

# Exhibit to Agenda Item #1

Provide the Board the **2030 Zero Carbon Plan (ZCP)** semi-annual update to include utility-scale project progress, progress towards 2030 goals, reliability and affordability considerations, and an **Integrated Resource Plan** update.

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

Wednesday, April 15, 2026, scheduled to begin at 6:00 p.m.

Auditorium, SMUD Headquarters Building

# Zero Carbon Plan update

Annual utility scale update

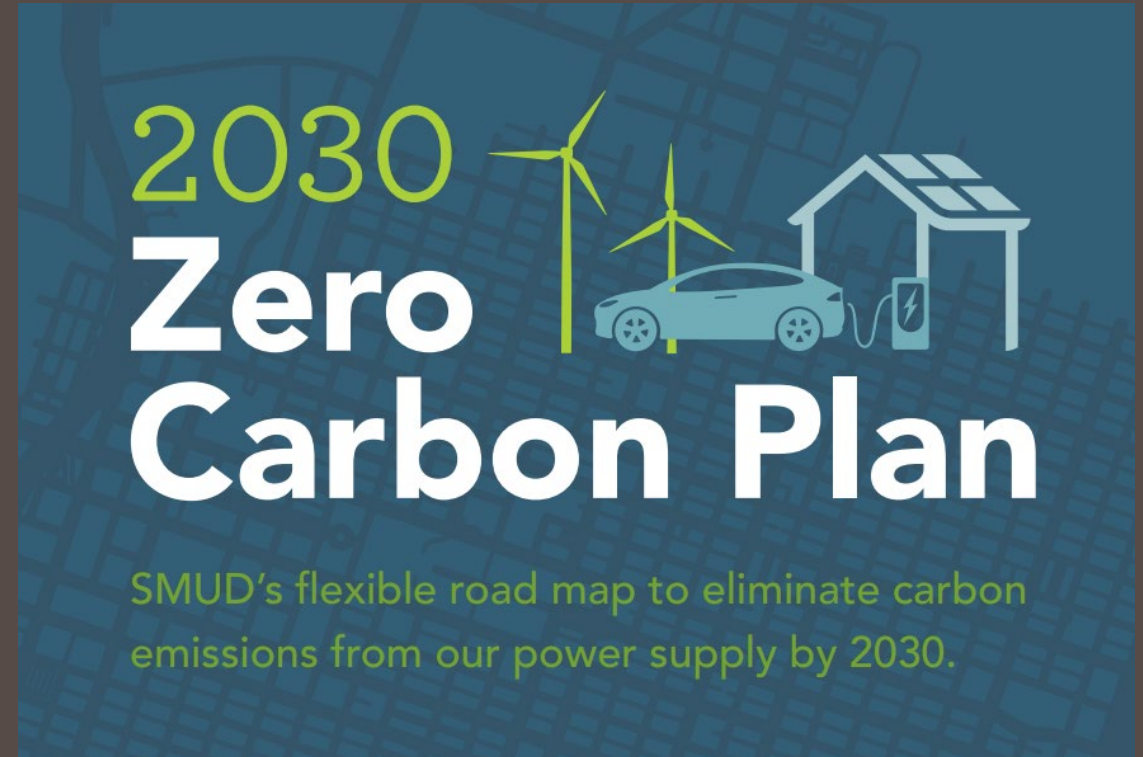
April 15, 2026

Powering forward.  
Together.



# Agenda

- **Journey to zero**
- **Utility scale project progress update**
- **Reliability update**
- **Progress toward 2030 goals**
- **Affordability update**
- **Integrated Resource Plan**
- **Q & A**

