

Program Advisory Council Meeting

Q2 2026

July 23, 2026



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Agenda

Introduction Agenda	1 minute
Safety	3 minutes
Meeting Timeline	1 minute
Market Update	1 minute
EV Good News!	6 minutes
EV Fleet Update	15 minutes
EV Advisory Services (EVAS)	10 minutes
EV Charge Parks Update	7 minutes
EPIC 4.03	10 minutes
VGI Pilots	15 minutes
Microgrid Techno-Economic Evaluation	15 minutes
Conclusion	1 minute



SUMMER SAFETY TIPS
Stay Safe. Have Fun. Make Memories!

1 WEAR SUNSCREEN

Apply broad-spectrum sunscreen SPF 30 or higher 15 minutes before going outside. Reapply every 2 hours or after swimming or sweating.

2 STAY HYDRATED

Drink water throughout the day, even if you don't feel thirsty. Avoid sugary drinks and limit caffeine.

3 WATER SAFETY

Swim in designated areas with a lifeguard. Never swim alone. Always wear a life jacket when boating.

4 DRESS FOR SUMMER

Wear lightweight, light-colored, and loose-fitting clothing. Don't forget a hat and UV-protective sunglasses!

5 STAY IN THE SHADE

Take breaks in the shade, especially between 10 a.m. and 4 p.m. when the sun's rays are strongest.

6 BUG SAFETY

Use insect repellent with DEET or picaridin. Wear long sleeves and pants in areas with bugs. Check for ticks after being outdoors.

7 FOOD SAFETY

Keep food cold and covered. Wash hands before eating. Don't leave perishable food in the sun.

8 HEAT SAFETY

Avoid intense activity during the hottest part of the day. Watch for signs of heat exhaustion: dizziness, nausea, headache, rapid heartbeat.

9 BE ACTIVE, SAFELY!

Wear a helmet when biking, skateboarding, or scootering. Follow traffic rules and stay aware of your surroundings.

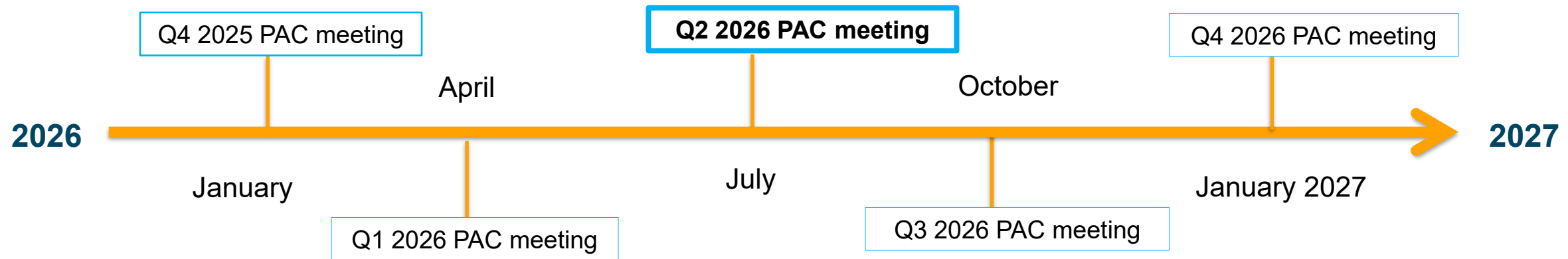
10 STAY SAFE EVERY DAY

Know important phone numbers. In an emergency, call 911. Trust your instincts and ask a trusted adult for help.

BE SMART. BE PREPARED. ENJOY SUMMER! A LITTLE PRECAUTION TODAY LEADS TO A SAFE TOMORROW.

Overview

- PG&E has expanded our efforts on transportation electrification (TE) with several filings, pilots and programs in progress
- CPUC has directed PG&E to consult a Program Advisory Council (PAC) in the development of key TE pilots and programs to gain feedback from industry stakeholders
- This platform will serve to gather insight and feedback on PG&E's proposals and ongoing programs



