Gas Infrastructure Workshop 1

R.20-01-007: Long Term Gas Planning Rulemaking, Track 2

Staff Workshop

January 10, 2022

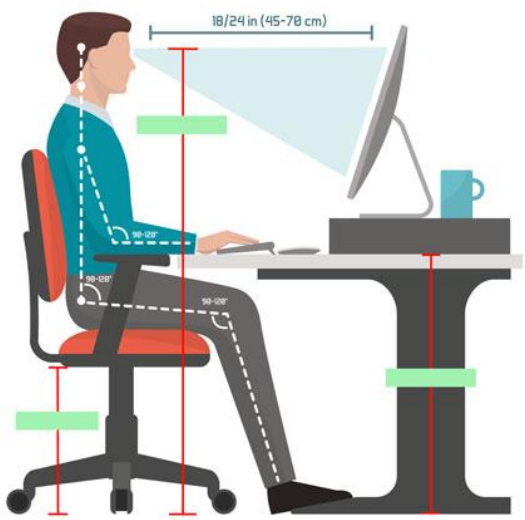
California Public
Utilities Commission

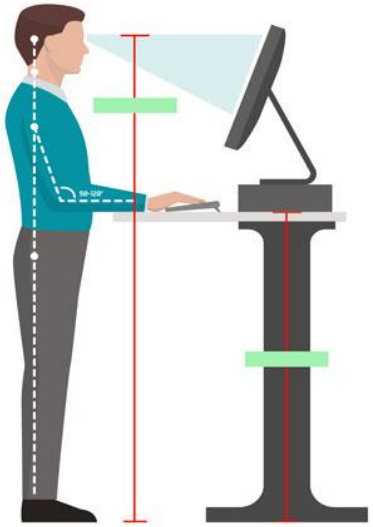
Commissioner Remarks

Workshop Logistics

- Online only
  - Audio through computer or phone
  - Toll-call-in: 1-415-655-0002
  - Access code: 2480 535 4677
  - ***This workshop is being recorded***
- Hosts:
  - Energy Division Staff:
    - Jean Spencer
    - Kristina Abadjian
    - Karin Sung
    - Renee Guild

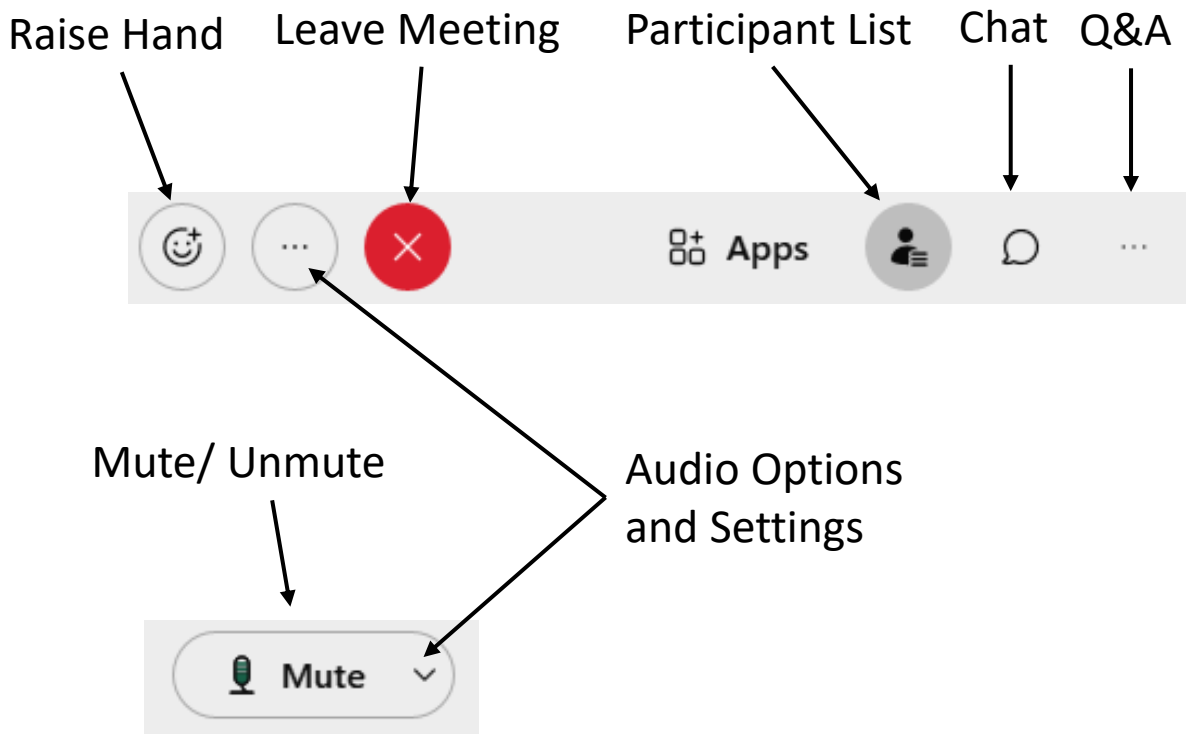
- Safety
  - Note surroundings and emergency exits
  - Ergonomic Check





