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Mindful Decommissioning Public Workshop Toolkit

A Data-Driven Tool for Strategic and Equitable
Decommissioning of Gas Assets
for the California Energy Commission

Mindful Decommissioning

30 October 2023



UCLA

California Center for
Sustainable Communities

WHEN TRUST MATTERS

CEC Mindful Decommissioning

A Data-Driven Tool for Equitable and Strategic Decommissioning of Gas Assets for the California Energy Commission

CEC Research Funding Project

09 November 2022

Problem Statement

Decarbonization of Energy by 2045 requires strategic decommissioning of gas infrastructure

Gas transmission and distribution extends to >11M meters and 100k miles

Decommissioning must be:

- Safe
- Environmentally just
- Intentional
- Cost effective

To achieve these goals decision makers face challenges such as:

- Scope, diversity, security and processing of data
- Engaging SMEs across multiple stakeholders, communities and domains of expertise
- Lack of quantitative, analytic approach to integrate disparate knowledge pools
- Absence of summary metrics to quantify decommissioning impacts and scenarios

DNV's Proposed Solution



Engage with community stakeholders to identify key variables, data types, and provide feedback throughout the process



Quantify variables using public data sources and private sources where necessary



Create a prioritization process using geospatial metrics



Quantify uncertainties



Multi-pronged research approach

Three Decision-making Layers

- Gas assets
- Decommissioning readiness
- Community impacts / Equity

Regions and Gas Pipelines Represented



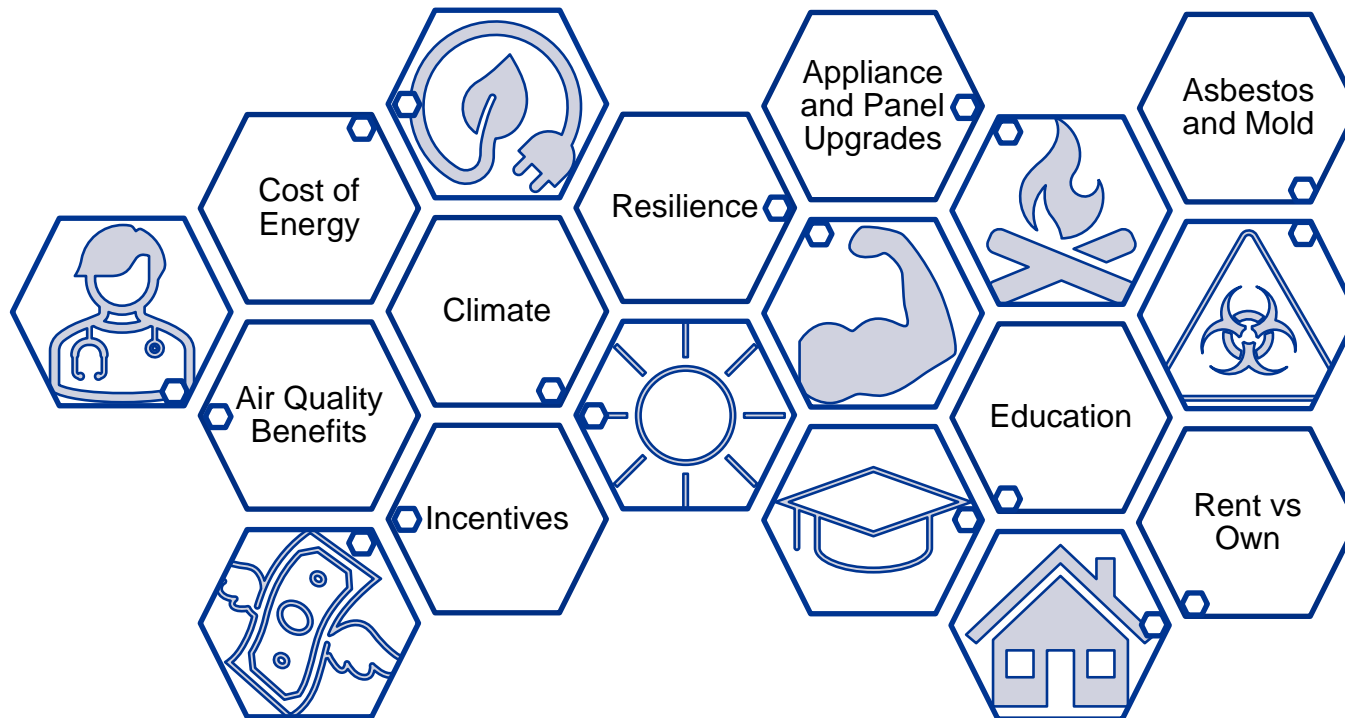
California Natural Gas Pipelines - Oil Refineries and Terminals