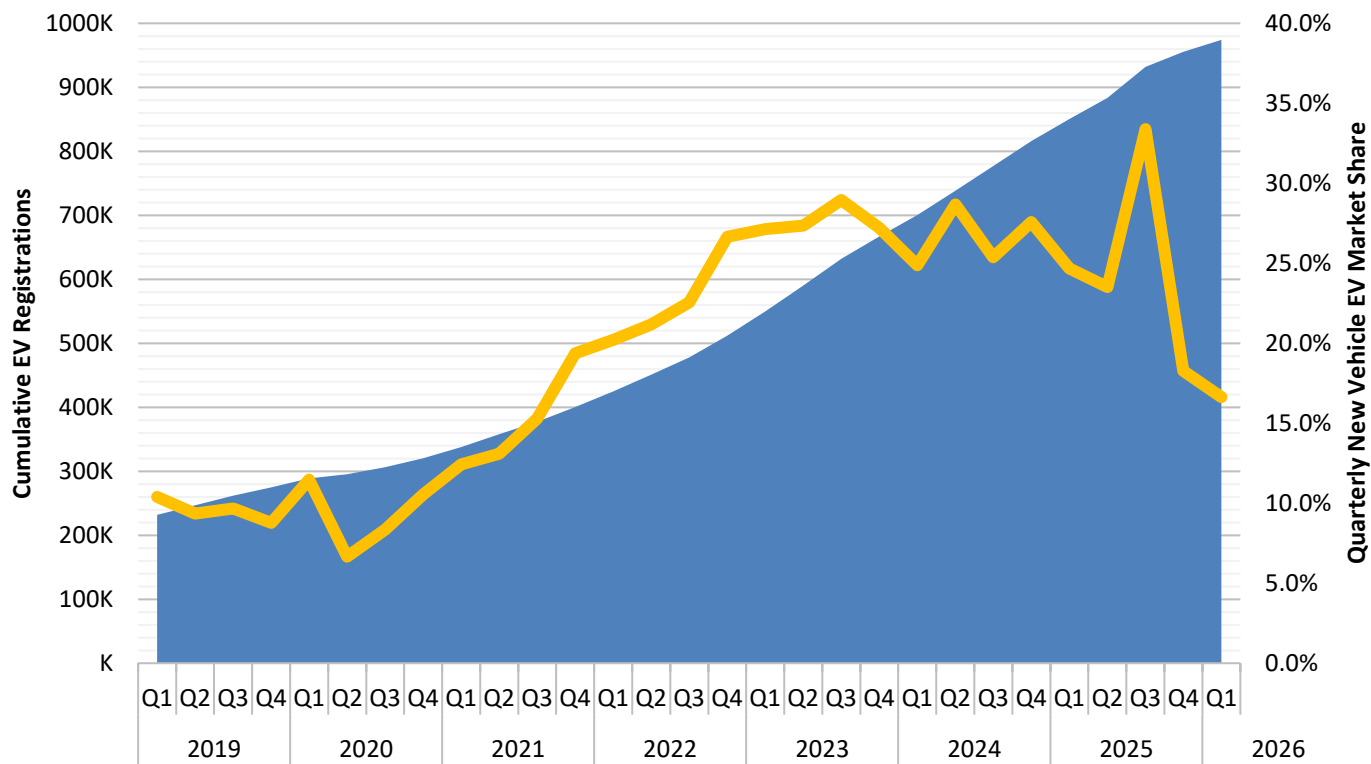


EV Market Update

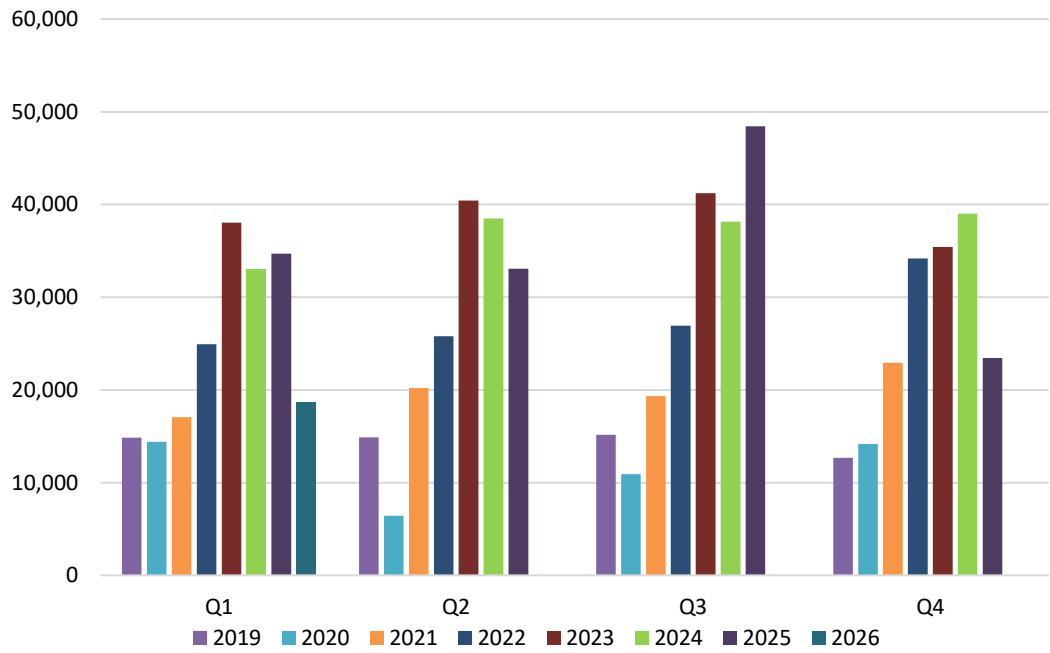
988,238

EVs registered in PG&E service territory through April 2026

Cumulative New EV Registrations PG&E Service Territory



New EV Registrations by Quarter



California fights back: nearly \$2 *billion* in new funding for ZEVs

Efforts and investments part of the state's broader "ZEV Forward" initiative to double down on clean transportation

- **\$1 billion** through California Clean Fuel Reward, retooled as MHD vehicle incentive program
- **\$270 million** for new "MyFirstEV" statewide light duty incentive program
- **~\$150+ million** (through 2030) for new Driver Assistance Program for rideshare drivers
- **\$150 million** for the Community Air Protection Program, which can support clean transportation projects.
- **\$135.5 million** for California's Clean Truck and Bus Voucher Incentive Project (HVIP)
- **\$130 million** to replace polluting heavy-duty engines through the Carl Moyer Program
- **\$35 million** for clean off-road equipment through the Air Quality Improvement Program
- **\$20 million** for Californians with lower incomes through Clean Cars 4 All





California Clean Fuel Reward Launch Event – Port of Long Beach



↑
CARB chair Lauren Sanchez

→
The Forum Mobility backdrop for the event

The CCFR Steering Committee – SCE, PG&E, SDGE, LADWP, SMUD, Northern & Southern POUs





California Clean Fuel Reward (CCFR)



POWERED BY THE LOW CARBON FUEL STANDARD

California Clean Fuel Reward Program

CCFR provides an instant point-of-sale discount for eligible commercial customers purchasing or leasing new battery-electric commercial vehicles (Class 2b–Class 8) with a qualifying retailer, reducing upfront vehicle costs. **Customers receive an immediate reduction in vehicle cost.**

Eligibility Details

Eligible customers include **businesses**, **government agencies**, and **nonprofit organizations** purchasing or leasing qualifying vehicles through approved participating retailers.

- Vehicle must maintain an active California registration and active ownership/lease agreement for at least three (3) years
- There's no current limit on the number of rewards eligible per customer, the reward is applied per eligible vehicle
- The vehicle must be purchased or leased new (7,500 miles or less; not previously owned / leased by a customer)
- **Ineligible** vehicles types include buses and vehicles not intended for on-road use (terminal tractors, yard spotters, etc.)

Reward Amounts

Reward amounts vary based on the vehicle's weight class and can only be applied once per eligible vehicle.

Class 2b*	Class 3-4	Class 5	Class 6-7	Class 8
\$7,500	\$15,000	\$60,000	\$85,000	\$120,000

Find a Qualifying Retailer Today: <https://cleanfuelreward.com/site/retailers>

**Class 2b Reward is only available to public fleets subject to the Advanced Clean Fleets (ACF) Rule.*

INTERNAL

SB 350 Standard Review Projects



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EV Fleet Update



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EV Fleet Program Update

Status as of 6/30/2026

	Sites	MDHD EVs Committed
Applications	861	-
Viable Contracts ¹	444 ²	8,002
Construction Complete	205	4,616
Activated	189	4,228

¹Viable contracts are all contracts signed to date excluding cancelled and withdrawn.