Workshop Logistics

- Today's presentations (.pdf) and agenda are available on the CPUC's long-term gas planning OIR website.
- Please submit questions for panelists in the chat box or use the "raise hand" feature to verbally ask a question.



Ground Rules

- Workshop is structured to stimulate an honest dialogue and engage different perspectives.
- Keep comments friendly and respectful.
- Chat feature is only for Q&A or technical issues. Please do not start or respond to sidebar conversations.

CPUC's General Order 131 D

Presenters:

Mary Jo Borak, Energy Division

Jack Mulligan, Legal Division

California Public
Utilities Commission

From the Rulemaking Scoping Memo:

- **Scoping Memo Question 2a:**

- **Question a: Should the Commission consider adopting a General Order (GO) analogous to GO 131-D for electric infrastructure projects, that would require site-specific approvals for gas infrastructure projects that exceed a certain size or cost?**

- Background and Reference: California Public Utilities Code Section 1001 addresses CPUC regulatory authority over gas corporations and Certificates of Public Convenience and Necessity. (See next slide)

CA Public Utility Code Section 1001

- CA Pub Util Code § 1001 (2017)
- No railroad corporation whose railroad is operated primarily by electric energy, street railroad corporation, gas corporation, electrical corporation, telegraph corporation, telephone corporation, water corporation, or sewer system corporation shall begin the construction of a street railroad, or of a line, plant, or system, or of any extension thereof, without having first obtained from the commission a certificate that the present or future public convenience and necessity require or will require such construction.
- This article shall not be construed to require any such corporation to secure such certificate for an extension within any city or city and county within which it has theretofore lawfully commenced operations, or for an extension into territory either within or without a city or city and county contiguous to its street railroad, or line, plant, or system, and not theretofore served by a public utility of like character, or for an extension within or to territory already served by it, necessary in the ordinary course of its business. If any public utility, in constructing or extending its line, plant, or system, interferes or is about to interfere with the operation of the line, plant, or system of any other public utility or of the water system of a public agency, already constructed, the commission, on complaint of the public utility or public agency claiming to be injuriously affected, may, after hearing, make such order and prescribe such terms and conditions for the location of the lines, plants, or systems affected as to it may seem just and reasonable.
- *(Amended by Stats. 1981, Ch. 573, Sec. 2.*

CPUC General Order 131 D

(last modified in 1995)

- Rules relating to the planning and construction of electric generation, transmission/power/distribution line facilities and substations located in California.
- Purpose of the General Order:
  - To be responsive to the California Environmental Quality Act (CEQA) Public Resources Code Section 21000 et seq.
  - The need for public notice and the opportunity for affected parties to be heard by the Commission
  - The obligations of the utilities to serve their customers in a timely and efficient manner, and
  - The need to replace the present complaint treatment of under 200 kV projects with a streamlined new mechanism

Need for Commission Authorization

- **Certificate of Public Convenience and Necessity (CPCN)**
- No electric utility shall begin construction of electric transmission lines above 200 kV without the Commission first finding they are necessary to promote the safety, health, comfort, and convenience of the public.

- **Permit to Construct (PTC)**
- No electric utility shall begin construction of electric transmission lines between 50 kV and 200 kV and electric substations with a high side above 50 kV without first being granted a PTC.

Exemptions to General Order 131 D

- Power facilities with an in-service date before January 1, 1996.
- Replacement of existing power line facilities with equivalent facilities.
- Minor relocation of power lines up to 2000 feet in length.
- Conversion of power lines from overhead to underground.
- Facilities that have undergone environmental review by another agency.
- Power line facilities located in existing franchise or other designated corridor.
- Construction of projects that are statutorily exempt pursuant to Section 15200 et seq. of the CEQA Guidelines.