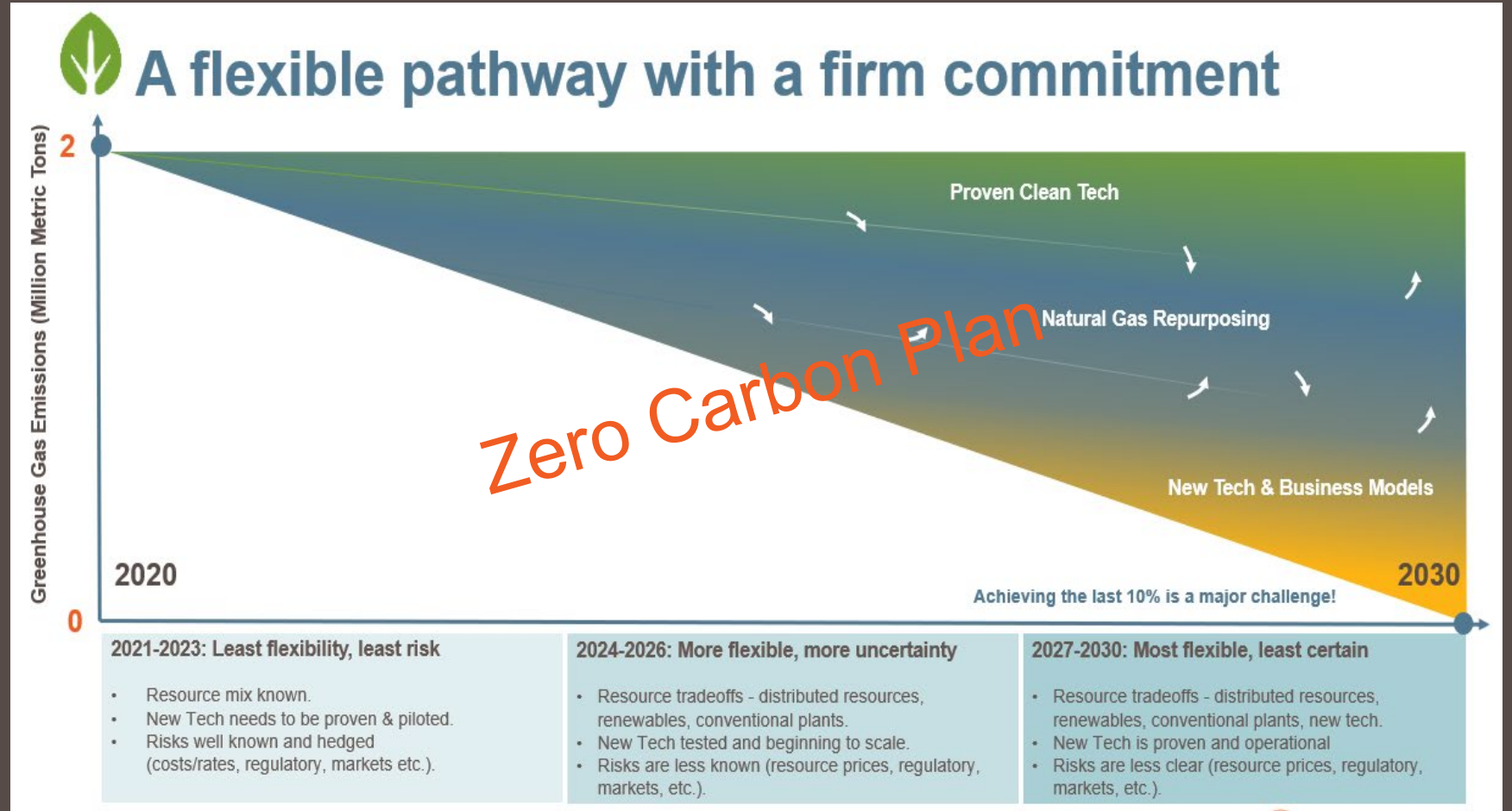


# Zero Carbon Plan: Journey to zero

## Progress:

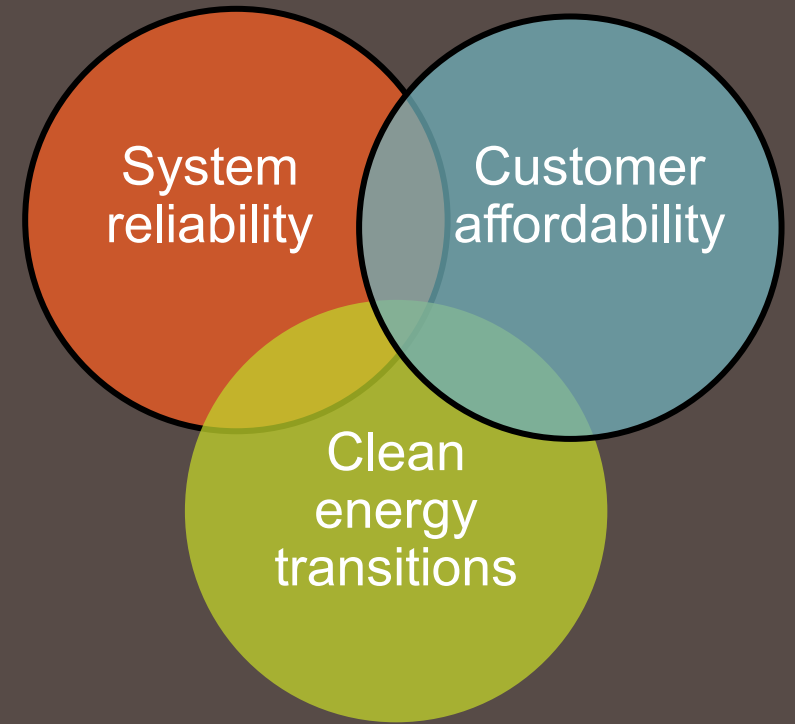
- 90% proven clean tech.
- 10% new tech.
- Utility Scale and Distributed Energy Resources (DERs) / load flexibility.

## Headwinds & challenges to our guardrails.



# Guardrails: Affordability & reliability

The Zero Carbon Plan was designed to be a flexible pathway, without compromising the guardrails of **affordability & reliability**.

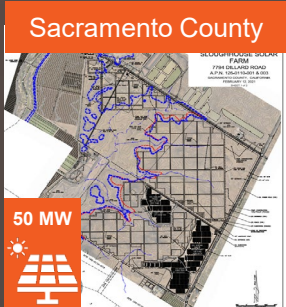


# Utility scale project progress

Powering forward.  
Together.