² Does not reflect approximately 50 contracts that are in the process of being cancelled.

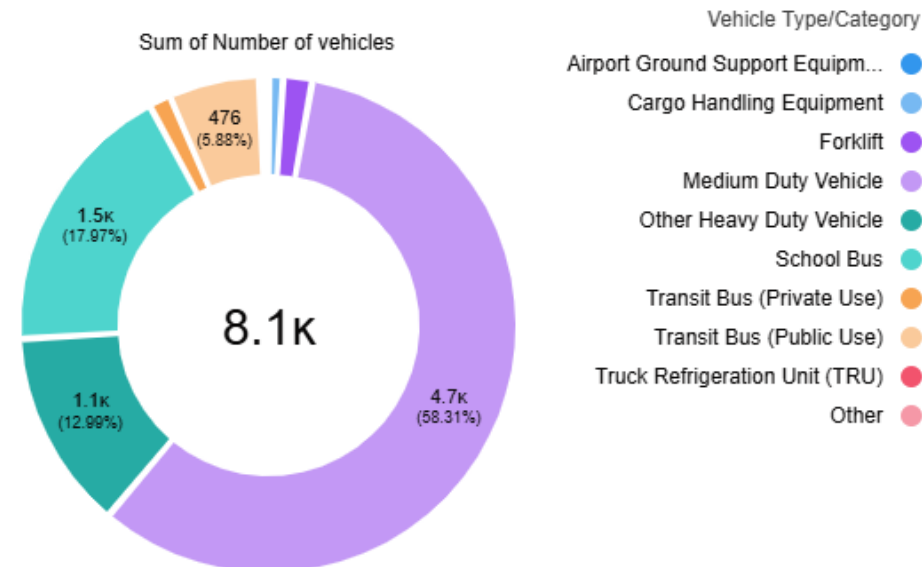
Program Budget Overview

Spend-to-Date	Remaining Funds
\$100.8M	\$135.5M

Lessons Learned/Best Practices

- Program closed the application window on June 30 and is completing site assessments to sign final contracts by December 31, 2026.
- Program is forecasted to fully utilize infrastructure budget; may have small waitlist of ~5-10 projects remaining – waitlisted customers will be educated about EV Power Ready and EV Advisory Services to continue supporting their electrification projects.

Viable Contracts: Vehicle Type



Program Highlights

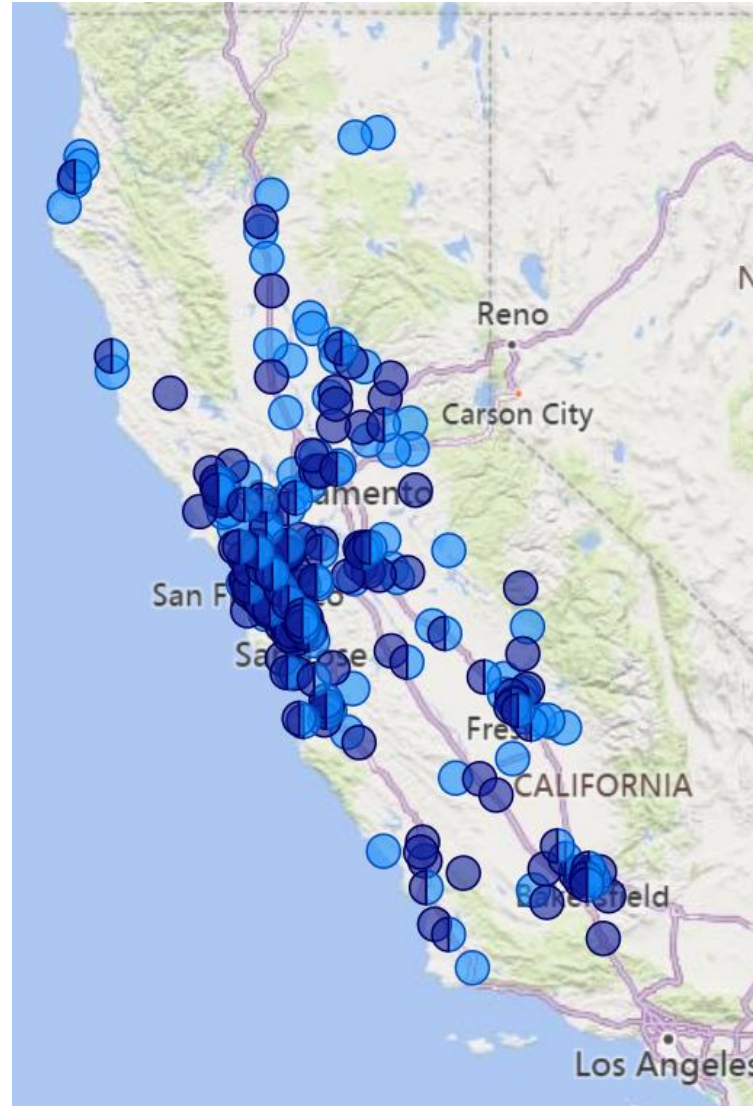
- Program has exceeded its vehicle target (6,500 vehicles) and site goal (375 sites)
- 204 of the 444 signed contracts **(46%) are in DACs**
- Signed 14 contracts in Q2, supporting 243 vehicles
- Program is seeing a **diverse mix of vehicle types**; medium duty vehicles are dominant due to various applications, availability, operational compatibility; school buses, heavy duty vehicles, and transit buses are also successfully enrolling in the program

EV Fleet Construction and Activation

Activated sites and sites in construction by zip code

Status

- Activated Site
- Contract Signed



EV Advisory Services (EVAS)



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EV Advisory Services (EVAS)