California Energy Commission
Systems Assessment & Facilities Siting Division
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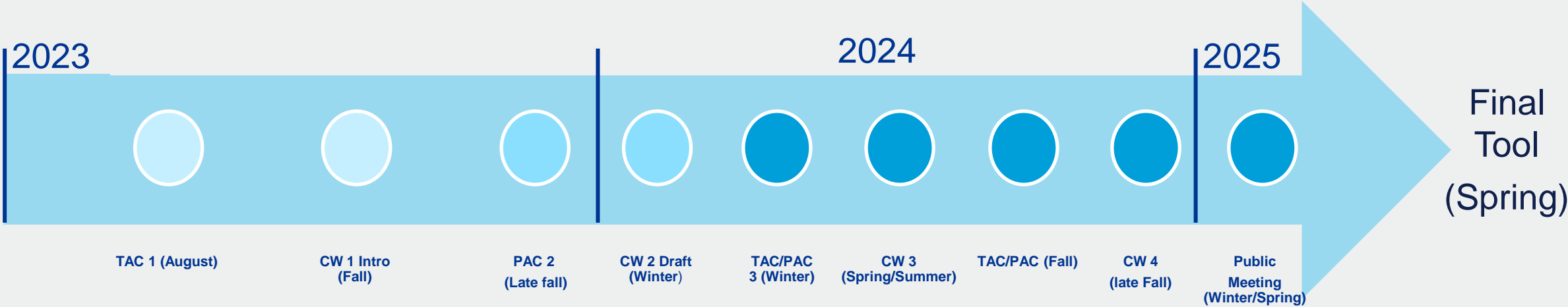
Community Engagement and Energy Equity/Justice



- DNV creating a Resource Hub for Community groups
- Workshops planned to hear community voices on impacts of decommissioning
- Engaging with cities, CCAs, IOUs, RENS*
- Understand and then quantify end-user impacts for inclusion in data-driven tool
- Identify case study locations

*Community choice aggregators, Investor-Owned Utilities, and regional energy networks

CEC Mindful Decommissioning Community + Stakeholder Engagement Schedule



Resource Hub

TAC = Technical Advisory Committee

PAC = Policy Advisory Committee

CW = Community Workshop

Partners' Support

- Provide input/data through interviews, workshops and resource portal
- Disseminate information to other stakeholders, communities and to partner organizations
- Encourage stakeholder and community participation and input
- Participate in shared resource hub that will include deliverables, feedback forms, surveys, accommodations and data request forms
- Compensation to CBOs for hosting satellite participation.



Thank you

Contact us with any questions.

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CALIFORNIA ENERGY COMMISSION (CEC) DECOMMISSIONING CALIFORNIA'S GAS PIPELINES

To most accurately represent the scope of this project and concepts related to a data-driven tool development for prioritizing gas pipeline decommissioning, this factsheet contains technical language that best characterizes the relevant scope and concepts. The project team members will make ourselves available to provide any clarification on information in this factsheet.

FACTSHEET

To help meet its clean energy goals, California is considering selective decommissioning of gas pipelines, prioritizing equity and community interests and needs.

A significant step towards realizing the State of California's goal of decarbonization of energy by 2045 is to strategically decommission natural gas infrastructure. Many cities in California have already adopted building codes that limit the utilization of natural gas in new developments.