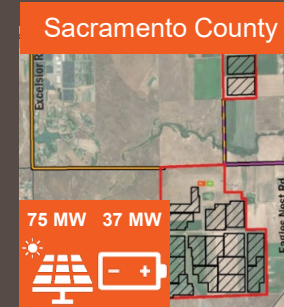


# Local utility scale renewable & storage projects



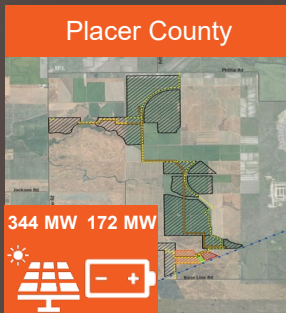
## Sloughouse – Complete

- 3<sup>rd</sup> party PPA
- Online: COD 7/14/25
- Term: 20 years
- Annual generation: ~138K MWh
- GHG reduction: ~54K MT



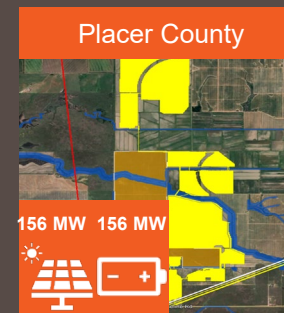
## Oveja Ranch – Under evaluation

- SMUD developed (permitting) – TBD
- Online: TBD
- Annual generation: ~190K MWh
- GHG reduction: ~74K MT



## Country Acres – Construction underway

- SMUD developed – PPA
- Online: 2027
- Term: 30 years
- Annual generation: ~637K MWh
- GHG reduction: ~248K MT



## Curry Creek – Under evaluation (Formally Country Acres II)

- SMUD developed (permitting) – TBD
- Online: TBD
- Annual generation: ~442K MWh
- GHG reduction: ~172K MT



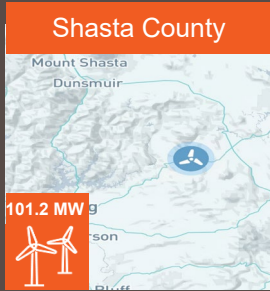
## Dry Creek – Construction underway

- SMUD developed – PPA
- Online: 2027
- Term: 20 years

**TOTAL GHG reduction: ~548K MT**

**Additional Under Evaluation: 275MW Solar + 275MW Storage (~235K MT GHG reduction)**

# Regional renewable projects



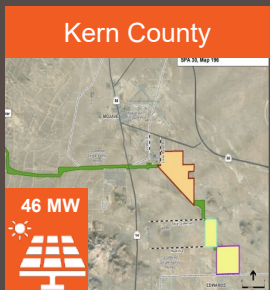
## Hatchet Ridge – Complete Dec. 2025

- 3<sup>rd</sup> party PPA
- Term: 7 years
- Annual generation: ~275K MWh
- GHG reduction: ~107K MT



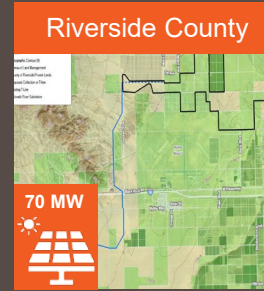
## SunZia – Construction near complete

- 3<sup>rd</sup> party PPA
- Online: April 2026
- Term: 15 years
- Annual generation: ~488K MWh
- GHG reduction: ~190K MT



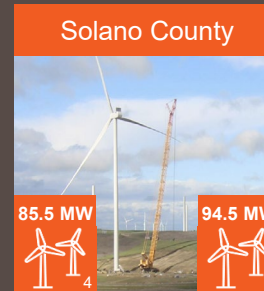
## Terra-Gen – NEW

- 3<sup>rd</sup> party PPA
- Online: Jan. 2027
- Term: 8 years
- Annual generation: 125K MWh
- GHG reduction: ~49K MT



## Grace – NEW

- 3<sup>rd</sup> party PPA
- Online: Dec. 2027
- Term: 20 years
- Annual generation: ~147K MWh
- GHG reduction: ~57K MT

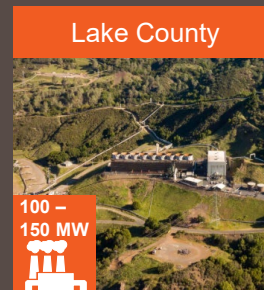


## Solano 4 – Complete 2024

- SMUD developed - EPC
- Annual generation: ~232,000 MWh
- GHG reduction: ~90k MT

## Solano 5 (Solano 2 Repower) – Under evaluation

- SMUD Developed (permitting) - TBD
- Annual generation: 327K MWh (80% increase)
- GHG reduction: ~128K MT



## Geysers – Extended & expanded

- 3<sup>rd</sup> party PPA
- Online: Jan. 2023
- Term: 20 years
- Annual generation: ~1,314,000 MWh
- GHG reduction: ~504K MT

**TOTAL GHG reduction: ~1,096K MT**

**Additional Under Evaluation: 425MW Solar + 331MW Storage + 40MW Geothermal (~516K MT GHG reduction)**

# New technology update

## Calpine - Sutter carbon capture & sequestration (CCS) project

Up to 1.7 million metric tons of GHG stored annually.