Status as of 7/9/2026

Program to-date	Total
Sites Served	558
Unique Customers	142

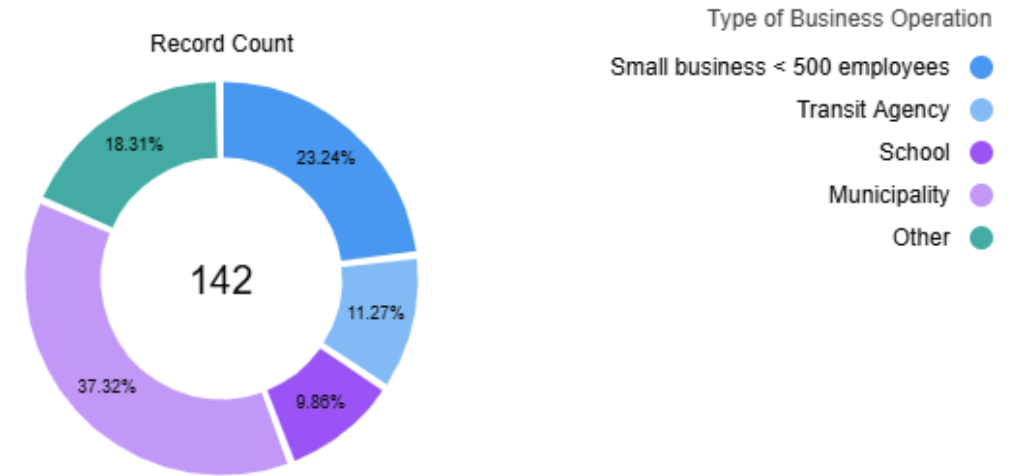
Program Budget Overview

Spend-to-Date	Remaining Funds
\$4.29M	\$14.48M

Program Updates

- Advice Letter (7884-E) Suspension Notification received May 5, 2026, beginning May 6, 2026, with an expected duration of initial suspension period of 120 days.
- Current EV Advisory Services under the Transportation Electrification Advisory Service (TEAS) set to end at the end of 2026, with minor closeout into 2027.

Customers Served by Segment



Lessons Learned and Best Practices

EV Advisory Services and Rule 29:

Many EV Advisory Service customers are eligible for EV service under PG&E's Rule 29. The EV Advisory Service team is working closely with PG&E's Service Planning and Design team to update and create new services and documentation to further assist customers with pre-application support, customer readiness, and Rule 29 application walk-through/guidance.

AB1083 Standard Review Project



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EV Charge Parks Update



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EV Charge Parks Program Update

Status as of 6/30/2026

		Sites	Ports
Applications		131	0
Contracted Sites		6	54
Constructed		0	0
Activated		0	0

Program Budget Overview

Spend-to-Date	Remaining Funds
\$1.4	\$4.15M

Lessons Learned / Best Practices

- Performed electronic over-the-counter reviews with State Fire Marshal, helping to reduce the review timelines and secure day of approvals for project plans.

Program Update

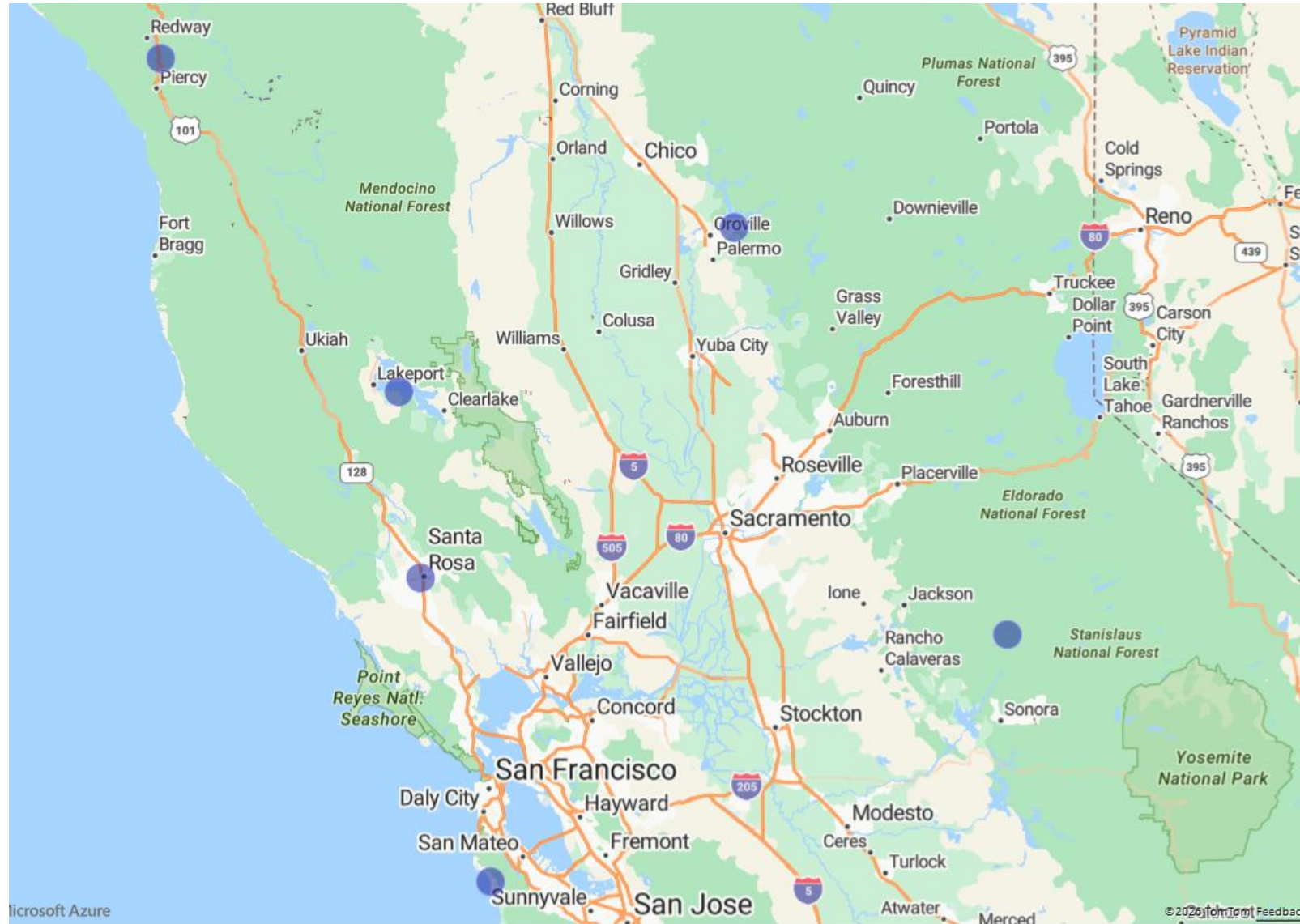
- Calaveras Big Trees and Benbow Lake in preconstruction phase and to break ground in Q3.
- 5 out of 6 sites have completed permitting: Calaveras, Clear Lake, Benbow, Lake Oroville, and Sonoma.
- Half Moon Bay project undergoing public review and comments with Local Coastal Development agency, then will enter final phases of permitting.
- Remaining ROEs are in development but taking slighter longer due site conditions and reviews.



