

DOCKETED	
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Gas R&D Program Proposed FY 2024-2025 Budget Plan

CEC Staff Presentation to DACAG

January 19, 2024



Gas R&D Program Background

- \$24 million annual budget to advance gas-related technology innovation and research
- Supports state energy policy
- Benefits gas ratepayers
- Supports collaboration and co-funding opportunities





Developing Initiatives

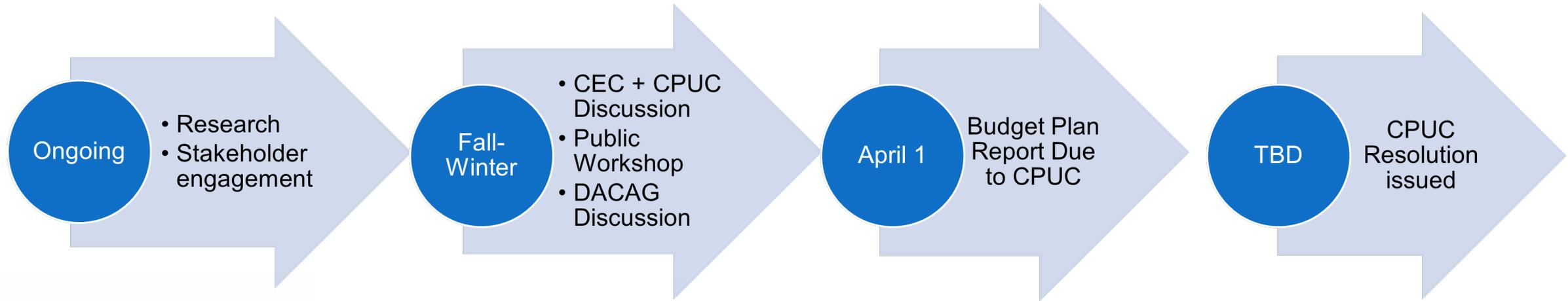
Informed by:

- Gas R&D authority
 - State policy
 - CPUC Resolutions
- Emerging research trends
 - Roadmaps and strategies
 - CPUC and CEC proceedings
 - Discussions with stakeholders
- Equity





Key Dates



FY2024-2025:

- Workshop
12/15/2023
- DACAG
1/19/2024

FY2023-2024:
Pending CPUC
Resolution



Developing Initiatives

FY2023-2024 Proposed Initiatives

1. Gas System & Safety:
 - Hydrogen Leakage Mitigation
 - *Detect and Reduce Fugitive Emissions (added based on DACAG feedback)*
2. Building Decarbonization: Indoor Air Pollutant Exposure
3. Targeted Gas System Decommissioning
4. Leveraging Cost Share Opportunities



Proposed Research: FY2024-2025

Framed around decarbonization, safety, cost reduction, and equity:



Gas Decommissioning



Gas System Safety



Renewable Generation



Clean Renewable Hydrogen Distribution



Building Decarbonization



Support Equitable, Safe, and Cost-Effective Decarbonization of California's Gas System

Purpose: Leverage existing data streams and fieldwork to understand gas end use, end users, and decarbonization pathways, including decommissioning, for diverse needs & contexts

- Analyze changing gas use patterns to inform forecasting, infrastructure planning, resilience
- Assess conversion benefits, costs, and risks distributionally, informing equity improvements
- Illuminate ways to facilitate uptake of alternatives to fossil gas end uses





Innovations for Cost-Effective Operation & Maintenance of Critical Infrastructure During the Gas Transition

Purpose: Develop non-intrusive inspection and monitoring technologies for underground gas storage and non-destructive testing methods for gas transmission pipelines

- Continuous monitoring helps with prompt intervention and proactive maintenance
- Non-intrusive technologies prevent disruptions to gas facility operations
- Reduced maintenance costs passed on as savings to gas ratepayers

