GRIDWORKS

Tactical Gas Decommissioning Project Overview

Introduction

This blog post documents the scope of the Northern California portion of the California Energy Commission's (CEC) Tactical Gas Decommissioning Project.[1] Future blog posts will provide progress updates for individual project tasks and summarize preliminary findings. An eventual formal report will be published to socialize the project's final results. The project team for this endeavor includes East Bay Community Energy (EBCE), Energy and Environmental Economics (E3), and Gridworks. Pacific Gas and Electric Company (PG&E) is assisting the team with technical insights into their gas and electric systems.

Problem Statement

Achieving California's climate goals requires decarbonization of all sectors of the economy. Prior research for the CEC indicates that building electrification is likely to be the lowest cost and lowest risk option for decarbonizing California's building sector. Although crucial for achieving California's climate goals, widespread building electrification will significantly challenge the funding and cost recovery mechanisms for California's gas distribution system.

As homes and buildings depart the gas system, remaining customers could face significant increases in their gas rates to pay for the largely fixed costs of maintaining the gas system. Low-income homeowners, who cannot afford electric alternatives, and renters, who cannot elect these alternatives, are particularly vulnerable to these potential rate increases. These rate increases may be further compounded by gas infrastructure spending that exceeds inflation and growing commodity costs as lower emitting fuels like renewable natural gas (RNG) and/or hydrogen are introduced. A deliberately planned transition away from the gas system, supported by multiple mitigation strategies, will be needed to reduce future gas system spending and manage gas rates for customers.

Project Overview

It is hypothesized that targeted building electrification in conjunction with gas system decommissioning could help reduce overall gas system costs. While PG&E has implemented a handful of very small gas decommissioning projects involving 1-5 customers each, targeted electrification and gas decommissioning has never been tested at a larger scale. Additionally, the regulatory framework and data necessary to evaluate the potential net cost savings that could be achieved through decommissioning of gas system assets have not been developed. Finally, the conditions necessary for community participation in, and support for, gas system decommissioning projects are not well understood. These knowledge gaps must be filled for targeted gas decommissioning to be a useful tool as gas utilities, policymakers, and regulators work to achieve a sustainable and equitable transition away from the use of the gas distribution system.

[1] A parallel research project is under way in Southern California led by the RAND Corporation in partnership with SoCalGas.

This project is divided into four primary phases, with the collective objective of answering the question: How can targeted electrification paired with tactical gas decommissioning provide net gas system savings? The four phases are as follows:

1. Develop a replicable framework to identify specific locations where targeted building electrification, combined with tactical gas decommissioning, could support gas system cost savings. Using that framework, identify 3 pilot sites within EBCE's service territory, including at least one within a disadvantaged community.
2. Engage local communities in sharing their perspectives and priorities related to targeted building electrification and tactical gas decommissioning. This will inform each pilot site's deployment plan.
3. Produce deployment plans for the recommended pilot sites, taking into account feedback received through community and stakeholder engagement.
4. Conduct education and outreach to stakeholders and policymakers within and beyond California to inform and motivate action regarding the projects' final deliverables, lessons learned, and recommendations for next steps.

In addition to completing each of these four primary objectives, this project also intends to:

- Identify new gas and electric data sources and highlight gaps in existing data;
- Ensure that community needs are highlighted throughout the process, including environmental justice and equity concerns;
- Actively work to identify barriers to targeted electrification and tactical gas decommissioning and offer recommendations on how to address those barriers; and
- Identify existing funding sources and calculate remaining funding needs for the pilot gas decommissioning and targeted electrification projects

This project stops short of funding the recommended pilots. However, the deployment plans produced in this project will be evaluated by the CEC as they consider additional phases for this work.

Project Partners

The organizations and key individuals responsible for project design, implementation, and reporting are as follows:

- E3: Amber Mahone, Ari Gold-Parker, Fangxing Liu, and Dan Aas
- EBCE: Beckie Menten
- Gridworks: Claire Halbrook and Matthew Tisdale
- PG&E: David Sawaya, Zohair Rizvi, and Rachel Kuykendall

Technical Advisory Committee (TAC) and Policy Advisory Committee (PAC)

Gridworks assembled a team of technical and policy advisors to provide input on this project. Gridworks has facilitated two TAC meetings to-date. Our TAC members represent a wide-range of stakeholders interested in tactical gas system decommissioning including, environmental NGOs, environmental justice organizations, local governments, academia, and electric home builders. You can read more about our TAC members on the Gridworks website here. We thank the TAC for their active engagement to-date.

In addition to the TAC, representatives from the CEC and California Public Utilities Commission (CPUC) have provided input on key project questions. We thank the PAC for the feedback they have provided so far.

Project Context

A key early question for the project team was: what size decommissioning pilots should be considered for this project? After consultation with the TAC, the project team has decided to situate our project between the status quo of very small projects and a future decommissioning paradigm with much larger pilots that would require significant policy changes to achieve. This project will serve as a bridge and opportunity to learn how gas decommissioning can be scaled up in the near term as we set the stage for much larger decommissioning projects that may ultimately be needed. Pursuing large, complex pilots before a policy and regulatory framework for gas decommissioning is in place and before outstanding questions are addressed would likely compromise the success of these pilots. The project team intends to select locations and develop plans for pilots that have a reasonably high likelihood of implementation.

Pilots to be explored through this project → Major regulatory changes regarding obligation to serve and electric-gas cost and incentive sharing →

	Current paradigm	Potential near-term paradigm	Potential long-term paradigm
Time to capital project	1-3 years	3-15 years	3-30 years
Gas system pressure	Mainly transmission	Mainly distribution	Distribution and some transmission
Location on system	Terminal branch	Terminal branch or small part of network	Large portion of HIS or full HIS*
Number of building owners	1-5, primarily residential	1-25	1-1000s
Funding sources	Near-term avoided costs, financing, other funds	Incentives (EE, CCA, TECH), bridge funding, customer $	Long-term gas system avoided costs, customer $
Priority criteria for site selection	Immediate gas system upgrade, few customers	Viability, long-term avoided costs, community champion	Long-term avoided costs, equity

*Hydraulically Independent System

A number of policy conversations and regulatory proceedings relevant to this project are already underway. Discussions focused on how to structure long-term gas planning and promote building electrification are already occurring at the CEC, CPUC, and CARB and preliminary programs are undergoing design and implementation. A few examples include:

- BUILD and TECH Programs (CPUC/CEC)
- The Long-term Gas Planning Proceeding and recent gas utility data requests (CPUC)
- SJVDAC Electrification Program (CPUC)
- Climate Change Scoping Plan (CARB)
- Integrated Energy Policy Report (CEC)
- Title 24 Building Codes (CEC)

At present, California lacks a clear long-term vision for the scope and scale of building electrification needed and a timeline for achieving key milestones. A similar roadmap for necessary changes to the gas system to support a low carbon future is also absent. As the state works to build these guiding documents it will be important to consider the crucial interconnection points between the two workstreams. We see this project as providing a model for how building electrification and gas system planning could be coordinated in a way that reduces overall costs for ratepayers while supporting decarbonization.

Key Next Steps

Gridworks will publish a second blog post in late Q2/early Q3 summarizing progress to-date on pilot site selection and community engagement. The project team will host a public workshop in mid- to late-Q3 to share preliminary findings. We encourage interested stakeholders to attend the workshop to ask questions and provide input to the project team.