



# a forum

for climate action

Nov. 29, 2023

Powering forward.  
Together.



# Agenda

- **Meet our presenters**
- **Road to Zero: join the charge!**
- **What SMUD's doing & why:** Our progress toward clean power
- **What you can do:** Your role in the 2030 Clean Energy Vision
- **Q & A**





**Rhonda Staley-Brooks**  
Director, Community  
Relations Outreach &  
Support



**Buck Cutting**  
Manager, Project  
Development & Renewable  
Generation

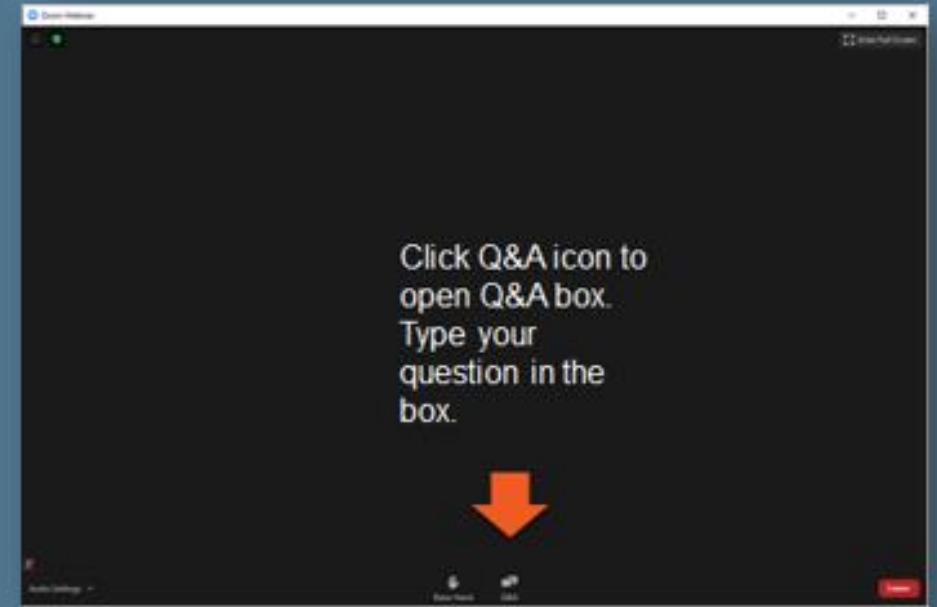


**Josh Rasin**  
Manager, Emerging  
Technologies

**Questions can be submitted in the chat.**

**We'll take questions at the end of tonight's presentation.**

**Although we may not have time to answer all questions, we'll respond to as many as possible via chat and live responses.**





# Are you ready to join the charge?

## CleanPowerCity.org



### POLL:

Have you signed up to join the charge?

- YES!
- Not yet - send me the link!
- No, I want to learn more, first.





# 2030 Zero Carbon Plan

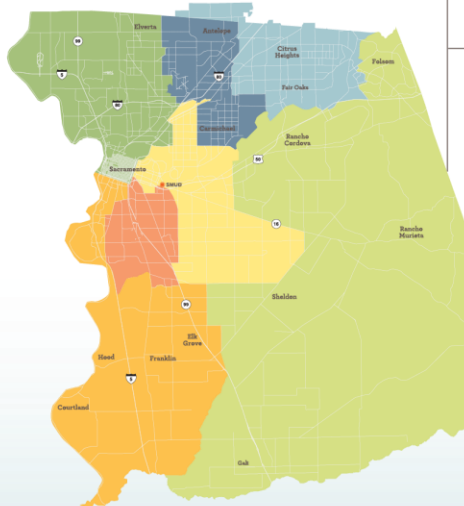
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# About SMUD

*SMUD is your community-owned, not-for-profit electric service.*

**6th** largest  
community-owned  
in the U.S.



**75+**  
Years  
Est. 1946

Power mix  
that's on average  
about  
**50%**  
carbon-free



The most  
ambitious goal  
of any large  
utility in the  
United States

~**645,000** Customers

~**2,300** Employees



**7** member  
Elected  
Board of Directors

**SMUD's rates are among the lowest in California,**  
and on average more than **50% lower** than those of neighboring PG&E.



# Snapshot & pillars



### Repurpose natural gas generation

Replace 2 power plants with renewable and storage resources and retool remaining 3 to minimize emissions.



### Expand proven clean technology

Grow SMUD's renewable and battery storage by 3.5x. Support customer's resources via solar and battery storage.

~\$2 billion investment



### Pilot & scale new technology and business models

Increase education and demand flexibility, spread adoption of customer-owned virtual power plants & invest in grid-scale technology.



Pursue grants, partnerships and limit rate impacts



### Maximize community benefits

Stay affordable and reliable, improve air quality and overall community health while supporting under-resourced communities.

~\$2.5 billion investment

Goal: 