However, natural gas transmission and distribution lines presently provide service to more than 11 million meters and span more than 100,000 miles. The process of decommissioning must be safe, intentional, environmentally just, and cost-effective. At present there is no integrated decision-making tool that balances the concerns of the state's IOUs, cities and municipalities, community stakeholder groups, developers, regulators, and technology vendors.

Tools need to be developed for collecting, analyzing, and integrating data required by decision-makers to bring about this energy transition efficiently, effectively, and equitably. This tool will need to be inherently interdisciplinary and have the ability to combine diverse data types and sources including technological, engineering, financial and social.



Challenges facing decision makers include:

- Scope, diversity, security and processing of data
- Engaging subject matter experts from natural gas, grid services, and communities
- A lack of metrics that descriptively and evocatively capture total risks
- Methods to estimate the benefits related to economics, environment, health, safety and equity

Key priorities for the decommissioning process.



Safety



Strategic



Environmentally just and equitable



Cost-effective

The CEC has funded DNV and the UCLA's Center for Sustainable Communities to conduct a research project (Mindful Decommissioning Project) and create a data-driven tool that can be used to screen for promising candidate decommissioning sites.

The DNV-UCLA team will conduct this research to collect and present critical information, focused on three decision-making areas to meet the key priorities of decommissioning: (a) assessment of gas assets (e.g., physical condition, age), (b) assessment of decommissioning readiness (e.g., how ready is the state's infrastructure for alternatives to gas such as clean energy, heat pumps), and (c) assessment of community impacts. Engagement with state agencies, IOUs, municipalities, and community stakeholders will ensure that costs and benefits are understood from these diverse points of view and the most critical elements prioritized. The tool will include the relevant data collected as layers on a map to show a comprehensive picture for the state to prioritize when, where and how to decommission gas pipeline segments.

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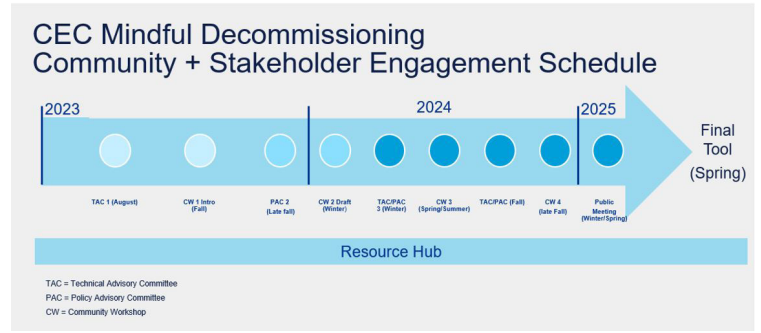


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To form an understanding of communities needs and interests beyond the statistical data and ensure that they have a meaningful voice in the gas decommissioning decision-making process, the DNV-UCLA team is conducting community and stakeholder engagement process to include as much representation of California communities as feasible. To meet the challenge of reaching California communities and stakeholders, and recognizing how overstretched community serving organizations currently are, we are planning a multi-layered outreach and engagement process that tailors to busy schedules, lack of resourcing and accessibility needs. Since October 2022, we have been having one-on-one informational conversations and briefings with community-based organizations, faith-based organizations, school districts, local governments, and other groups representing community interests. We have also formed technical and policy advisory groups to discuss gas decommissioning in those respective contexts.



We are conducting a series of community workshops over the next two years focused on hearing and including community concerns, the energy and financial resources available in communities, and how to accurately measure energy security and burdens. The information gathered in these workshops will help put the technical, socioeconomic and non-energy (e.g., housing, health, jobs) metrics into a real-life context and identify which metrics are more or less relevant to a particular area. We plan to demonstrate several versions of the tool to confirm with communities that we heard and incorporated your feedback accurately.

CEC Mindful Decommissioning Resource Hub and Accommodations. The DNV-UCLA team is also setting up an [online resource hub](#) to provide a central place where all project information can be found and where communities can access a team member for questions and to hear feedback, for the duration of this project (expected until mid-2025). We strive to make this hub useful and accessible, considering language, disability, technology and other needs.