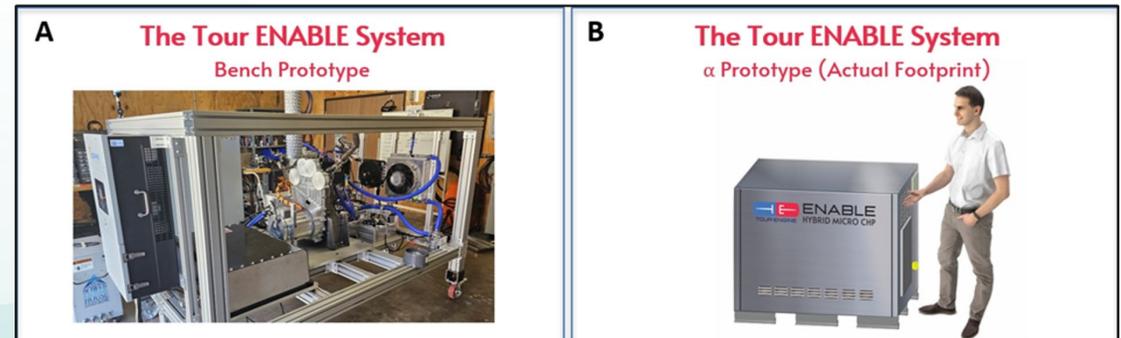
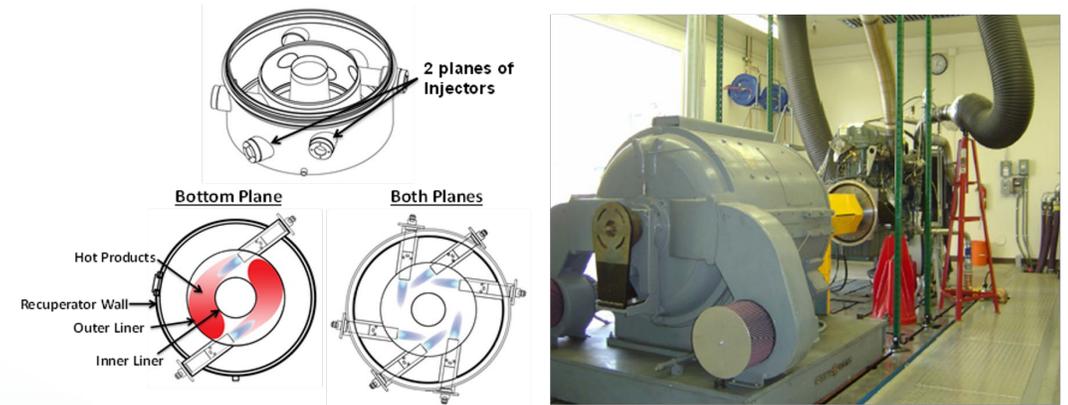




Fuel-Flexible Distributed Power Generation

Purpose: Enable prime movers to use a single or mix of renewable fuels while meeting performance, cost, and low-emission targets

- Demonstrate advanced technologies to promote decarbonization
- Develop advanced sensors and control systems to achieve ultra-low emissions
- Demonstrate safe and reliable performance

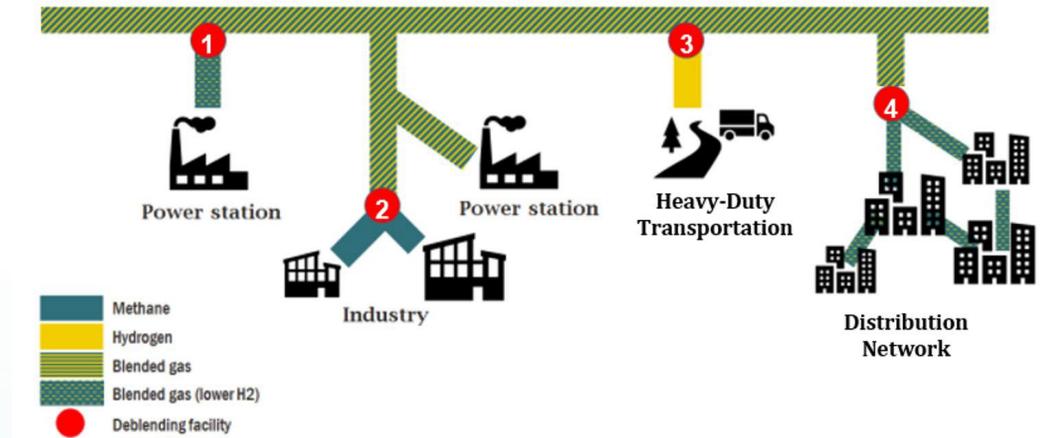




Hydrogen Separation

Purpose: Develop hydrogen separation technologies and assess their role in supporting the targeted and equitable deployment of hydrogen blending in existing gas pipeline infrastructure

- Mitigate risks of systemwide hydrogen blending by managing H₂/gas concentrations
- Enable potential use of existing gas infrastructure to decarbonize challenging sectors using H₂
- Reduce potential costs of upgrades to support systemwide blending





Networked Geothermal District Heating Study

Purpose: Analyze technological advancements and feasibility for leveraging geothermal resources for networked heating in buildings

- Explore the potential to leverage deeper geothermal resources ($\sim 1,500$ meters) for heat
- Identify opportunities for colocation of difficult-to-decarbonize building types, existing district heating systems, and resource availability
- Evaluate the risk for induced seismicity





Advancing Equity

CPUC Resolution: Coordinate with the DACAG and disadvantaged community stakeholders to administer the program equitably

- Current CEC Practices
 - Streamline grant application & administration process
 - Provide preference points to proposals that support under-resourced communities
 - Discuss Budget Plan with DACAG or DACAG members
 - Notify organizations (CEJA & APEN) regarding the Budget Plan workshop



Questions to DACAG:

- What additional or revised approaches would be effective for ensuring equitable program administration?
 - Additional report outs and discussions with DACAG?
 - Individual, targeted meetings with stakeholders?
 - Roundtable discussions with multiple stakeholders?
 - Suggested stakeholders?
- Feedback on research initiatives:
 - How to center equity considerations?
 - Suggested use cases or opportunities?
 - Are there any concerns?
 - Are there other priority areas that the Gas R&D Program should consider?



Thank you!