  $CO_2$  ↓

Eliminate  $CO_2$  from SMUD's power supply

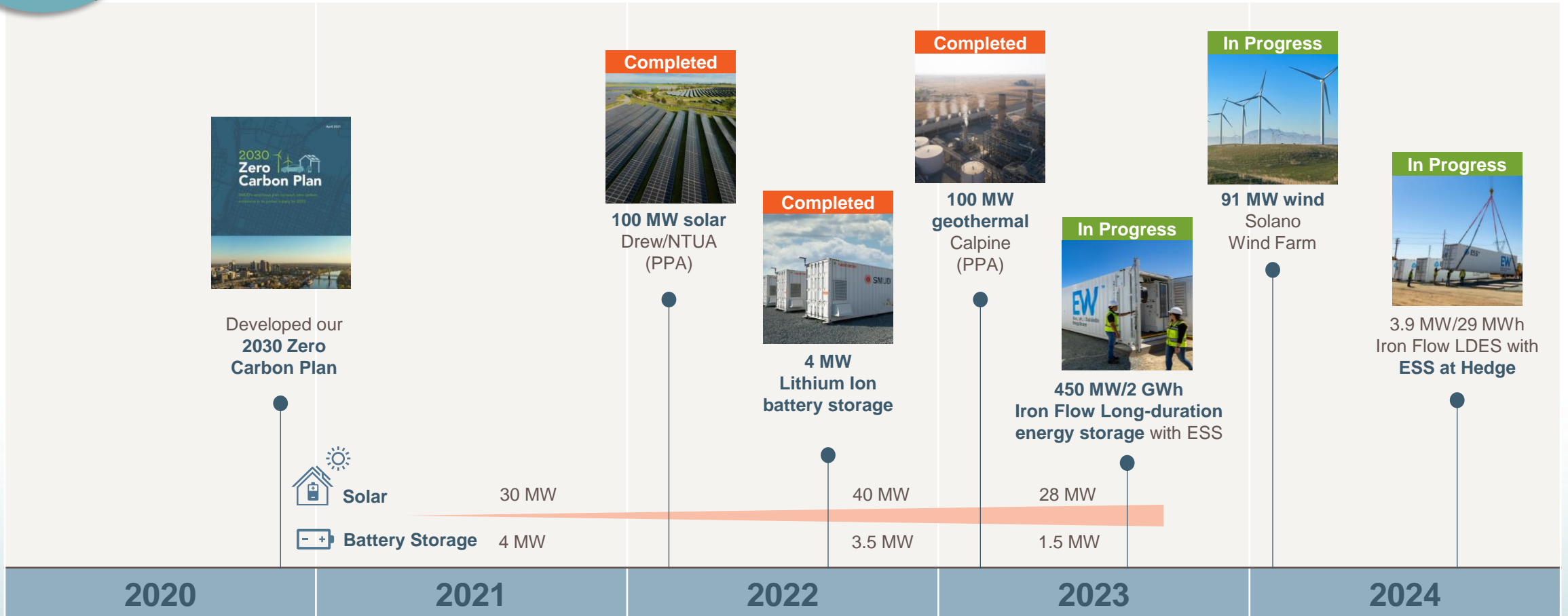


Create thousands of new regional clean tech jobs





# Accomplishments & proven clean technology progress





# 2025 and beyond

Proven clean technology

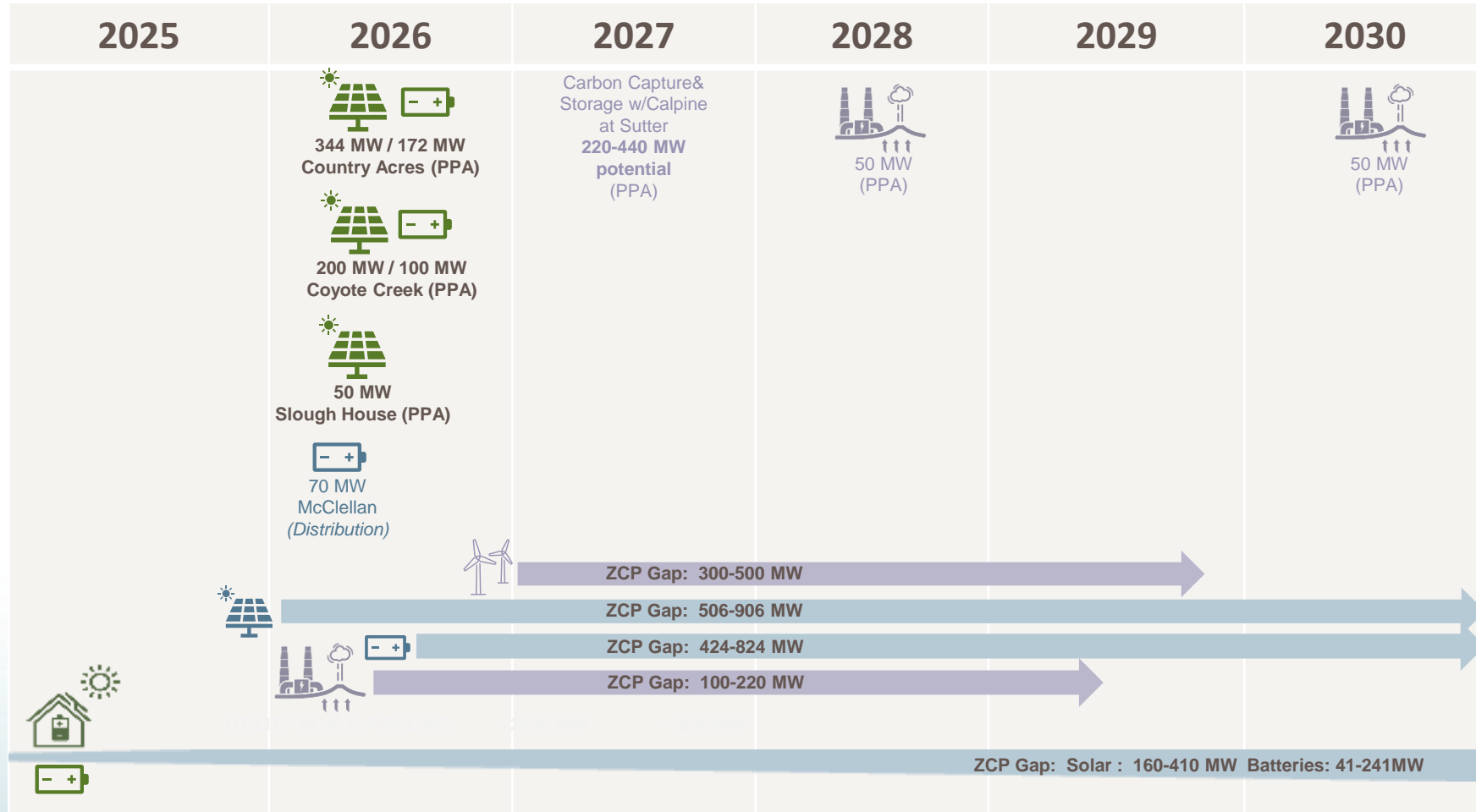


Green – In Progress

Blue – Prospective - Local

Purple – Prospective - Regional

ZCP Gap = ZCP – Projects Completed & In Progress





# Our progress toward clean power

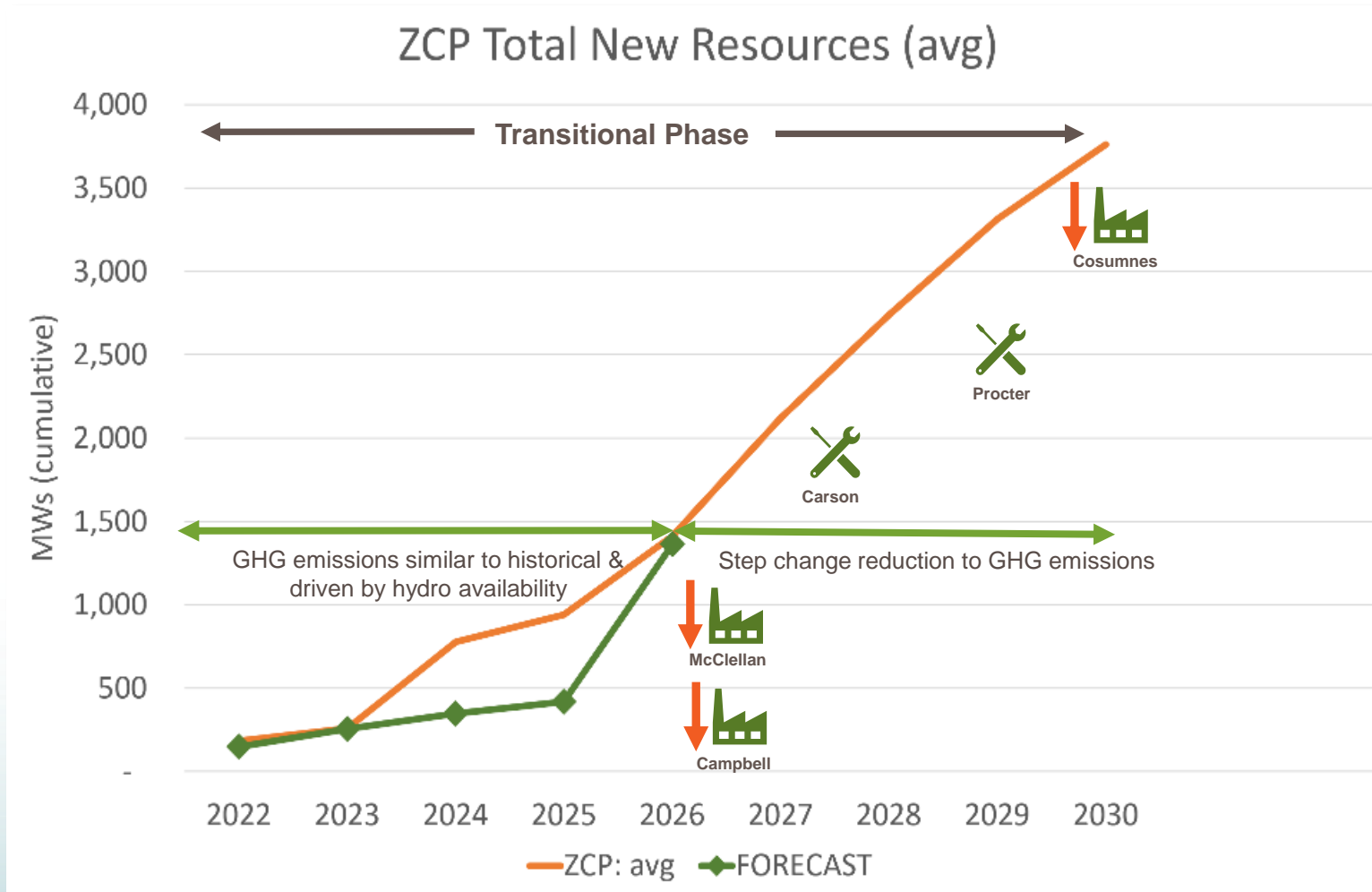
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# Work in progress vs 2030 Zero Carbon Plan





# Proven clean technologies

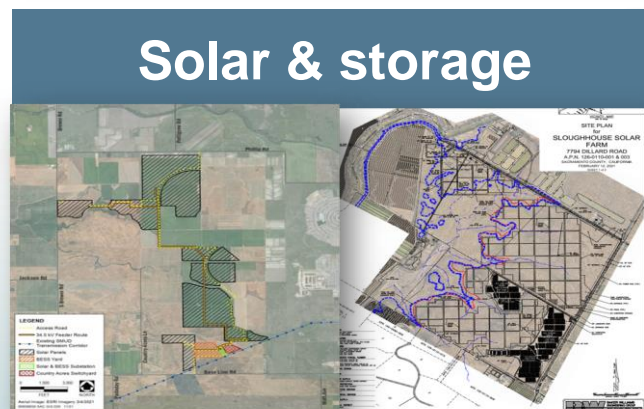


**300 MW**  
by May 2024 through  
all Solano assets.  
Now installing 19  
turbines at Solano 4  
for 85.5 MW total.



## Geothermal

**100 MW**  
contract executed  
Jan 2023 with  
Calpine at The  
Geysers. Equivalent  
to removing 342,000  