We need your partnership and support to ensure equitable participation and feedback. A small budget (commensurate with the research funding) is set aside to compensate community-based organizations that partner with us to support and deepen our outreach and engagement efforts. To ensure meaningful participation at the community workshops and engagement broadly, we are hoping organizations can spare a few hours to host satellite gatherings, get the word out and conduct grassroots community outreach for each round of workshops and at other project milestones. We can in turn facilitate community participation by accommodating basic accessibility needs, and any unique needs upon request.

Some key benefits and risks of gas pipeline decommissioning are listed below. Learn more as you participate in the process.

Benefits	Concerns
Decrease greenhouse gas pollution that is contributing to poor air quality and climate change	Requires replacement of gas appliances (e.g., stoves, ovens, furnaces, fireplaces, water heaters, laundry machines) and possible electrical panel upgrades
Improved indoor air quality with replacement of gas appliances	Could increase energy costs and impact energy resilience
Less risk of pipeline ruptures due to earthquakes and leaks due to pipeline ageing or third party damage (e.g. construction works)	Households that cannot afford to replace gas-using appliances could face higher and higher gas utility bills
Cost savings to gas users as the net size of the pipeline network will adapt to only the sections of pipe still being used	

You can learn more about the gas decommissioning effort in California through a short list of references below.

- [The CEC's Gas R&D Program invests in technologies and solutions that help the gas sector support California's energy and environmental goals](#)
- [Strategic Pathways and Analytics for Tactical Decommissioning of Portions of Natural Gas Infrastructure](#)
- [Strategic Pathways and Analytics for Tactical Decommissioning of Portions of Gas Infrastructure in Northern California](#)
- [Mindful Decommissioning: A Data-Driven Tool for Prioritizing Strategic Gas Asset Decommissioning | CEC \(energizeinnovation.fund\)](#)
- [Staff Proposal on Gas Distribution Infrastructure Decommissioning Framework in Support of Climate Goals](#)
- [California Natural Gas Pipelines \(Detailed\) Map](#)
- [CPUC Gas Infrastructure Equity Workshop](#)
- [CPUC Webinar on Natural Gas 101 and Policies for a Just Transition](#)

Mindful Decommissioning Community Resource Hub
www.mindfuldecommissioning.dnv.com

**This Resource is here for you to access throughout the project. You can review information on the Project, including updates, workshop presentations, notes and recordings, links to related efforts in California. You can also provide feedback and request accommodations for any needs, such as language translation, technology, accessibility etc. If you require translation of any resource provided, please complete an Accommodations Request.

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FREQUENTLY ASKED QUESTIONS

1. What is the CEC Mindful Decommissioning project?

The California Energy Commission (CEC) has funded the DNV and UCLA teams to conduct this research project to collect and visualize data that can help to develop a scalable, systematic approach to screen for promising candidate decommissioning sites within the state's distribution gas pipelines. (The scope of this project does not include gas transmission pipelines nor production facilities or sites.)

2. What kind of data is being collected?

The Mindful Decommissioning team is collecting data based on factors such as physical condition of pipelines, gas network characteristics, energy resilience, costs of decommissioning to customers, how energy, health and economically burdened communities will be affected, and how to decommission safely and equitably, among many others.

3. How will the data be used?

The team will use the research data to build a mapping tool that can geospatially (visually) rank the pros and cons of gas decommissioning across different geographical regions of the state.

4. Why include communities in this effort?

Engaging our communities and stakeholders to increase understanding of impacts and benefits of decommissioning on environmental justice and energy equity is a priority for this project. It is also very important to gain community and stakeholder feedback to validate the relevant data. The project is currently in progress and is set to end in 2025, at which time the goal is to deliver a final version of the tool to the state.