1MW Los Medanos Energy Center (LMEC) CCS demonstration project showed success in capturing GHG >95%.

Finalizing Front-End Engineering Design (FEED) study - will inform power purchase agreement (PPA) pricing.

\$270 million DOE award to add CCS technology to Sutter Energy Center repealed. 45Q tax credit incentive remains.

SMUD supported CA AB881 establishing state regulations for safe transportation of CO<sub>2</sub> by pipeline. Companion bill SB614 passed & signed by Governor.

**Next steps:** SMUD & Calpine working to develop a potential PPA.



Sutter decarbonization project



CCS demonstration

# New technology update

## Fuel cell w/ CCS

### Fuel cells

Can operate on natural gas, biogas or hydrogen blends.

Electrochemical reaction without combustion, avoiding  $\text{NO}_x$  &  $\text{SO}_x$ .

High availability energy supply asset. Base load solution.

Modular & scalable technology.

Net power addition: Unlike traditional amine scrubbing, which can consume ~20% of a plant's output.



### Carbon capture

Fuel cells are great resources for CCS.  $\text{CO}_2$  is transferred across electrolyte & concentrated at anode, making it more efficient to capture & store.

Evaluating proximity to  $\text{CO}_2$  transport pipeline options & suitable geological storage sites to complete sequestration loop.

**Next steps:** Continue to evaluate project & partnership opportunities.

# Zero Carbon Plan reliability study update

# Reliability study highlights



**Operational  
diversity &  
flexibility**

**Edge  
operating  
conditions**

**System  
reliability**

**Unanticipated  
system peak  
demand**

**Focus on  
emissions  
reductions**

# Edge operating condition: Tule fog impacts

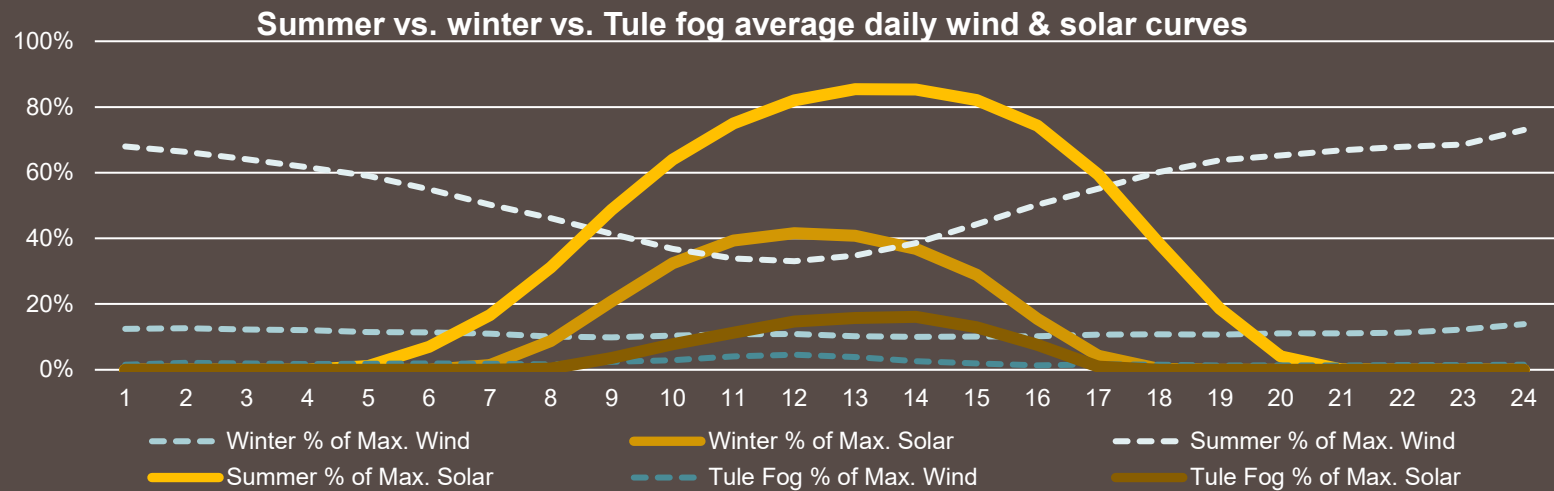
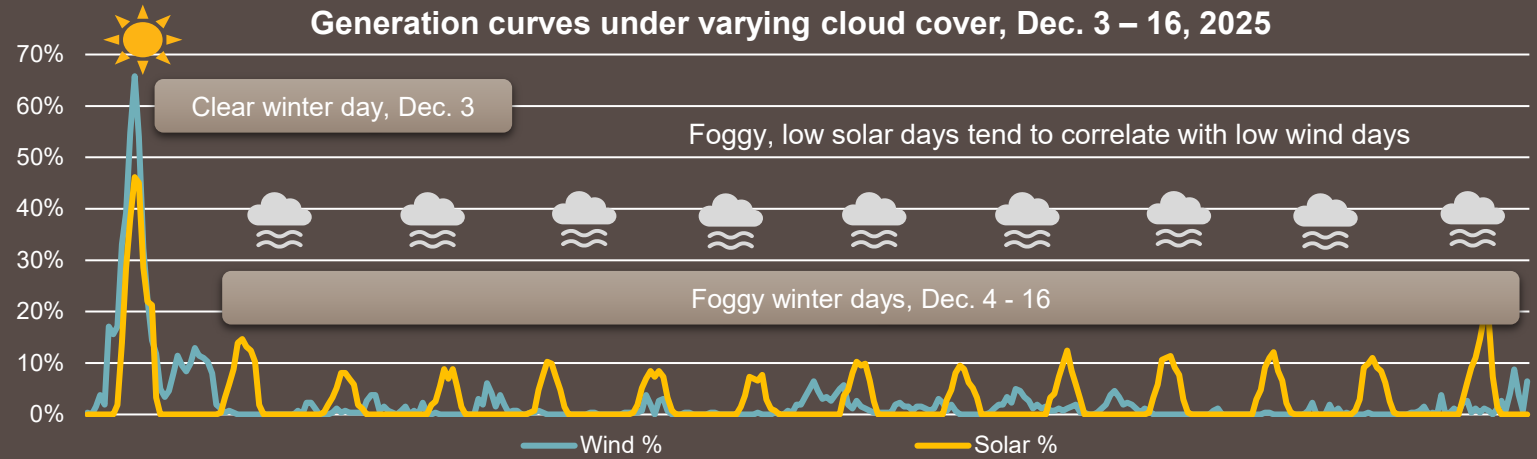
Tule fog event in California's Central Valley  
Nov. 24 – Dec. 9, 2025