metric tons of GHGs.

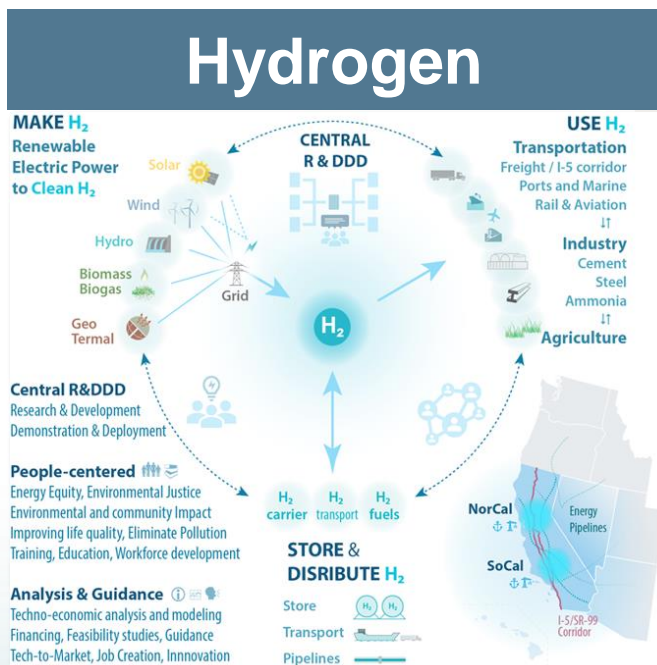


## Solar & storage

**594 MW PV**  
**272 MW x 4 hr**  
**BESS**  
3 projects current in  
permitting phase.  
Forecast operation 2026.



# New technologies



**H2Hubs**  
8-10 regional Clean Hydrogen Hubs funded through the Department of Energy. SMUD concepts have been selected as alternatives in the application process.

## Carbon capture & storage



## Sutter Energy Center

Exploring purchased power agreement (PPA) for carbon capture with Calpine.

## Long-duration storage



**4MW / 24MWH**  
Current demonstration at Hedge of ESS's flow-battery 'Energy Warehouse.'





# Progress with customer programs

# Zero Carbon customer programs opportunities



## Energy efficiency & building electrification

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



## Load flexibility & battery storage

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.



