



# DART

DRONE AUTOMATION & ROBOTICS TECHNOLOGIES

&

**STARTUP**  
**MONTEREY BAY**  
**CONNECT**



2024 OUTLOOK FROM REGIONAL INDUSTRIES • TUESDAY, JANUARY 9 @6PM | ONLINE



**AG & AG-TECH**



**HEALTH**



**HOSPITALITY**



**ENERGY**



**ELECTRICAL AERIAL RIDESHARING**

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**Kevin Pease**  
Gas Engineer | GHG  
Emission Strategies  
Pacific Gas and Electric  
Co.



&



# Pacific Gas and Electric Company

Kevin Pease  
Senior Gas Engineer  
GHG Emission Strategies  
January 2024



Serving people, the planet, and California's prosperity—  
supported by strong operational performance.





# Contents

PG&E Overview

ARCHES Overview

H2 $\infty$  Overview

Calistoga Clean Substation Microgrid Pilot

Thank you



We are focused on providing safe, reliable, clean and affordable natural gas and electricity to our customers.

Service Area

**70,000**  
SQUARE MILES



Service area population

**16 million**  
CALIFORNIANS  
(That's 1 in 20 Americans!)



**25,000**

EMPLOYEES WHO  
LIVE AND WORK

in the communities we serve



MORE THAN

**715,000**

SOLAR CUSTOMERS

representing **>6,900 MW**  
of solar energy generated



NEARLY

**500,000**

ELECTRIC VEHICLES

registered in our service area







## Alliance for Renewable Clean Hydrogen Energy Systems

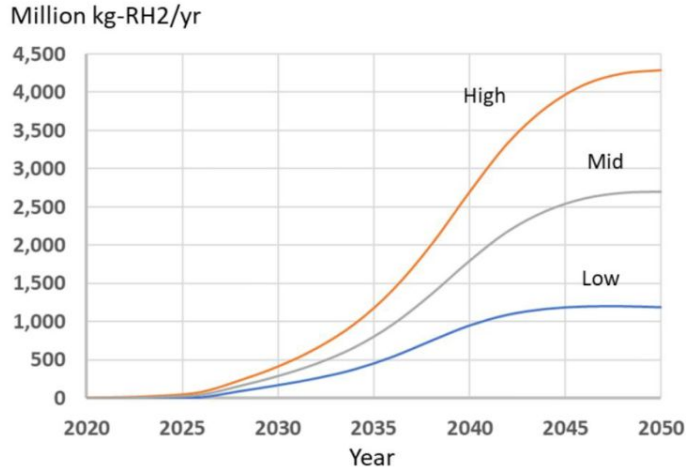
- In Negotiations with DOE for \$1.2B in federal funding for hydrogen projects
- Community Focused: 40% of benefits from projects flow to California's disadvantaged communities (Justice40 Initiative)
- Economic Driver for California
  - Set to create 200,000+ jobs in California (90,000 permanent)
  - \$2.95B per year in economic value including healthcare cost savings from reduced pollution
  - Aligned with California's 2045 carbon neutrality mandate
  - Preserving Union Jobs in Renewable Energy Economy

Join the [ARCHES Network!](#)