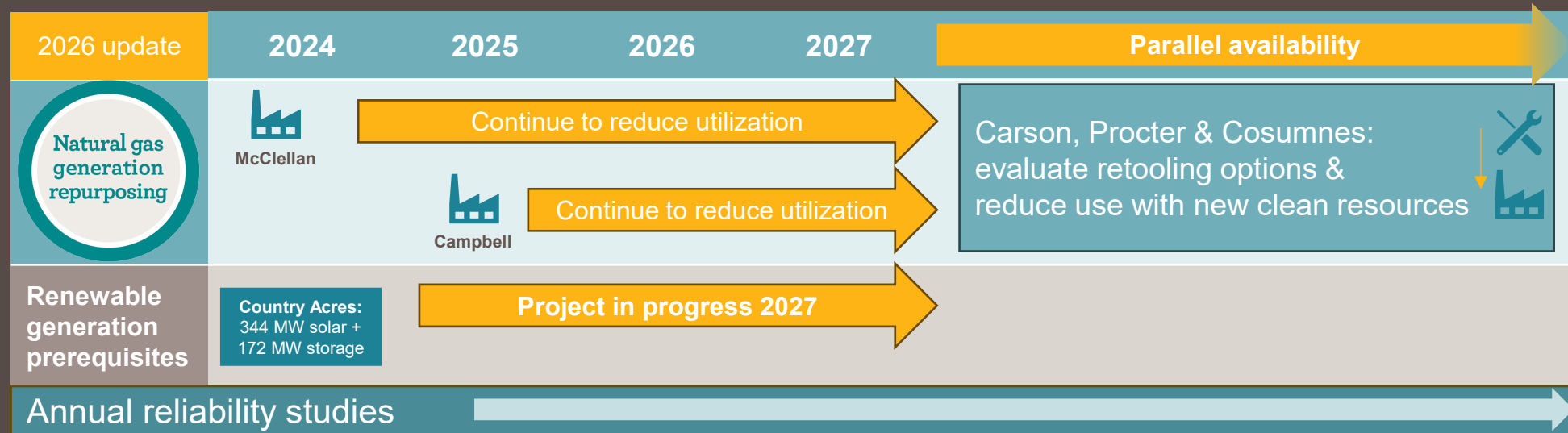
16-day Tule fog event in 2025 reduced utility-scale solar generation to as low as 10% of potential max generation.



Only 34% of the seasonal winter average was generated during this weather event.



# McClellan & Campbell transition update



**McClellan & Campbell** replacement resources delayed, shifting original schedule out. Aligns with SB100 State Assessments.

- Updated reliability studies confirmed Country Acres project can replace McClellan & Campbell.
- Once Country Acres is online, parallel availability of thermals will be needed to ensure a reliable & affordable transition.
- Continue to evaluate transition to reliability use.