## Driving electric

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



## Green pricing

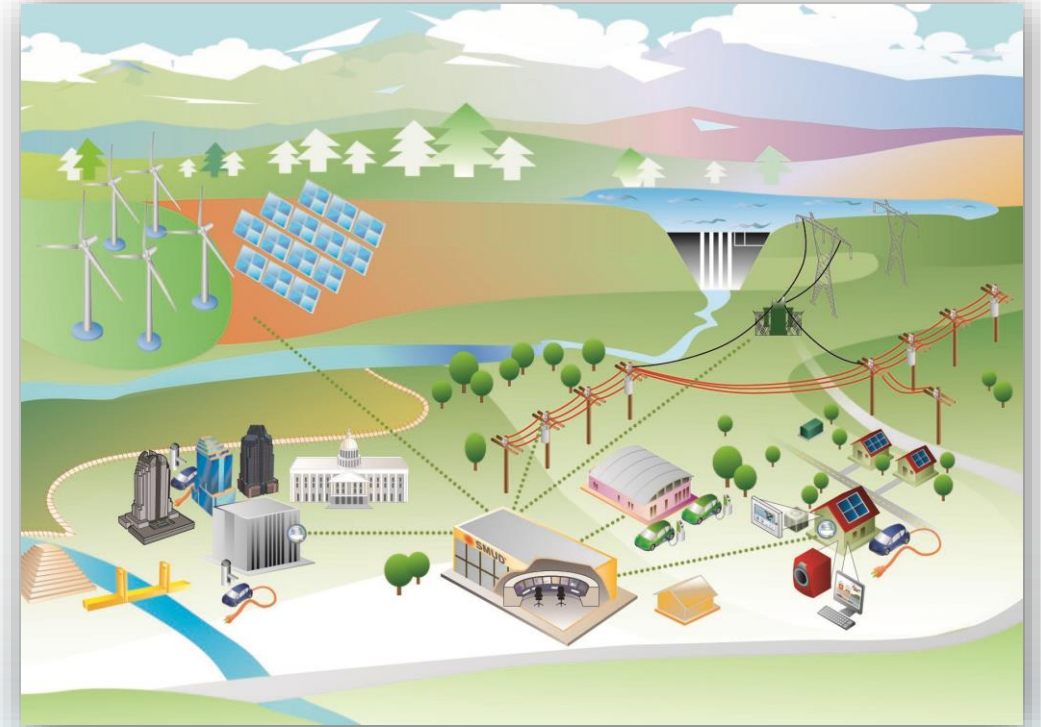
Gives customers the ability to opt in and select a level of renewable and/or carbon-free electricity that meets individual or corporate objectives above and beyond our standard retail rates.

# GRIP grant

SMUD wins \$50 million grant to support advanced smart grid technologies

## Over the next 5 years, this grant will enable us to:

- Deploy 200,000 next generation smart meters.
- Support the transition from a one-way centralized distribution system to a two-way decentralized system.
- Implement our new Outage Management System with advanced features to enable operational efficiencies and an improved customer experience.
- Collaborate with the Wilton Rancheria Tribe of Miwok Indians for building electrification & solar + storage opportunities on Tribal lands into the regional grid.



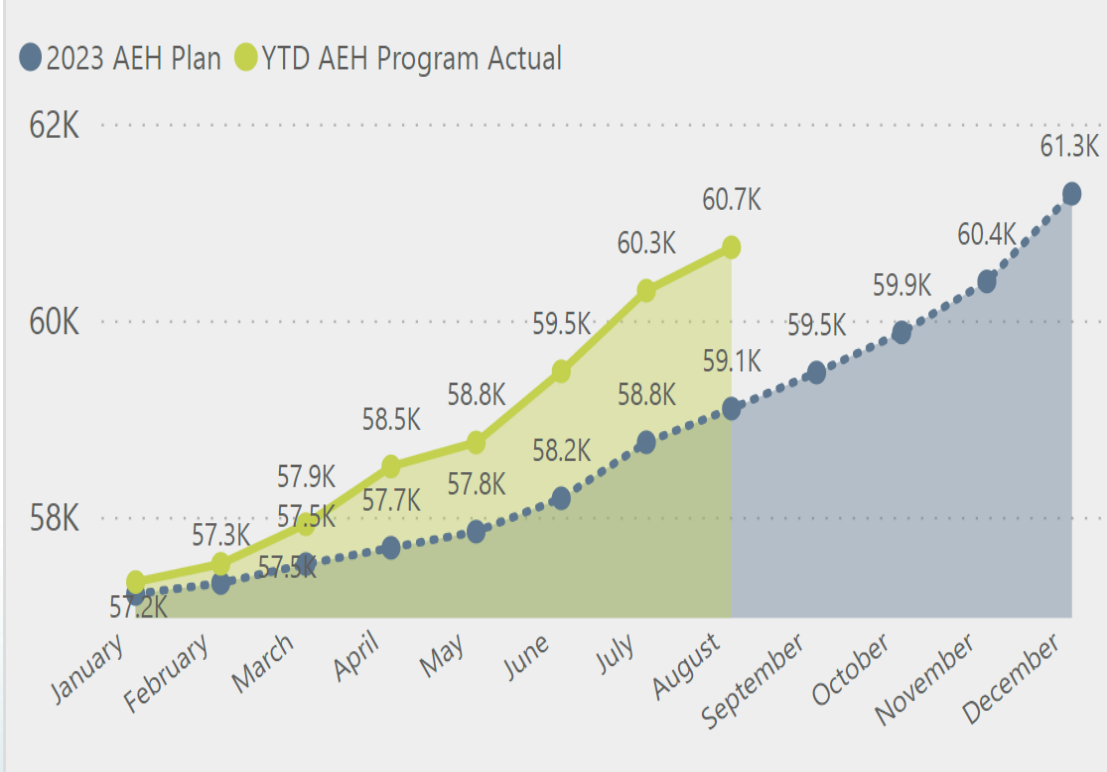




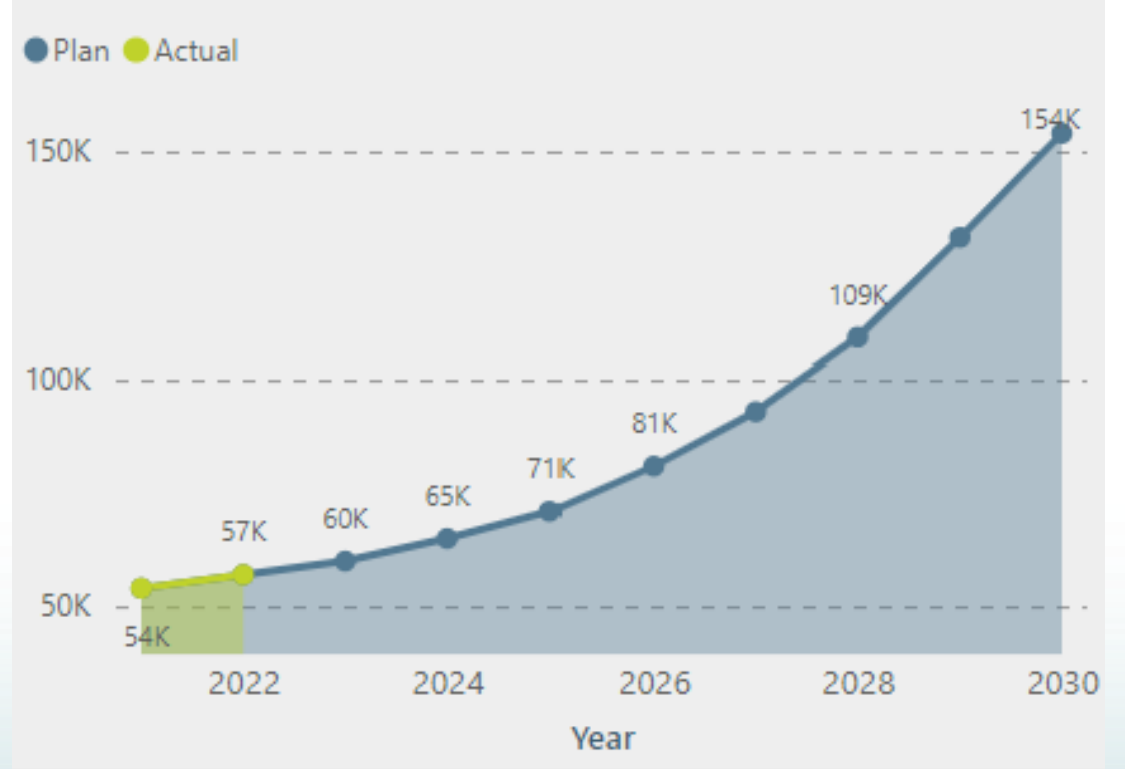
# Building electrification & energy efficiency