EV Charge Parks Sites

State Parks in PG&E Service Territory

Assessment Status ● Contract Signed



Calaveras Big Trees EV Project

Calaveras Big Trees was the first project to enter the preconstruction phase in EV Charge Parks program.

Key Project Milestones:

- Site addenda signed: November 2024
- Executed ROE: May 13
- Approved permits: May 22
- Preconstruction kick-off: June 25
- Break ground: Sept 8th

Site Location

1170 E. Highway 4
Arnold, CA 95223

Number of Ports

L2: 8 ports



EPIC 4.03



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EPIC 4.03 Overview & Objectives

Program Overview

EPIC 4.03 EV Charging Solutions for Parking-Constrained Customers (PCC) ~ \$4.8 million

Goal: Identify scalable EV charging solutions to inform PG&E's strategy to serve customers with parking constraints

Timeline: Launched Q1-2025 and concludes Q4-2028

- Phase 1 – Market Analysis and V1 Report
- **Phase 2 – Demonstration Projects & Evaluation**
- Phase 3 – V2 Report and EPIC Report

Objectives

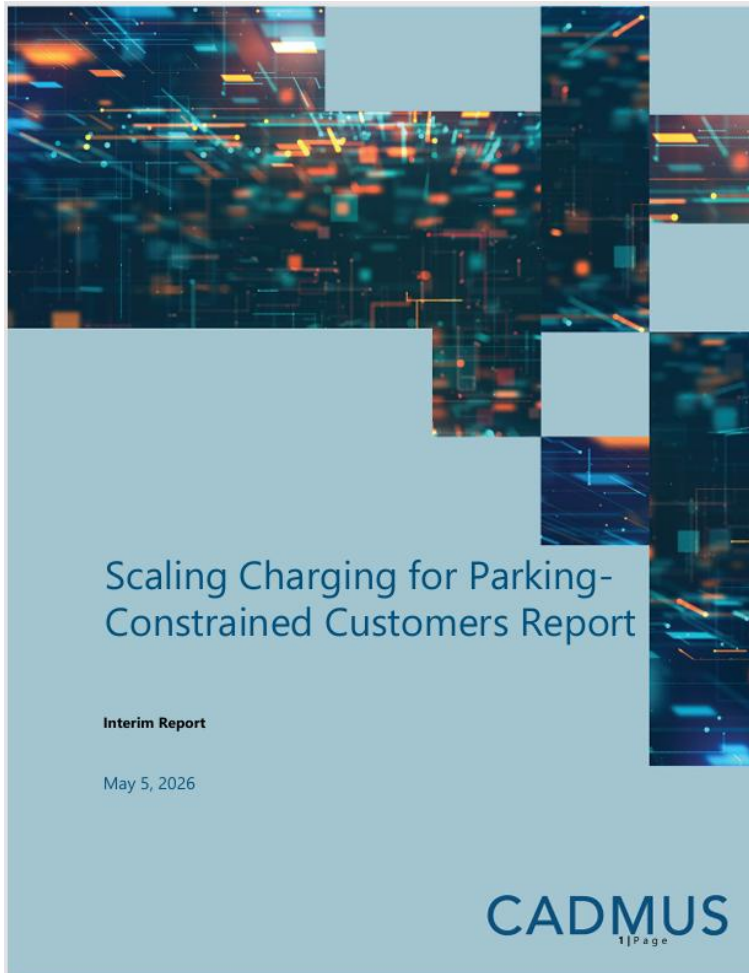
Quantify and describe the PCC market across PG&E's service territory, including the size, characteristics, and geographic distribution of customers lacking dedicated home parking or access to home charging.

Identify cross-cutting deployment barriers, with emphasis on process and coordination costs (soft costs) that drive delays and total installed cost.

Access practical charging technology deployment models, including smart outlets, public right-of-way (PROW) options, and community hubs, based on feasibility, cost, scalability, and user experience.

Provide actionable recommendations by stakeholder role to support faster, more predictable, and more equitable deployment.