# Cosumnes Power Plant (CPP) retooling

Turndown project allows CPP to reduce MW output while keeping both gas turbines online, resulting in:



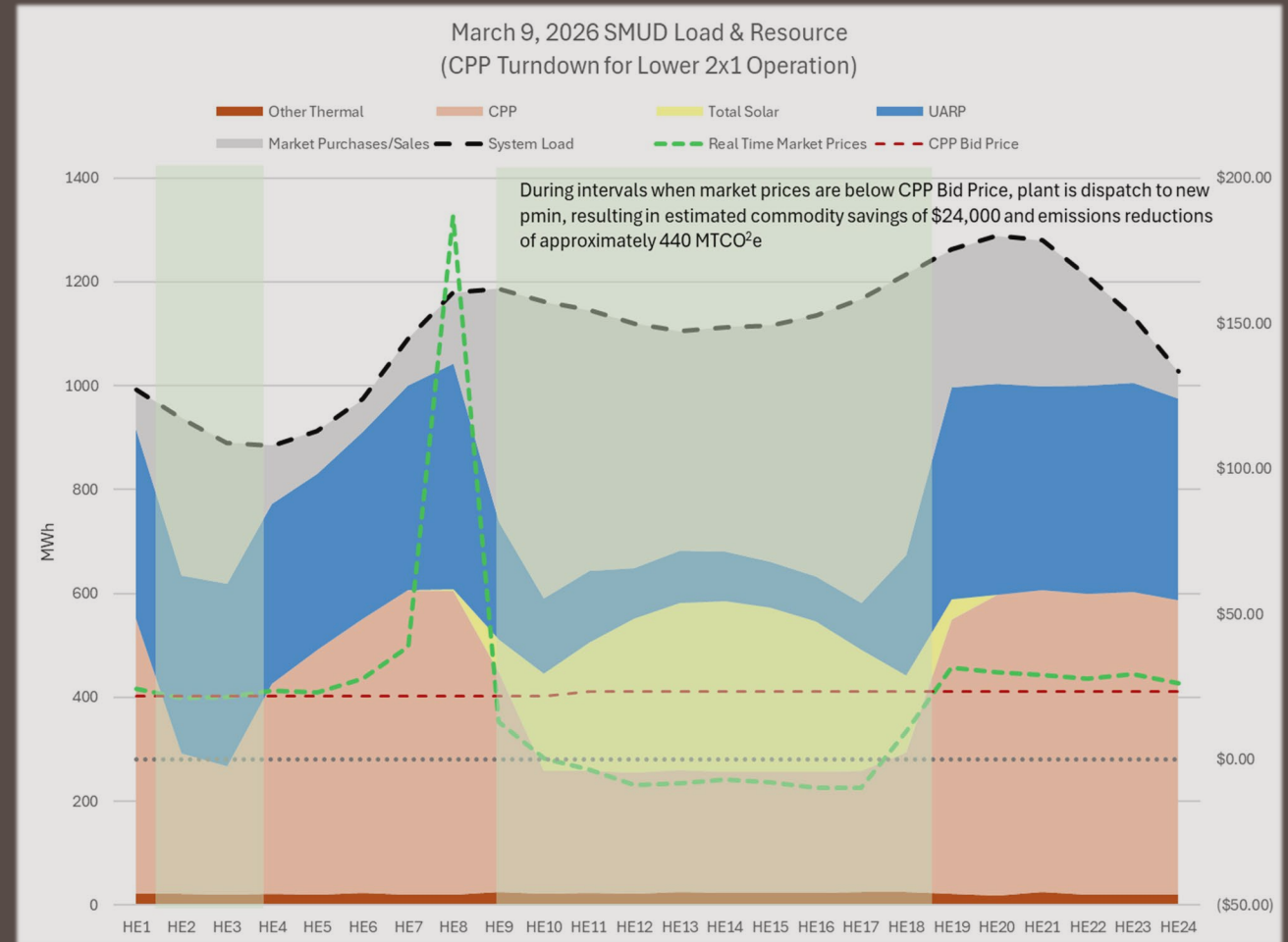
**Increased operational flexibility.**  
Up to ~\$10 million/year savings in commodity cost (\$24K/day commodity savings).



**Up to 27% reduction in GHG at CPP (440 MTCO<sup>2</sup>e/day).**

Completed Q4 2025

**TOTAL GHG reduction: ~100K MT**



# Campbell Soup Generation (CSG) retooling

Turndown project allows CSG to reduce MW output, resulting in:



## Increased operational flexibility.

- Operate CSG ~10% lower while maintaining emission compliance when less generation isn't needed.

**Up to an estimated \$180,000/year savings in commodity cost.**



## Reduced cycling wear & tear.

**Up to 5% reduction in GHG.**



**TOTAL GHG reduction:  
up to ~7.6K MT**

Completion date: Q4 2026

# Procter & Gamble Generation (PGG) retooling

Utilizing auxiliary boilers allows PGG to maintain steam supply requirements to our steam host, resulting in:

## Increased operational flexibility.

- Shutdown PGG when not needed for reliability or energy demand while maintaining steam host requirements.
- Aux. boilers utilize 1/5 fuel of combustion turbine at minimum emission compliant ranges.