Customer program portfolio status

## 2023 All-Electric Equivalent Homes



## All-Electric Equivalent Homes by 2030

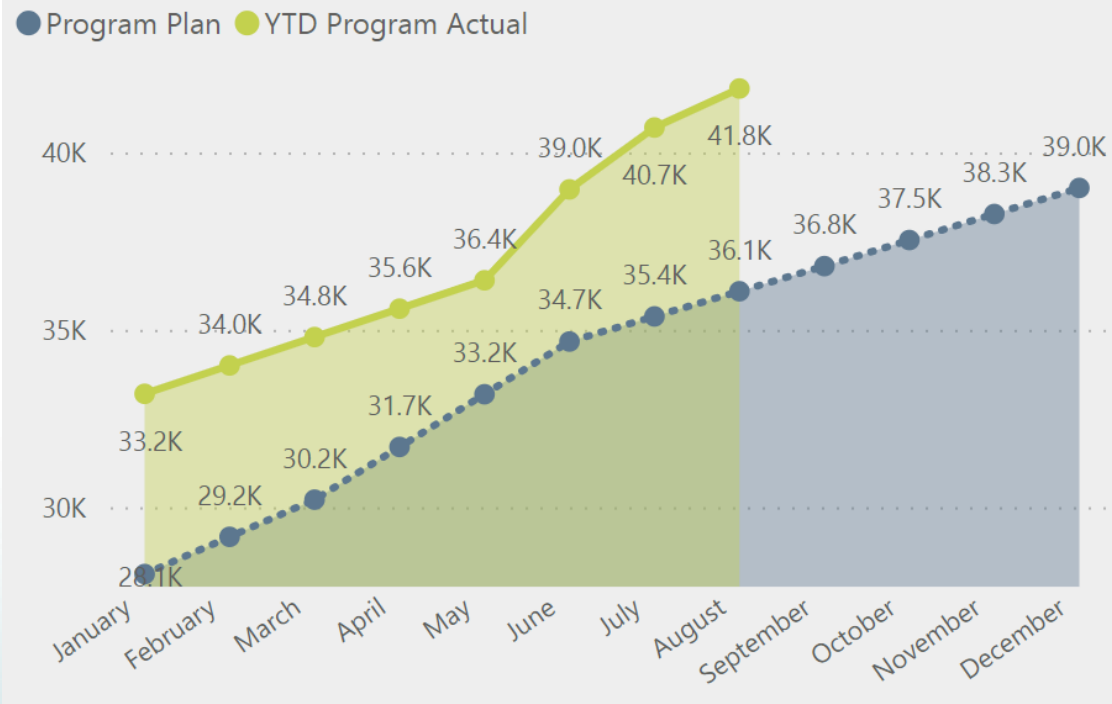




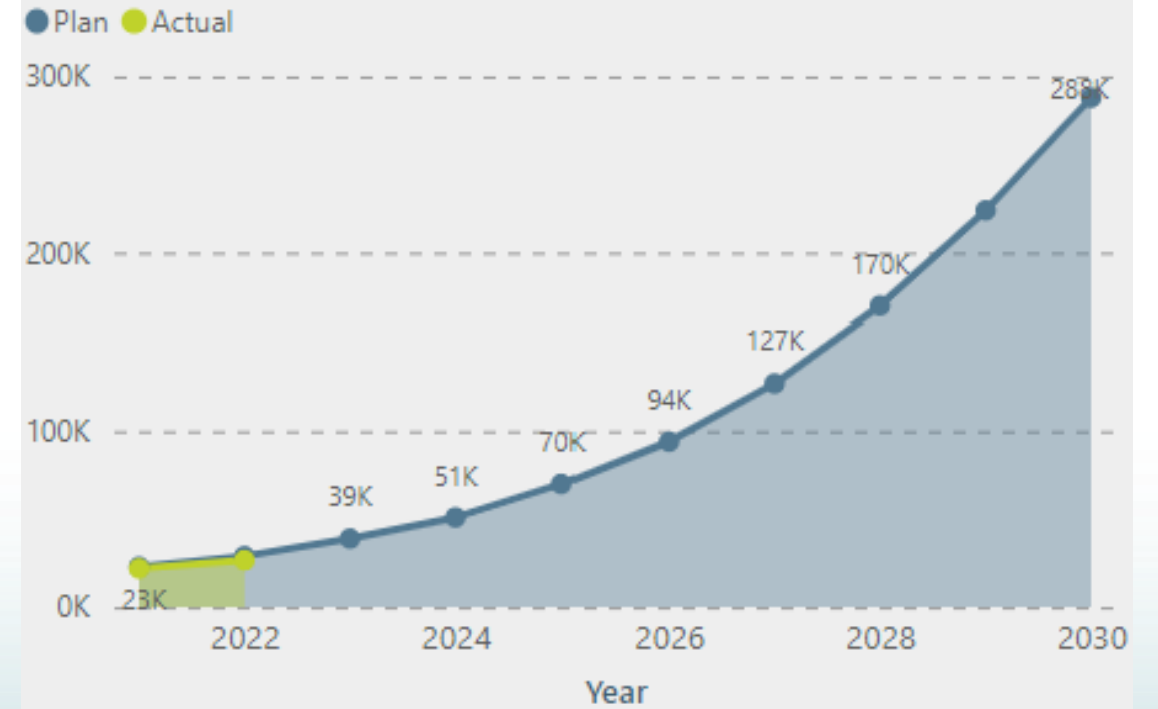
# Transportation electrification

## Customer program portfolio status

### 2023 Electric Vehicles



### Electric Vehicles by 2030

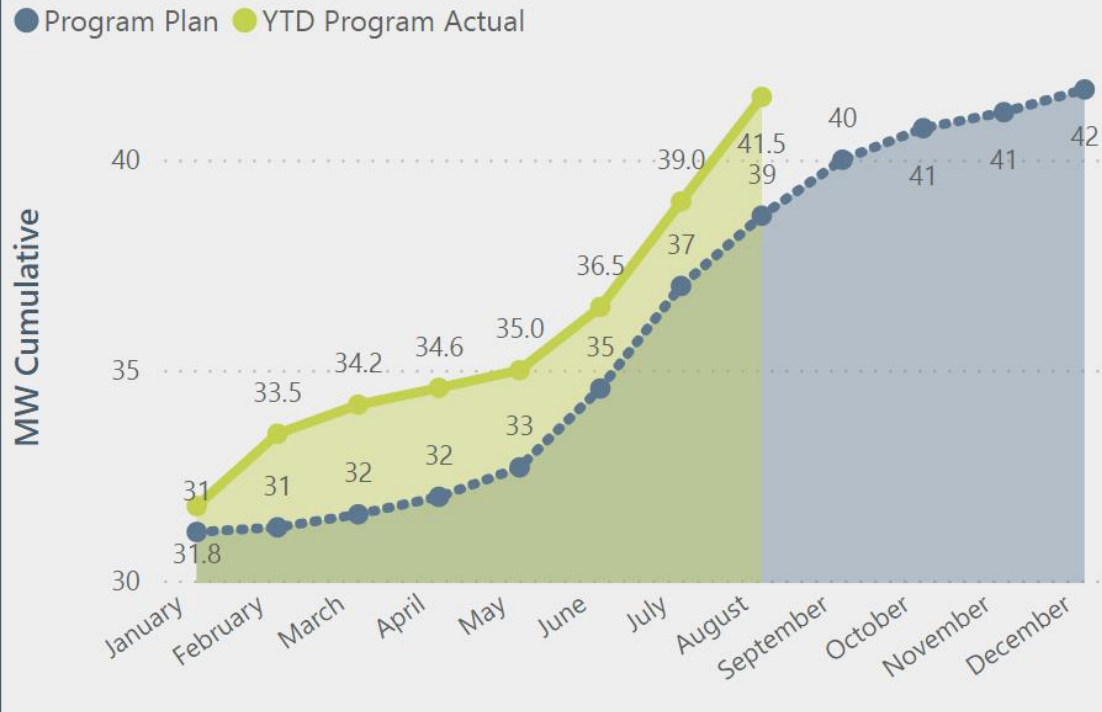




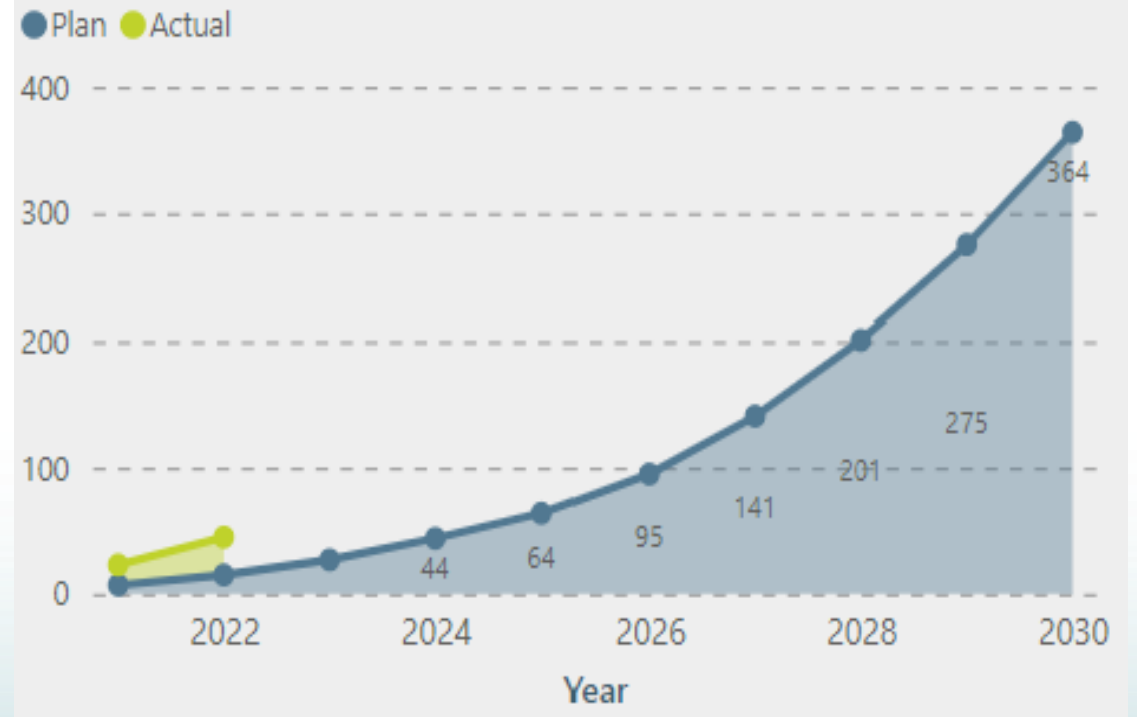
# Distributed Energy Resources/Load flexibility

Customer program portfolio status

### 2023 Distributed Energy Resources (DER)



### DER Cumulative MW by 2030







# Green pricing programs

## Key metrics & milestones

	2023 Goal	YTD (Aug.)	2023 Forecast
Residential Greenergy customers	69,000	65,005	62,446
Commercial Greenergy customers	2,244	1,542	1,550
Neighborhood SolarShares			
• Enrolled premises (Cum.)	405	967	1,168
• Premises reserved	3,900	3,686	3,900
Commercial SolarShares			
• Customers	30	30	30
• Accounts	436	436	437
Total Qualifying GWh Sales	770	513	645

### Program milestones:

- Development of SolarShares program for Low & Median Income (LMI) customers.
- Planning for Community Solar for schools & nonprofits.