5. Why are we talking about strategic decommissioning of gas pipelines?

The role of natural gas in California's energy system is changing as the state strives toward a clean energy future. Over the next 25 years, state and municipal laws concerning greenhouse gas emission reductions will result in the replacement of gas-fueled technologies and will reduce the demand for fossil natural gas (CPUC, 2020). Without proper management, these transitions will impose challenges not only to customer affordability, but also to gas system planning, operations and maintenance, and safety.

6. What are the major concerns that are taken into consideration with gas line decommissioning?

"The prospect of significant reductions in retail customer demand for natural gas creates a planning imperative. With fewer customers and less natural gas demand, the cost of natural gas for remaining retail customers is expected to rise and could become unsustainable, particularly for low-income customers, unless system costs that are recovered through rates can also be reduced over time (Gridworks, 2019; Aas, et al. 2020)".

There are two critical concerns that disadvantaged communities may face as a consequence of decommissioning. First, gas appliances such as furnaces and stoves will in many cases have to be replaced with appliances that run on electricity if those customers choose to decommission. In some cases, older homes may also need upgrades to their electrical service to accommodate the increased load. Disadvantaged and lower-income households are typically less able to afford these replacements than higher-income households. Second, as the number of gas customers decreases, there will be fewer people paying to maintain the gas system. This could lead to increasing gas utility bills for customers who continue to use gas. These two risks combine to put disadvantaged and lower-income households at risk for

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increasing gas utility bills because they may not be able to afford to replace their old gas appliances with electric appliances. These risks may be somewhat offset by home energy efficiency incentives and/or rebates. Other risks of decommissioning that will need to be managed during the transition include the impact of decommissioning lines on the gas network properties (how well the gas can flow through the pipeline to meet customer needs), and the impact on energy resilience (having access to energy in multiple forms).

7. How is the research team engaging communities about this project?

DNV will lead a Community Engagement and Energy Equity process that includes:

- Providing an online [Community Resource Hub](#) – the Hub will be designed as a two-way communication tool between the DNV-UCLA team and community groups for purposes of this project. We are designing it to have: a resource library, a frequently asked questions (FAQ) section, a survey and response section, meeting and informational videos and notes, contact information and a help section. The site will have search and filter capabilities and a secure format to allow community groups to link to it on their own pages.
- Leading four community workshops to exchange ideas and develop a common understanding of impacts of decommissioning. Community engagement is critical to ensure that the tool being developed, and the resulting prioritization considers the factors most important to communities and captures all aspects of equity.
- Obtaining input from other stakeholders such as cities, Community Choice Aggregators (CCAs), Regional Energy Networks (RENs), Investor-Owned Utilities (IOUs) and others who may represent community interests.

8. How will decommissioning gas lines affect my household/business?

If your home or business currently relies on gas for heating, cooking, water heating, laundry, or other purposes, gas decommissioning would mean transitioning to alternative energy sources. This could involve converting your appliances to electric or switching to other delivered fuel sources. Some appliances may be adapted to work with alternative energy sources, while others may require full replacement. Fuels such as renewable natural gas or hydrogen may replace natural gas in difficult-to-decarbonize sectors, including some industries.

9. How will decommissioning gas pipelines impact energy prices in the area and my utility bill?

The decommissioning of gas lines in California could potentially have an impact on energy prices in the state, but the extent of this impact would depend on various factors and the broader energy landscape. These factors include supply and demand, negotiations between the utilities and regulatory agencies about what rates they can charge, and state and federal policy decisions that can make financial aid available for households and business to convert from gas-using to electricity-using appliances. Analysis of energy price impacts due to decommissioning is being considered as part of the DNV/UCLA Mindful Decommissioning study.

10. What is “obligation to serve”?

Utility services such as gas and electric are considered a vital public need, and therefore utilities are obligated to provide service to any member of the community who requests it, without discrimination. For this reason, decommissioning is being considered within the context of communities seeking to accelerate their transition to clean energy. For as long as customers on the network are choosing to use gas, and the pipelines are still serving gas, there is, at the moment, an obligation for the utilities to provide that gas to the customer.

You can learn more about the gas decommissioning effort in California through a short list of references below.