**Up to an estimated \$2.3 million/year savings in commodity cost.**



**Reduced fuel, commodity cost & GHG emissions.**

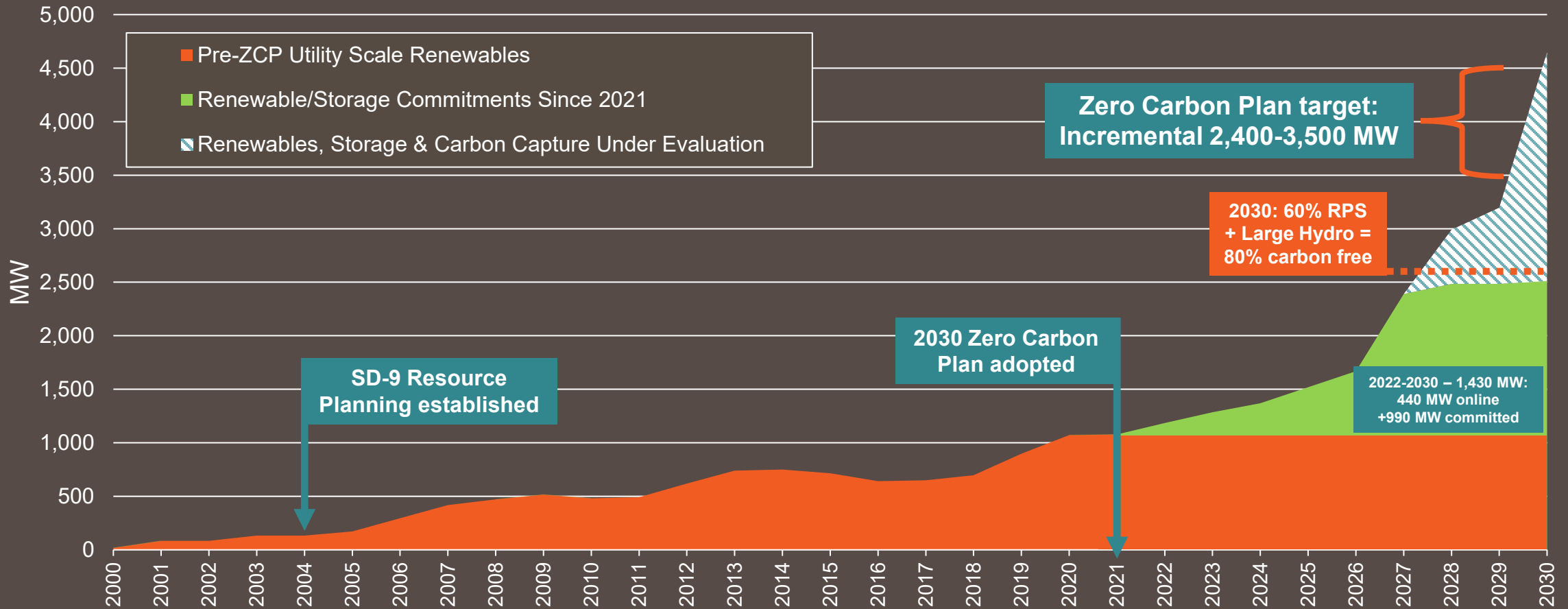


**TOTAL GHG reduction:  
up to ~56K MT**

Completion date: Q4 2026

# ZCP utility scale targets & progress overview




# Utility scale clean energy progress



- So far we've committed to 1,430 MW this decade (+130% of what we accomplished the previous 2 decades).
- Meeting the 2030 60% state renewable requirement (RPS), plus our large hydro = ~80% carbon free (cf).
- Evaluating ~2,100 MW of renewable, storage, and carbon capture resources

# ZCP affordability pressures on clean resources

Clean energy resource costs have increased significantly since 2020

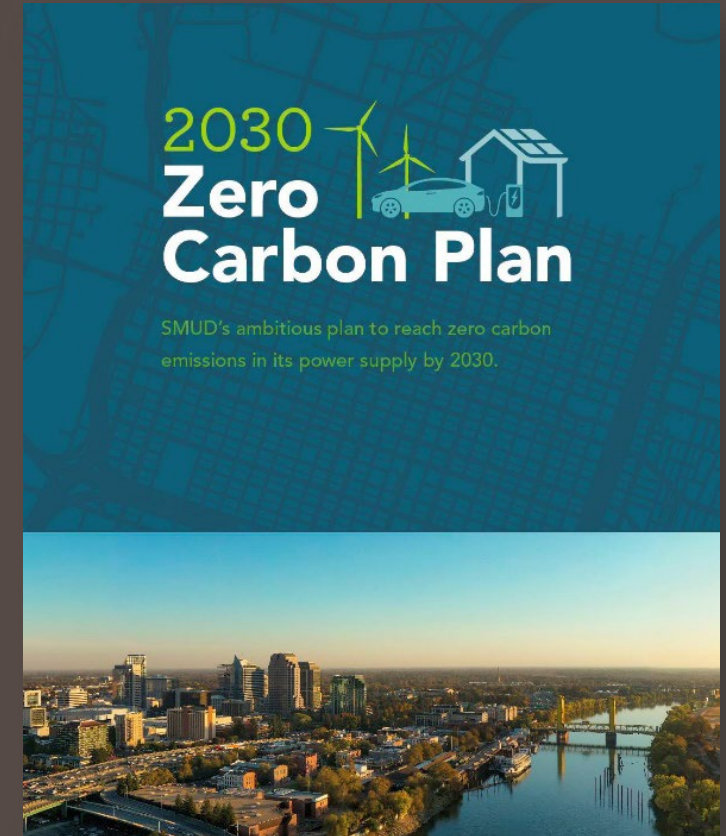
Areas of significant cost pressure	ZCP assumption	Change in ZCP assumption	Cost impact
<b>Supply chain slowing &amp; new import tariffs</b>	<ul style="list-style-type: none"> <li>In 2020, renewables &amp; storage resources were reasonably priced.</li> <li>Past 2 decades, costs were trending down.</li> </ul>	<ul style="list-style-type: none"> <li>Pandemic &amp; supply impacts:                             <ul style="list-style-type: none"> <li>Slowed supply chain &amp; delayed schedules.</li> <li>Significantly increased costs of renewable &amp; storage resources, while increasing demand</li> </ul> </li> <li>Tariffs impacts:                             <ul style="list-style-type: none"> <li>Further increase costs.</li> </ul> </li> </ul>	
<b>Federal investment &amp; production tax credits</b>	<ul style="list-style-type: none"> <li>Tax credits were expected to reduce costs of renewables &amp; new technology resources.</li> </ul>	<ul style="list-style-type: none"> <li>New administration:                             <ul style="list-style-type: none"> <li>Tax credits are sunseting now &amp; will significantly increase the cost of these resources.</li> </ul> </li> </ul>	
<b>Federal &amp; state grant funding opportunities</b>	<ul style="list-style-type: none"> <li>Grant awards were a core part of our strategy to keep rates affordable.</li> </ul>	<ul style="list-style-type: none"> <li>New administration:                             <ul style="list-style-type: none"> <li>Significant roll back of grants, including the grant award for the Calpine CCS project (\$270 million)</li> </ul> </li> </ul>	