PG&E Report



Links in chat

PG&E Currents Article

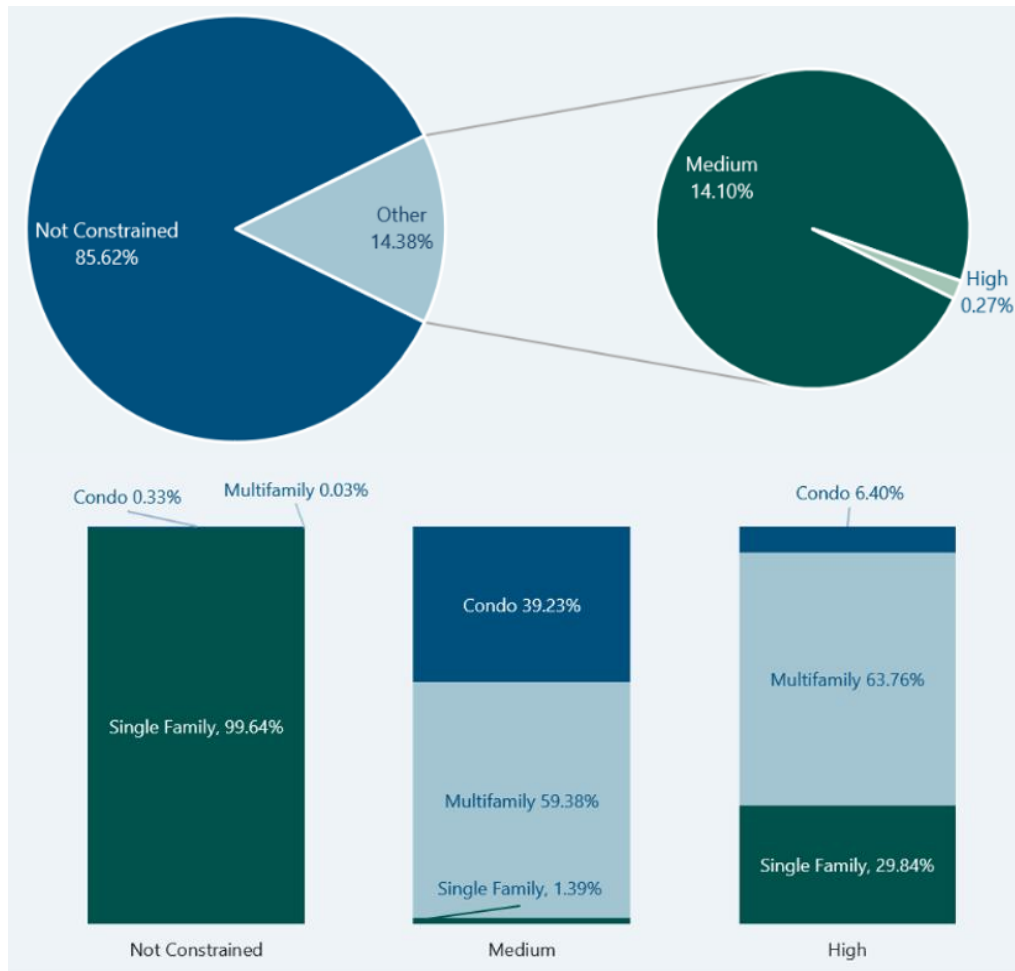


PG&E Developing Solutions for Customers Without Easy EV Charging Access

Curbside charging and chargers that connect to existing streetlights among the ideas

Phase 2 – Demonstrations

Market Analysis identified multi-family with unassigned parking/medium constraints as the most parking constrained customer segment



Technology Down-Selection identified three unique solutions for two primary use cases show below

Use Case	Solution
Medium Constraints – unassigned parking	1. Smart Outlets
High Constraints – no on-site parking	2. L2 Chargers Installed in the Public Right-of-Way • Pull power from existing building supply • Pull power from existing streetlights • New dedicated make-ready in 3. Community Charging Hub located near high PCC • Partner with established site developers

Additional Program Update



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VGI Pilots



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V2X Pilots: Current Status

Status

V2X Residential Pilot

Eligible Products

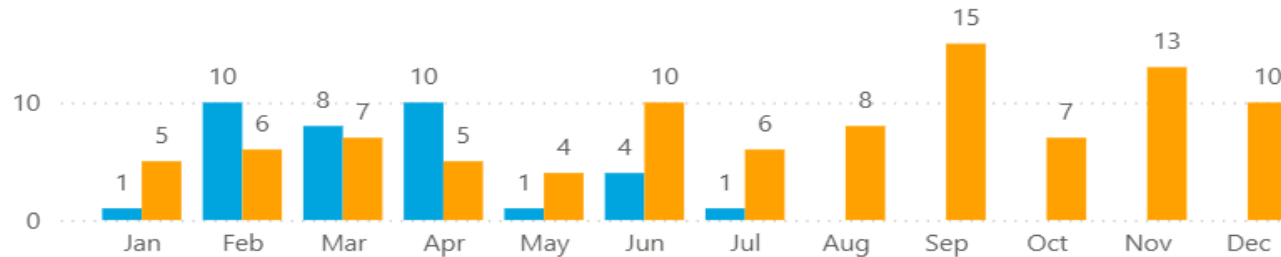
- Ford Charge Station Pro and Home Integration System paired with the Ford F-150 Lightning
- GM Energy PowerShift charger and V2H Enablement Kit paired with Chevrolet, Cadillac, and GMC EVs
- Tesla Powershare Gateway and Tesla Universal Wall Connector paired with the Tesla Cybertruck
- NEW! Wallbox Quasar 2 paired with the Kia EV9
- NEW! Dcbel Ara paired with the Nissan Leaf, Volvo EX90, and Polestar Polestar 3

Trend

Enrollments

Inception to Date Enrollments: 50

● Actual ● Target



Highlights

- PG&E signed contracts with 2 new aggregators to add 2 chargers and 4 more vehicles to the Eligible Products List.
- PG&E has been onboarding a new Customer Support Specialist to proactively engage customers in the pipeline to help them finish enrolling.
- Enrollment window will remain open through June 30, 2027 with data collection continuing through the end of 2027 and evaluation in 2028.

V2X Commercial Pilot

Eligible Products

- | | |
|-------------------------------|----------------------------------|
| BYD – RIDE (Bus): | paired with Tellus |
| Micro Bird & Blue Bird (Bus): | paired with Borg Warner |
| Nissan Leaf: | paired with Femata |
| NEW! Thomas Bus Gen1 (Bus): | paired with Tellus & Borg Warner |
| NEW! Thomas Bus Gen2 (Bus): | paired with Borg Warner |

Enrollments

Inception to Date Enrollments: 80

● Actual ● Target



- Added 6 new chargers at a Fremont USD site
- 11 additional chargers pending at Richmond First Student, Pittsburg USD, and Fremont USD.

*CPUC approved PG&E request sent March 30, 2026 - [PG&E AL 7873-E Update on PG&E's Vehicle-to-Everything Microgrid Pilot #3 in Compliance with Resolution E-5434, Ordering Paragraph 2](#). The V2X Microgrid pilot has now officially sunset.



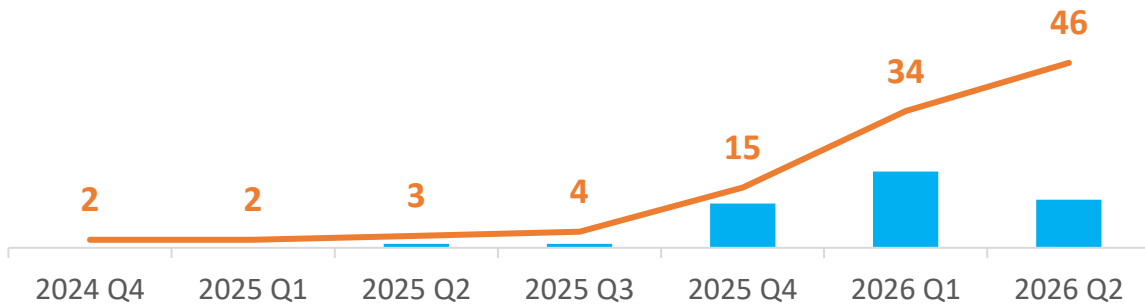
V2X Pilots: Enrollment Trends

Enhancements to our customer journey and advancements in the market have accelerated enrollments in Q1/Q2.