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California Natural Gas Pipelines - Oil Refineries and Terminals

Legend

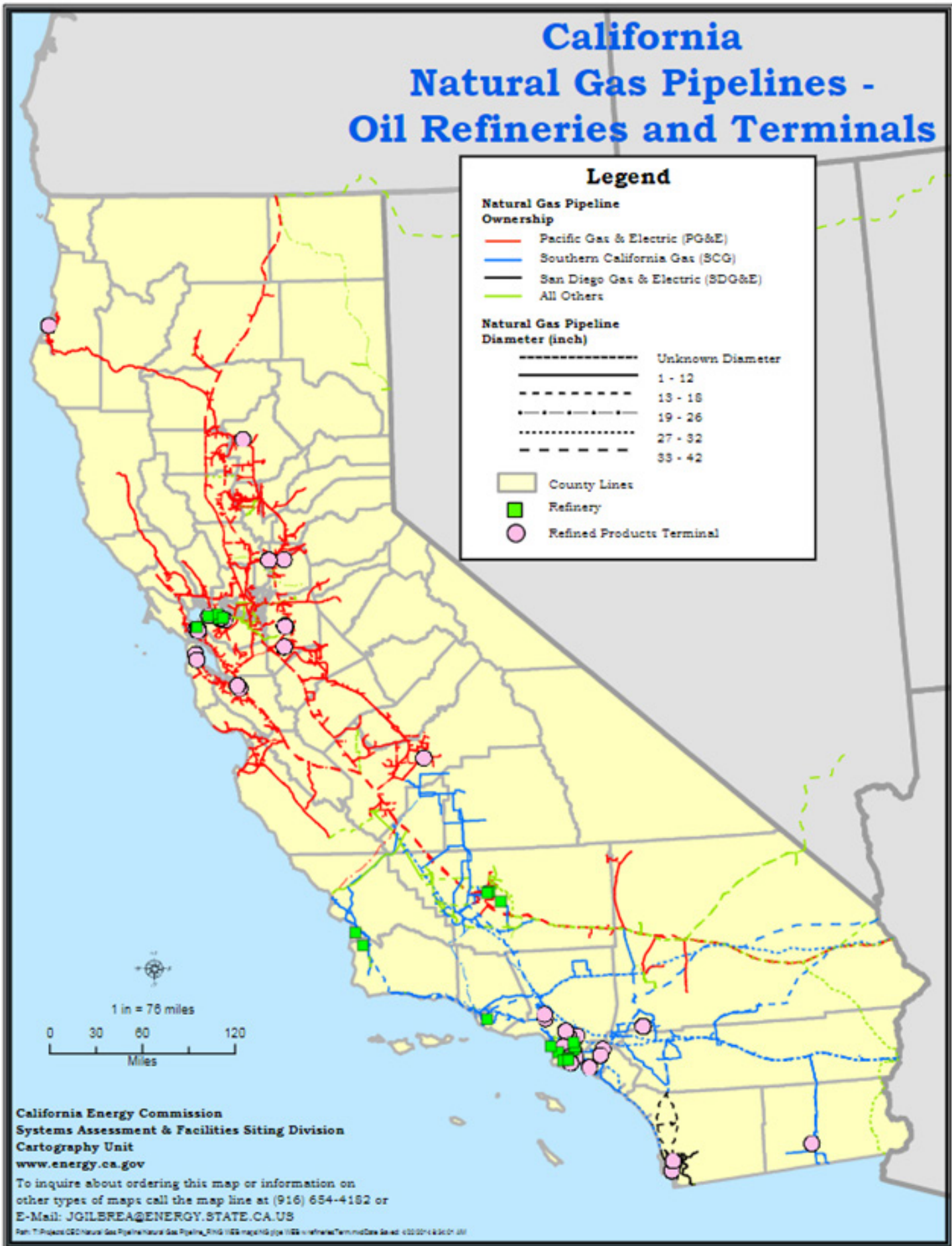
Natural Gas Pipeline Ownership

- Pacific Gas & Electric (PG&E)
- Southern California Gas (SCG)
- San Diego Gas & Electric (SDG&E)
- All Others