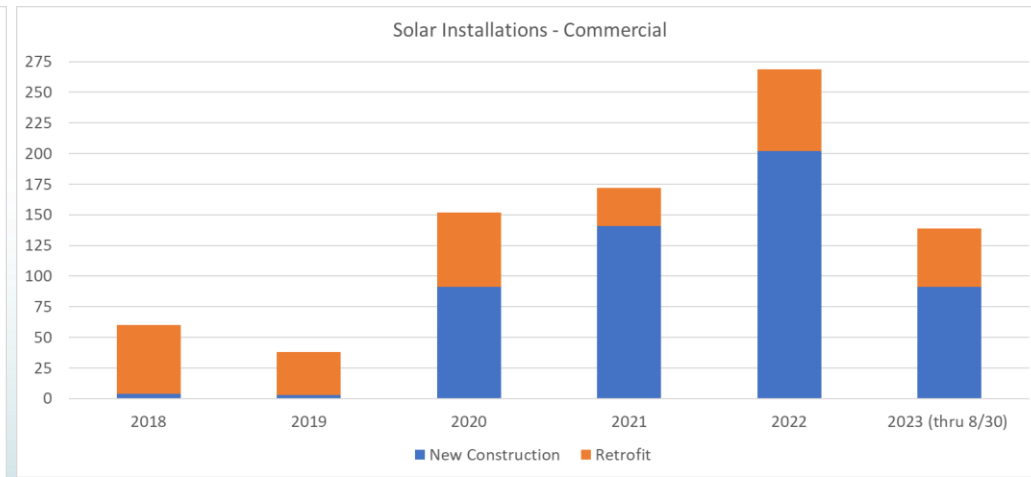
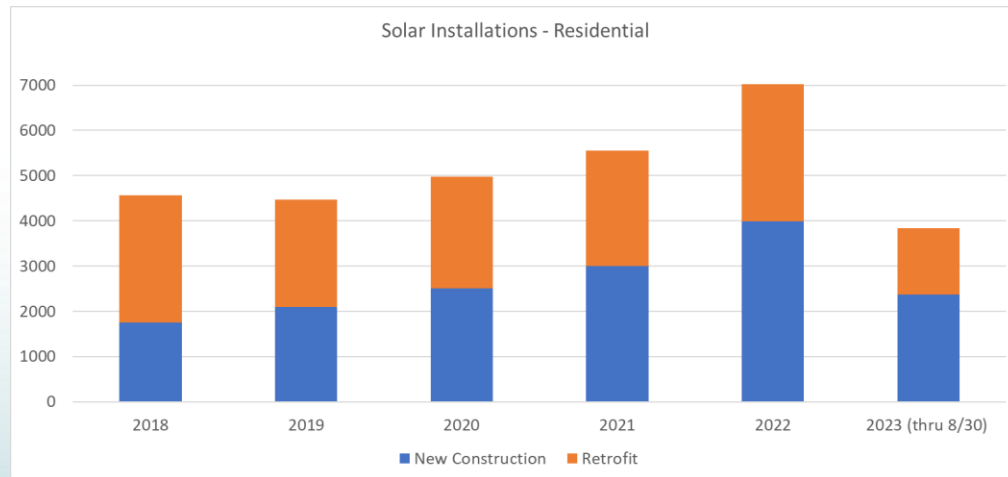
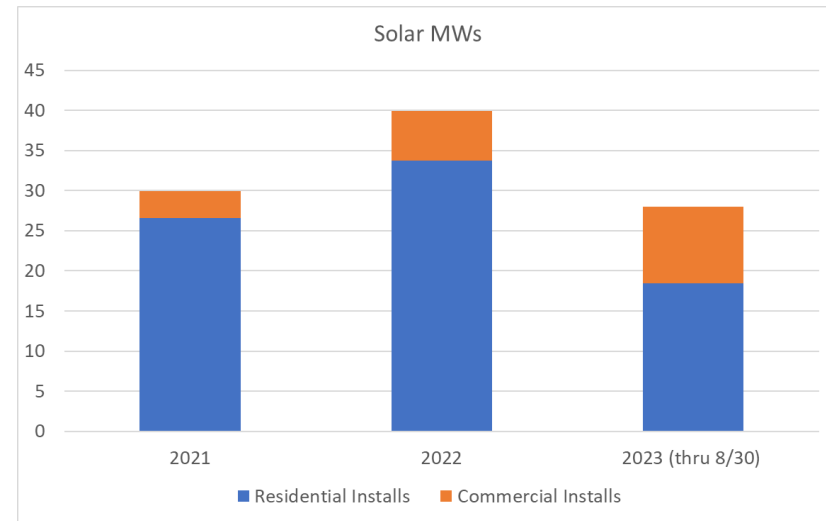
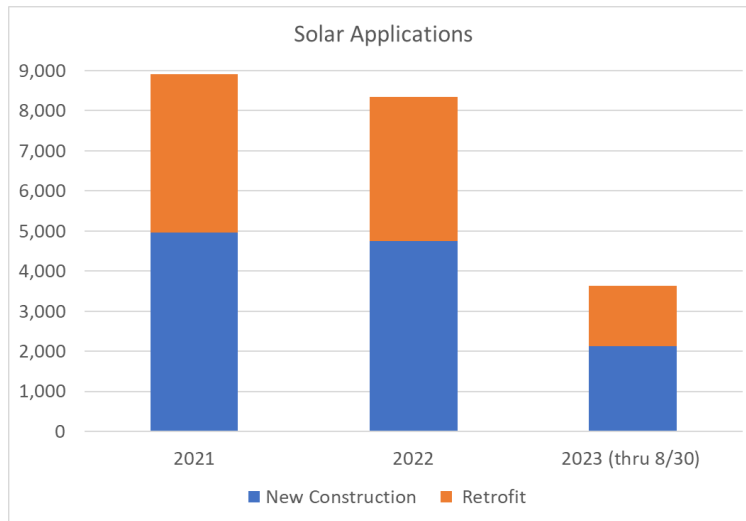
### Looking ahead:

- Community Solar resource planning and development.
- Planning for Commercial Renewable Shares offerings.



# Solar: Behind the Meter

2023 progress





# How you can follow along

Data-driven dashboards

### Energy outlook dashboard

All data current as of 9:44:38 PM

**Current demand**

1,810 MW

**Current renewables**

138 MW

**Today's forecasted peak**

2,597 MW

**Tomorrow's forecasted peak**

1,757 MW

**Total energy generation (MW)**

1,626 Total MW

Large hydro 312 (19%)  
Renewables 138 (8%)  
Natural gas 1175 (72%)

Energy demand, renewable generation and peak forecast demand @ 15-minute intervals.

[smud.org/EnergyOutlook](https://smud.org/EnergyOutlook)

### Quarterly generation and emissions from gas plants

Energy we generated from gas plants we control in 2023

**1,237** (GWh)  
Q1 2023    --    (GWh)    (GWh)  
Q2 2023    Q3 2023    Q4 2023

We expect to generate 6,619 GWh of energy from gas plants we control in 2023.

Gas plant emissions for load and market sales\*

2023 Planned GHG = 2.6 million metric tons

Planned

Cosumnes Power Plant

Thermal plant contract

Cogens & peaker plants

	Q1 2023	Q2 2023	Q3 2023	Q4 2023
Thermal plant contract	164k MT CO2e	--	--	--
Cosumnes Power Plant	137k MT CO2e	--	--	--
Cogens and peaker plants	206k MT CO2e	--	--	--
<b>Total</b>	<b>507k MT CO2e</b>			

### Emission & zero carbon progress dashboard

Quarterly information on carbon emissions & customer enrollments in clean energy programs..