Residential V2X Pilot Adoption

- 90% of total participation enrolled in the last three quarters
- Zero customers enrolled in HFP export

YEAR 2026 Forecast: 240



Incremental Enrollment Cumulative Enrollment

Commercial V2X Pilot Adoption (Chargers)

- Enrolled 6 chargers across two sites and 115 are in the pipeline
- Both sites are enrolled in HFP

YEAR 2026 Forecast: 189



Incremental Enrollment Cumulative Enrollment



V2X Residential Pilot: Lessons and Observations in Q1 and Q2

Market momentum is accelerating with deeper OEM commitments and expanded participation

Key OEM partners investing in V2G

- New Tesla AC V2G partnership increases readiness for bidirectional participation (est. \$7-\$15k lower system + install cost) – forecasting 130 interconnections in 2026
- GM underlined their commitment to V2G at the June Empower event with a vision of reaching 52K customers in grid-tied programs by 2030

New Aggregator and OEM partnerships

- Bidirectional Energy and The Mobility House are underway to support expanded enrollment and learnings to scale across multiple partners

electrek
Tesla Cybertruck becomes first AC vehicle-to-grid asset in California through PG&E

AARIAN MARSHALL GEAR JUN 9, 2026 5:08 PM **WIRED**

GM Wants Your Electric Car to Power Your House—and Your Neighborhood

 **renzsadiwa** Edited • 3d
GM flew me out to San Francisco for GM Empower and showed me something super cool 🤖

A Cadillac Lyriq powering a full mini house. Lights, TV, fridge, all of it.

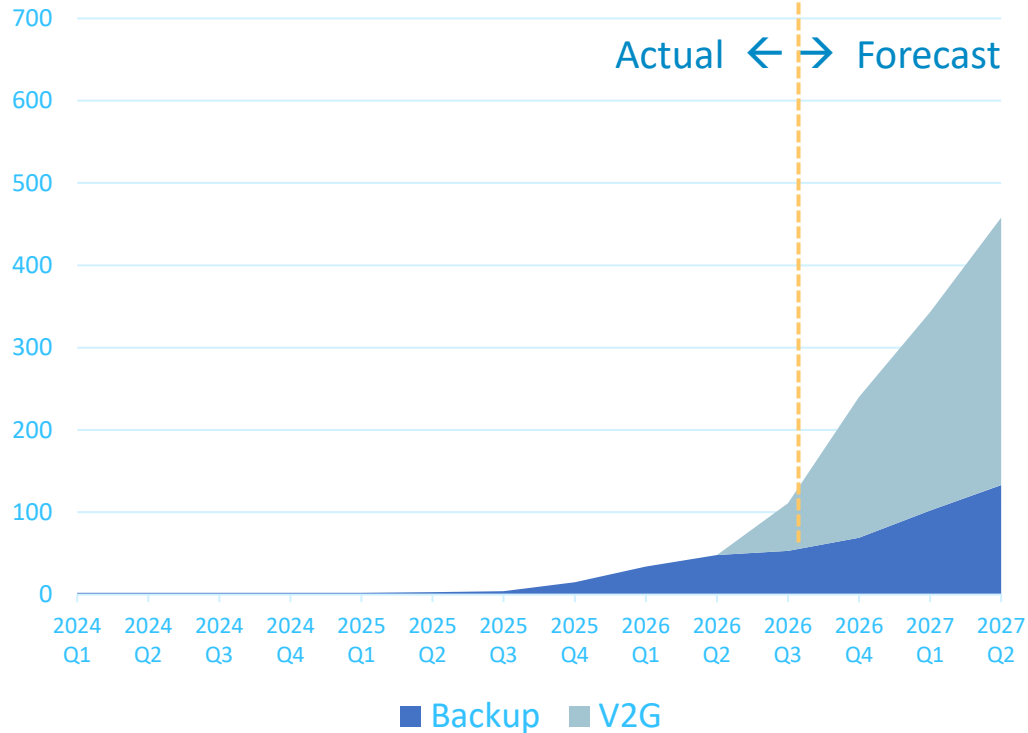
By 2030, GM expects up to 52,000 EVs in PG&E territory to help support the grid.



V2X Pilots: 2027 Extension (enrollment closes June 30, 2027)

We are continuing enrollments to mid-2027 to maximize opportunities to expand grid-tied partnerships

Cumulative Residential Enrollments



Milestones Supporting Residential and Commercial Enrollments

- Q2 2026: 2 new Residential pilot aggregators bringing Kia, Nissan, Polestar, and Volvo to expand partnerships and drive participation in V2G
- Q3 2026: 11 additional Commercial pilot chargers anticipated by Q4 2027
- Q1 and Q2 2027: Extend enrollment window to enroll Residential customers beyond V2X backup service, building on strong market growth and expand commercial pipeline runway
- Q3 2027: Close enrollments to focus on interconnection and gathering learnings

Microgrid Techno-Economic Evaluation



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Infrastructure and EVSEs – Resiliency



The IFE Program proposed a targeted resiliency solution that meets our fleets needs during emergencies, bearing in mind space constraints and affordability to meet the charging needs at each depot.

The Challenge

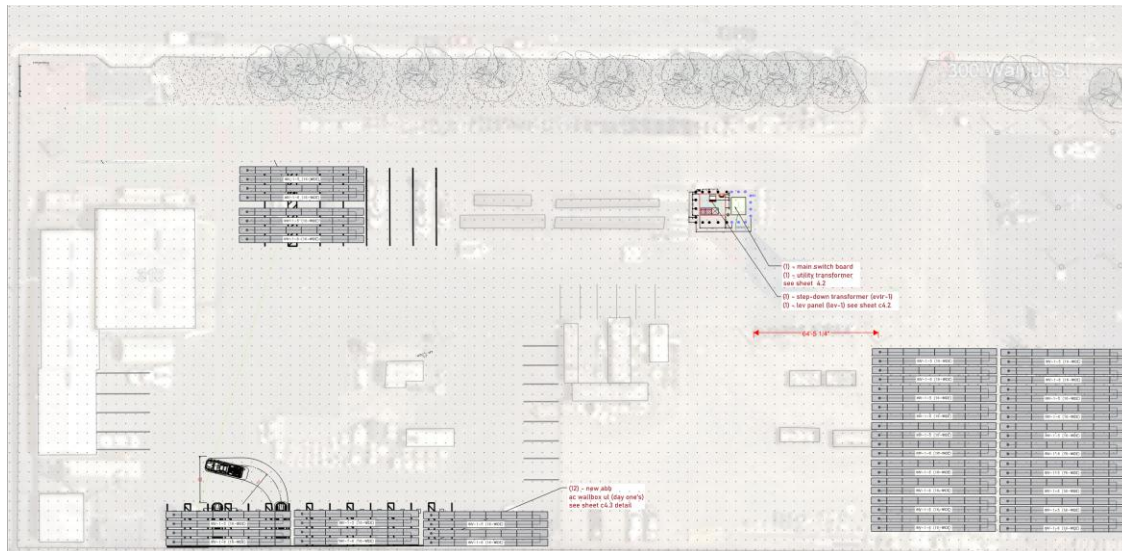
- In 2030, PG&E fleet will comprise 3300 light, medium and heavy-duty vehicles (~50%), each driving an average of 83mi/day – requiring 250MWh per night
- While we must provide resiliency for our fleet, we lack sufficient space, funds, or dwell time to accommodate 100% resiliency with permanent generation
- Current onsite fuel capabilities are roughly 10x higher and have a footprint 5x times smaller than the capacity of a gold-plated resiliency solution.
- Along with demand, charging speed is a key component of resiliency. MDHD EV require roughly 10x dwell time on the 400kW fueling island