Natural Gas Pipeline Diameter (inch)

- Unknown Diameter
- 1 - 12
- 13 - 18
- 19 - 26
- 27 - 32
- 33 - 42

- County Lines
- Refinery
- Refined Products Terminal



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Agenda

Mindful Decommissioning Statewide Community Workshop 1

Monday, October 30, 2023

5:30 – 7:30 pm

[Register Here](#)

Zoom Meeting ID: 875 3398 8092

Meeting Objectives:

- Hear introduction to project scope, objectives, and expected outcomes.
- Learn about gas decommissioning and potential impacts on local communities.
- Engage with community-based organizations and other stakeholders to understand the impacts of decommissioning on environmental justice and energy equity to inform metrics being considered for identifying priority locations for equitable, safe, intentional and cost-effective gas decommissioning.
- Discuss gas decommissioning in different contexts and provide feedback.

#	Time	Topic	Presenter/Speaker
1	5:30 pm	Welcome, Introductions Community Agreements Agenda Review	<ul style="list-style-type: none"> • DNV • Kearns & West • OnPoint Solutions
2	5:45 pm	Opening Remarks	<ul style="list-style-type: none"> • Dr. Martine Schmidt-Poolman, CEC
3	5:55 pm	Gas Decommissioning: What Could It Mean to Communities? <ul style="list-style-type: none"> • What could happen to the gas infrastructure? • Potential implications for customer/communities. 	<ul style="list-style-type: none"> • Dr. Christopher Taylor, DNV • Dr. Eric Fournier, UCLA • Cici Vu, DNV

#	Time	Topic	Presenter/Speaker
4	6:10 pm	Overview of the CEC-funded Mindful Decommissioning Project and Q&A	<ul style="list-style-type: none"> • Dr. Christopher Taylor, DNV
5	6:25 pm	Interactive Group Discussions <ul style="list-style-type: none"> • Group 1: Informational Session on Gas Decommissioning • Group 2: Community Impacts and Equity Metrics • Group 3: Developing a Data-Driven Tool 	<ul style="list-style-type: none"> • Dr. Christopher Taylor, DNV • Dr. Eric Fournier, UCLA • Cici Vu, DNV • Stephanie Pincetl, UCLA • Samantha Smithies, UCLA • Maya Ofek, UCLA • Christian Mendez, KW
6	7:20 pm	Recap of Meeting and Next Steps Closing Remarks	<ul style="list-style-type: none"> • Kearns & West • Cici Vu, DNV • Dr. Martine Schmidt-Poolman, CEC
7	7:30 pm	Adjourn	<ul style="list-style-type: none"> • Kearns & West



Mindful Decommissioning:

A Data-Driven and Mapping Tool for Equitable Prioritization of Decommissioning of CA's Gas Distribution System



The state of California is committed to achieving a decarbonized energy system by 2045 through the decommissioning of natural gas infrastructure and limiting its use in new developments. Several cities have already taken steps to limit their natural gas use and you can, too.

With over 100,000 miles of gas lines and 11 million gas meters being served across the State, it's essential to prioritize a safe, intentional, environmentally just, and cost-effective process when it comes to decommissioning. To achieve this, a reliable decision-making tool is required to consider the concerns of communities, cities, regulators, developers, IOUs, and technology vendors. By taking these important factors into account, we can ensure that we make the most informed and responsible decisions possible.

Community members, leaders, and energy experts from across the state will come together to learn:

- What does "gas decommissioning" mean for communities?
- What community impacts (energy equity metrics) are being considered?
- How is the data-driven tool being developed?
- What input is needed from communities and how is the input going to be integrated into the tool?



We're still going out into communities! We have been traveling to events around the State virtually to engage with communities on the benefits and challenges of mindful gas decommissioning. If you would like us to attend a local meeting or event and provide an overview of this very important project, please contact us at cpaskin@kearnswest.com.

We look forward to engaging with you at our first public workshop!