Check our progress on rooftop solar and battery storage installations, electric vehicle adoption, home electrification and distributed energy resources (DERs).

Dashboard is updated by the end of the month following the close of each quarter.

[smud.org/2030Progress](https://smud.org/2030Progress)



# 2023 accomplishments / 2024 priorities

Community Impact Plan: Ensuring no community left behind.

## 2023 accomplishments:

- **Residential Neighborhood Electrification** – Gardenland, North Highlands & Strawberry Manor, **60 homes electrified** & 25 more in pipeline.
- **Commercial Business District Electrification** – Partnership with Sacramento Hispanic Chamber of Commerce & Del Paso Heights Property & Business Improvement District, **21 business site evaluations completed.**
- **Regional Workforce Development** – **493 people received workforce training.**
- **Inclusive Economic Development** – expanded **14 PBID partnerships.**

## 2024 priorities:

- **Pilot low- to median-income programs** – Free thermostats via SMUD Energy Store.
- **Residential & Commercial Electrification** – North Highlands, Del Paso Heights, Strawberry Manor, Meadowview.
- **Shine Awards** – Increased investment to ensure reach.
- **Community Ambassadors** – Targeted outreach and education.

**Our audience**

- Residential**
  - Low- & median-income populations who can't afford necessities
  - Renter with higher energy burdens
  - Under-served populations with cultural or language barriers
- Commercial**
  - Small businesses
  - Nonprofits

**Our focus**

- Affordability
- Equitable access
- Community engagement

*We're doubling the current investment towards under-resourced communities!*

**Our approach**

- **Diversifying** clean energy programs to make them accessible to more residential customers.
- **Leading** inclusive economic development with new job trainings and job placement programs for clean energy jobs.
- **Focusing** on investing in the business community through meaningful and impactful partnerships.
- **Creating** capacity building opportunities for nonprofits to support our 2030 zero carbon plan engagement.
- **Showing up** in culturally relevant ways with community education and outreach through our community ambassador teams.



# Your role in the 2030 Clean Energy Vision

Powering forward.  
Together.





# Customer programs



# Our largest electrification rebates & incentives



Heat pump water heaters

up to \$2,500



HVAC

up to \$3,000



Storage with solar

up to \$2,500  
+ earned financial incentives  
for SMUD partnership



View all residential customer incentives

[smud.org/Rebates](https://smud.org/Rebates)



Lighting

Whether you are replacing a few lights or doing a complete overhaul, we have options for you.



Refrigeration

Explore our refrigeration rebates, including efficiency options.



HVAC

Cut costs to install a new heating or cooling system, including parts and contractor fees.



Multi-family rebate program

Business customer incentives

[smud.org/MyAdvisor](https://smud.org/MyAdvisor)



Considering an EV?

Contact **SMUD** first.

[smud.org/DriveElectric](https://smud.org/DriveElectric)  **SMUD**

Our EV advisors help put you in the  
driver's seat

We have a dedicated team to provide you with enhanced EV support.



#### Be prepared for your EV

If you're just starting to look or if you're ready to purchase, we can help with information on incentives and rebates, the best EV to fit your needs and charging assistance.



#### Get the right charger

Let us help you find the best charging solution to fit your driving needs and save you money. You may find Level 1 charging, with no additional equipment or upgrades, is a perfect fit for you.



#### We can guide you

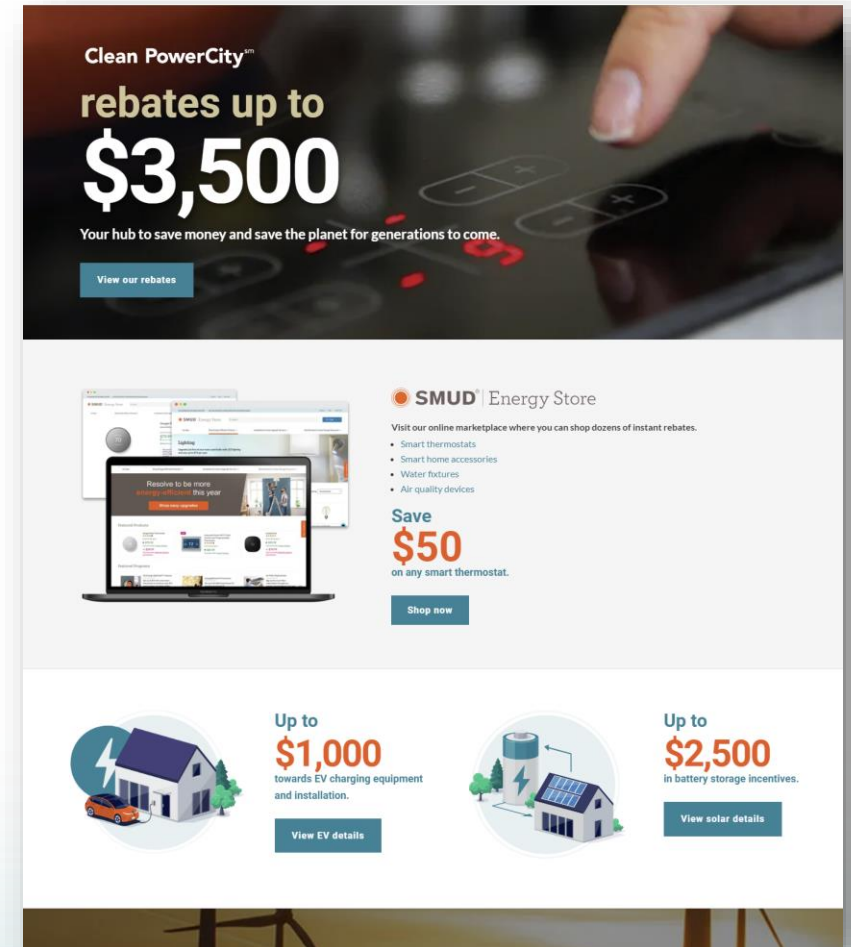
Our EV advisors aren't here to sell you anything. We're here to help give you the best experience with your EV and we'll suggest ways to save you money in the process.



# CleanPowerCity.org

Show your support to create a healthier environment and cleaner air:

- Discover rebates & incentives.
- Get tips on being energy smart and reducing your emissions.
- Learn how to support the grid.
- Find out more about electric vehicles.
- **Enjoy some free swag!**





# Welcome to the Q&A

Questions can be submitted in the chat.

Although we may not have time to answer all questions, we'll respond to as many as possible via chat and live responses.