- We've had to navigate these renewable cost increases to maintain affordable rates.
- The IRP will explore several options to navigate our affordability guardrails to 2030 & beyond.

# Integrated Resource Plan (IRP) update

# 5-year anniversary of 2030 ZCP/IRP

- 2026 marks 5-year anniversary of SMUD Board's adoption of decarbonization IRP.
- Significant progress to-date & continued work toward decarbonizing Greater Sacramento economy.
- Many lessons over past 5 years & significant changes to conditions around the plan - time to update IRP.
- We also have a California requirement to file an IRP with the California Energy Commission in Sept. 2027.



# Key questions to answer in IRP



**What does our decarbonization path look like considering all the challenges in our industry today?**



**What major generation & grid investments are needed in the coming years to support load growth in the region?**



**How do we maintain reliability & affordability on our path to zero carbon? What levers do we have to balance these objectives?**

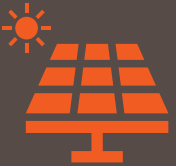


**What will the transition to a fully decarbonized grid look like & how will regionalization help?**

# Key information to update in the IRP



Customer demand forecasts, including energy efficiency, electrification, clean distributed resources & programs.



Proven clean technology resource commitments/availability & pricing forecasts.



Clean emerging technology resource availability & pricing.

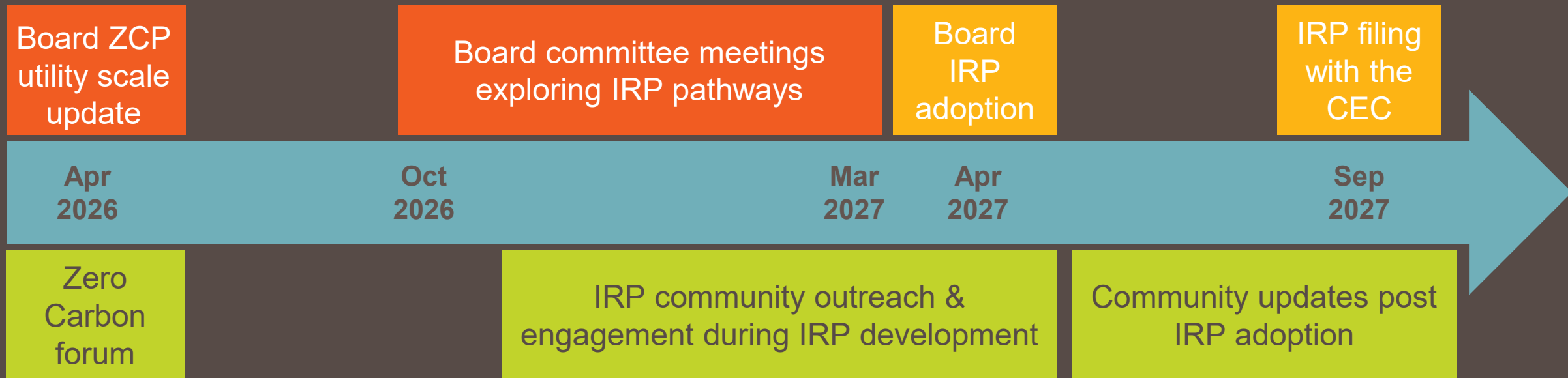


Regulatory requirements & market developments (i.e. renewable portfolio standard, cap and invest, extended day ahead market, etc.).



Thermal generation retooling, system limits & reliability requirements.

# 2026-27 IRP schedule



Board & public IRP process to kick off Oct. 14, 2026.  
SMUD will engage the community through workshops & outreach during the process.

# Questions?