General Resiliency Strategy

Looking at 10 years of outage data across 204 PG&E depots, we determined that:

- Our electric fleet will ride through any outage lasting under 6 hours
- This divided the depots into 3 resiliency tiers:
 - Tier 1: 0 outages over 6 hours
 - Tier 2: 1+ outages over 6 hours
 - Tier 3: 2+ outage over 16 hours
- Under emergency conditions, we provide resiliency such that we can accommodate a 50% increase in number of crews dispatched
- We developed a targeted resiliency solution, bearing in mind operational readiness, space constraints and affordability to meet the charging needs at each depot using standardized solutions based on tier assignment

Working Hypothesis: A T3 campus can accommodate 100% BE+TE, be fully resilient, and return the investment within the useful life of the assets deployed



PV



Rooftop: 33 kW Ground-Mount: 176 kW

Sized systems maximize available land area and uses approximately half of the available rooftop space.

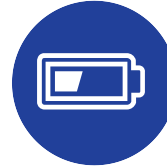
Wind



Capacity: 26 kW

Modeled characteristics are for horizontal axis turbines.

Battery



Power: 98 kW Energy: 902 kWh

The optimally sized storage system is a **9.2-hour** battery.

Air-Source Heat Pump



Size: 23 tons

ASHPs are sized for full replacement of the existing heating and cooling systems.

Cost Savings



Net Present Value: \$559,317

Initial Capital Costs after Incentives: \$666,249

Indicates savings over the **25-year** analysis period at a discount rate of **7.66%**.

Key Takeaway: It is more cost effective to fully retrofit a campus than to continue business as usual without facility electrification

	BAU	48h Resilience
Ground-Mounted PV Size (kW)	–	176
Rooftop PV Size (kW)	–	33
Wind System Size (kW)	–	26
Battery Size (kW / kWh)	– / –	98 / 902
ASHP Size (tons)	–	23
Year 1 Fixed Cost (\$)	\$13,515	\$13,515
Year 1 Energy Cost (\$)	\$48,237	\$11,467
Year 1 Demand Cost (\$)	\$56,873	\$4,573
Year 1 Export Compensation (\$)	–	\$6,917
Year 1 Utility Cost (\$)	\$118,625	\$22,638
Year 1 Utility Bill Reduction (\$)	–	–80.9%
Year 1 O&M Costs (\$)	–	\$19,100
Upfront CAPEX After Incentives(\$)	\$350,000	\$666,249
Total Lifecycle Cost (\$)	\$1,650,952	\$1,143,747
Net Present Value Savings (\$)	–	\$559,317
Annual Exported Energy(kWh)	0	99,593
Hours of resilience	0	48

- Sized systems maximize available land area and uses approximately half of the available rooftop space.
- The results shown are aggregated values for the EV and building meters; however, analysis was conducted separately for each meter due to the different tariffs.
- The **business-as-usual (BAU)** scenario assumes full fleet electrification, charging exclusively from the grid, and no changes to the existing building heating or cooling systems.
- In the **resilience** scenario, **ASHPs** are included as an upgrade option if cost-effective
- **Resilience** is defined as a **≥95%** probability of withstanding a grid outage of the specified length occurring at any hour of the year.

- **Life cycle cost (LCC)** of energy: The present value of all costs of energy at the site throughout the analysis period.

$$\text{LCC} = \text{Capital Costs} - \text{Available Incentives} + \text{O\&M Costs} + \text{Electric Grid Purchases} + \text{Fuel Purchases}$$

- **Net present value (NPV)** of the DER system: The life cycle cost savings (difference in LCC) between the business-as-usual (BAU) case and the optimized (OPT) case.

$$\text{NPV} = \text{LCC}_{\text{BAU}} - \text{LCC}_{\text{OPT}}$$

REopt identifies the **life cycle cost-optimal** DER system that achieves the site's energy goals (**cost savings, clean energy, and/or resilience**).

If NPV > 0, the project provides cost savings relative to the BAU case.

If NPV < 0, the project is more expensive than the BAU case.

- IFE Team connected with U.S. Department of Energy's Utility and Grid Operator Technical Assistance Program at the **National Laboratory of the Rockies (NREL)** to assist confirm our initial **REopt®** analysis of a fully electrified T3 campus
- NLR used the **REopt®** platform to identify the **cost-optimal mix, sizing, and economic performance of onsite energy generation, storage, and heat pumps** for Ft Bragg facility and vehicle fleet capable of withstanding outages of up to **48 hours**
- Due to outage propensity, Ft Bragg is a representative T3 campus requiring standby power. Our working hypothesis is that designing the resilience as a **microgrid** is the most cost effective and clean solution
- Results of this analysis informed our **microgrid design package (CD65%)** that we will use for permitting and potential construction.



Resiliency Strategy –The Potential Portfolio

Desktop Review and Ask: T3 Desktop study

- **Working hypothesis:** A T3 campus can accommodate 100% BE+TE, be fully resilient, and have a positive NPV
- Vetted our initial analysis with NREL
 - Designed a prototype project
 - Shared findings with CRESS and got approval to cost share the project (and the accolades)
 - Currently sourcing unique LLM and looking for construction pricing
 - In permitting with Humboldt County, R29 and R21 applications in queue

Conclusion



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