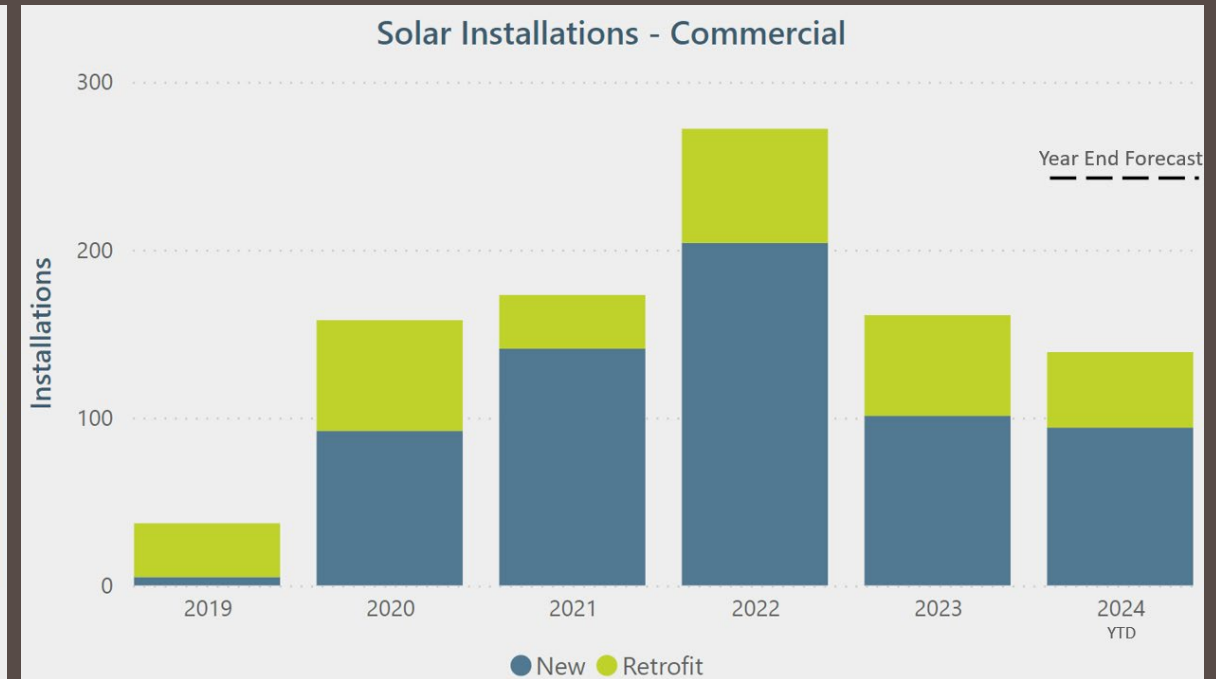
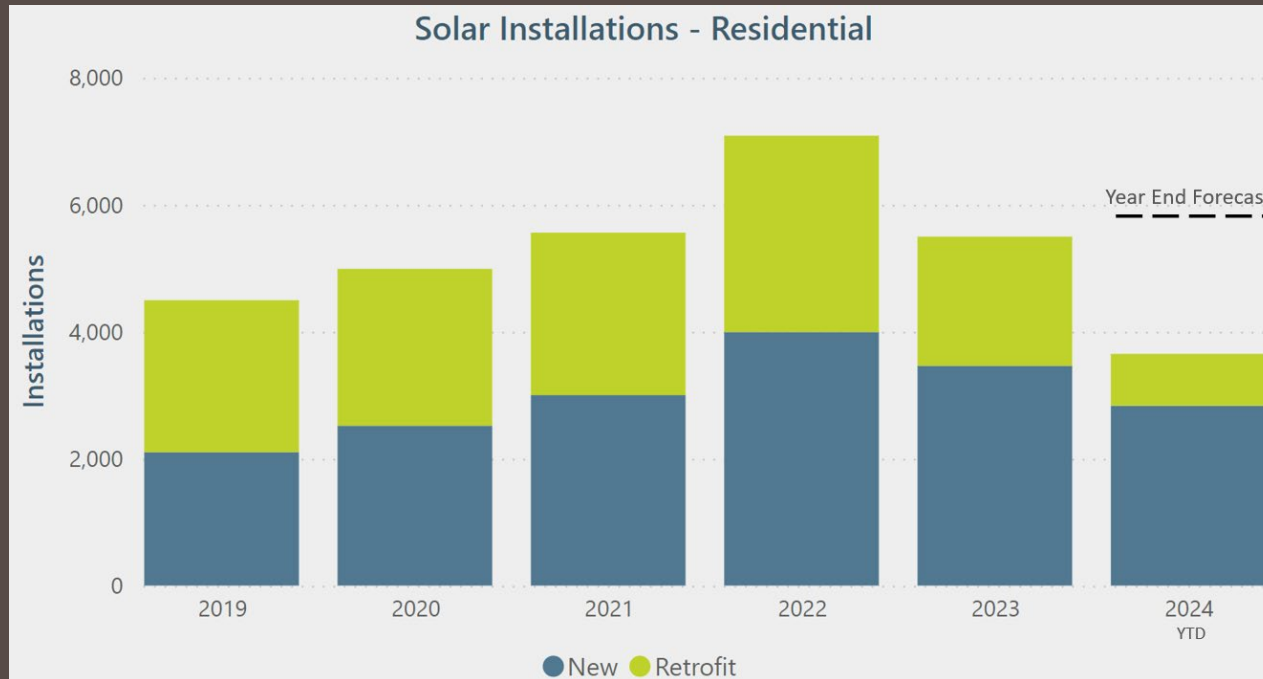
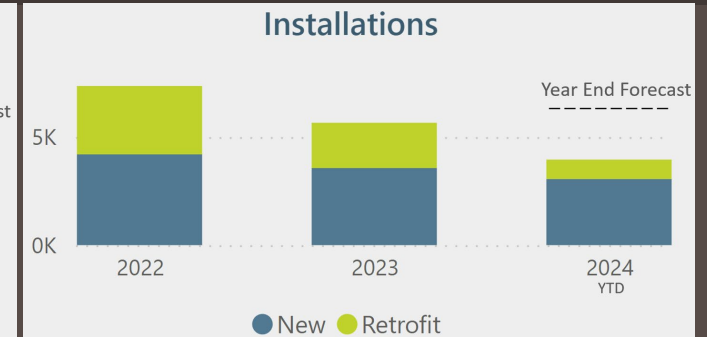
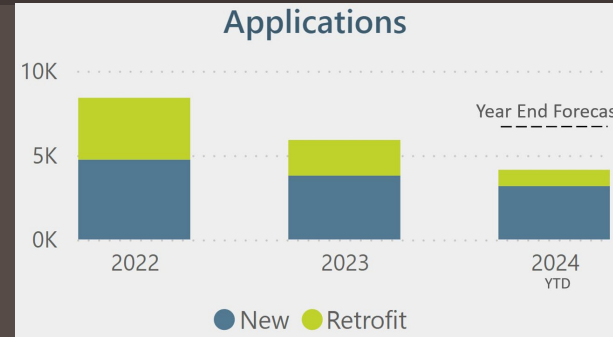
Northpoint Reserve Single Family
Neighborhood SolarShares project



2024 Progress

Solar: Behind the meter

2023 & 2024 Solar Applications & Installations January through September 4					
			Variance		
	2023	2024	#	%	
Applications	3,702	4,476	774	21%	↑
Installations	3,893	4,019	126	3%	↑



Summary & conclusions

- We are making good progress and are ahead of or on track to meet most ZCP customer portfolio goals so far
- Goals in all portfolios sharply increase over the next few years so path forward will become steeper
 - Tailwinds include broad support from our community along with state and local policies, and building codes and standards
 - Coordination with Federal and State programs will be important especially in supporting low- and moderate-income customer segments to participate in the ZCP journey
 - Grants and partnerships will also continue to be key elements needed to support acceleration to meet 2030 goals