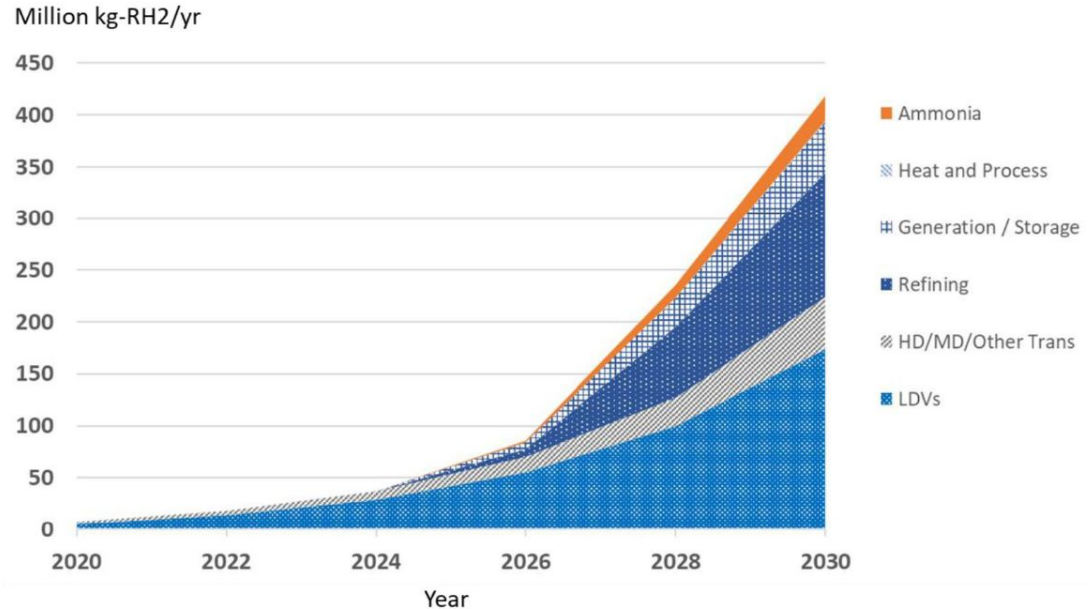


# Renewable Hydrogen Demand Scenarios

## California Renewable Hydrogen Demand Scenarios



## High-Case Renewable Hydrogen Demand Scenario Breakdown Through 2030 and 2050



Source: Roadmap for the Deployment and Buildout of Renewable Hydrogen Production Plants in California (Prepared for CEC, Prepared by UCI, June 2020)]



# Calistoga Clean Substation Microgrid Pilot



## Energy Vault/PG&E Collaboration

- 8.5 MW microgrid hybrid system for up to 48 hours
- ~2,000 electric customers in city of Calistoga
- Short duration battery system
  - grid forming
  - black start capabilities
- Long duration fuel cells
- Green liquid hydrogen storage system
- Template for renewable community-scale microgrids





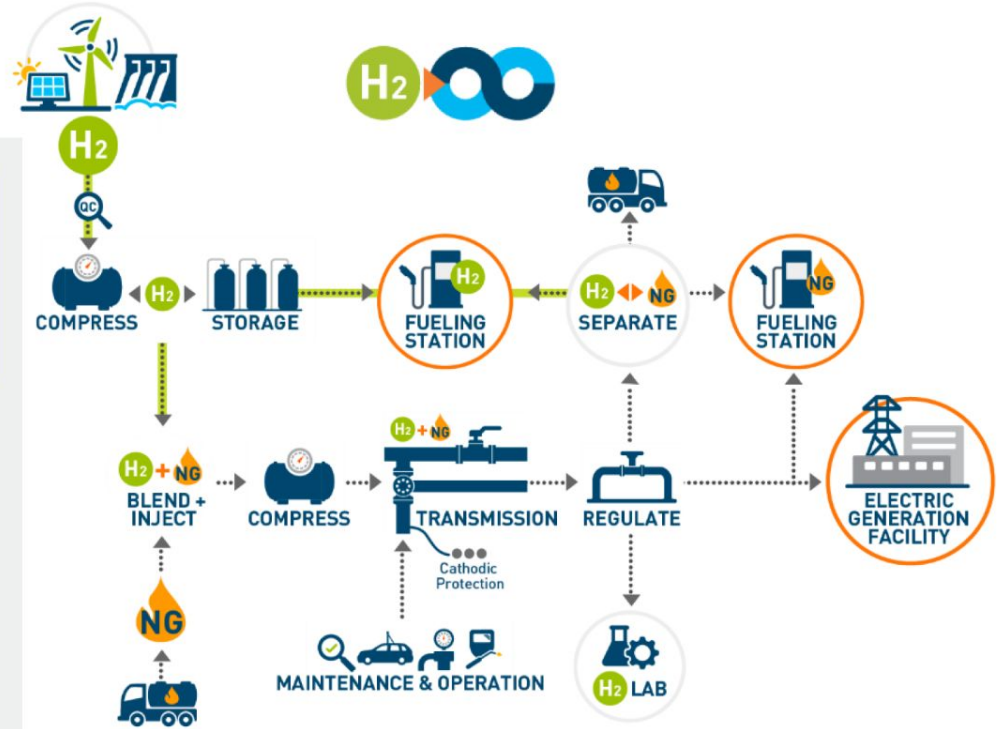
# Hydrogen to Infinity

*A large-scale research and demonstration project for hydrogen blending in new and standalone high-pressure natural gas transmission system*

- ✓ **Test & evaluate** in a safe environment
- ✓ **Develop** expertise
- ✓ **Foster** innovation
- ✓ **Reach** climate goals
- ✓ **Educate** and inform the public



2022-2027





**Thank you**

For additional information:

**PG&E Hydrogen Program**

[hydrogen@pge.com](mailto:hydrogen@pge.com)