Exceptions to Exemptions in G O 131 D

- There is a reasonable possibility the activity could impact an environmental resource of hazardous or critical concern where officially designated by law by federal, state, or local agencies.

- The cumulative impact of successive project of the same type in the same place over time is significant.

- There is a reasonable possibility the activity will have a significant effect on the environment due to unusual circumstances.

PG&E
GO 131-D Experience

1/10/2022

Jenny Everett- Principal Land Planner





Together, Building
a Better California

Objectives and History of GO 131-D

- Ensure that major projects with significant environmental impacts are reviewed by the Commission
- Created a tiered permitting process
  - Notice and exemption system that provides system planners with certainty that most projects can be developed quickly with little risk of regulatory delay
- Provides clarity that local discretionary review of utility projects is preempted

Project Approvals

- CAISO reviews the grid to identify system upgrades that are needed through the Transmission Planning Process
- The Utility begins reviewing the Project
  - Prepares design and reviews the permitting requirements for the project (not limited to CPUC)
- If permits are triggered the Utility fills an application with the agencies with a discretionary action

What GO 131-D does

- Establishes when major electric transmission line and substation projects require CPUC permits, NOC/AL filings, or neither, based on the likelihood that the particular type of project will have significant environmental effects
- Exempt projects generally involve work on existing facilities, projects located in existing franchise/easements, or work already reviewed under CEQA by other agencies given their low level of environmental impact
- Where permits are required, provides process for environmental review when warranted under CEQA
- Demonstrates to local government that the CPUC, not local agencies, has discretionary authority over all utility electric projects (regardless of whether GO 131-D requires a Commission permit)

What GO 131-D does not do

- GO 131-D is not a system planning process
  - "purpose and need" is beyond the scope of PTC proceedings and is not a valid ground for protests of NOCs
  - While CPCN proceedings include a review of "public convenience and necessity," that review generally consists of validating the conclusions of prior system planning decisions to verify the proposed construction project is still needed
- GO 131-D is not a ratemaking process
  - Project cost is beyond the scope of PTC proceedings and is not a valid ground for protests of NOCs
  - While CPCN proceedings for projects costing over $50 million identify the "maximum reasonable and prudent cost" of the project, those findings are not binding in future ratemaking proceedings

PG&E'S Experience with GO 131-D

- PG&E has extensive experience under each tier of GO 131-D's permitting and notice/ exemption system
  - PG&E has applied for multiple Certificates of Public Convenience and Necessity (CPCN) and Permits to Construct (PTC) for:
    - major transmission line projects of 500 or 230 kV (CPCN)
    - thermal generation plants over 50 MW (CPCN)
    - transmission line projects of 115 or 60 kV (PTC)
    - new or upgraded substations over 50 kV (PTC)
  - Hundreds of NOC/AL filings for projects exempt from CPUC permit requirements
  - Countless informal consultations on land use matters with local government

Permits outside of GO 131-D

- PG&E is required to obtain and comply with all required federal and state permits
  - California Department of Fish and Wildlife – Streambed Alteration Agreements, Incidental Take Permits for state-listed species
  - U.S. Fish and Wildlife Service -- Incidental Take Permit (BO or HCP) for federally-listed species
  - US Army Corps of Engineers -- Clean Water Act 404, Rivers and Harbors Act Section 10
  - Regional Water Quality Control Boards -- Clean Water Act 401
  - State Water Resources Control Board
  - Coastal Commission, California Reclamation Board, BCDC
  - Federal and State Land Management Agencies -- BOR, USFS, BLM, State and National Parks, California State Lands Commission, Caltrans
  - State Historic Preservation, Tribal Coordination
  - Federal Energy Regulatory Commission

GO 131-D: Successes

- Provides a forum for resolving multi-stakeholder disputes related to aesthetics, EMF, and other local land use concerns – particularly on large projects passing through multiple jurisdictions where various competing interests must be weighed
- For the most part, provides system planners with certainty through expedited approval or exemptions where appropriate based on environmental impacts
- Largely put to rest local government claims of discretionary authority over utility electric projects

GO 131-D: Challenges

- Where permits are required, the process can be costly and time-consuming
  - PEA Guidelines requirements have increased and now require surveys for all alternatives including rebuild projects of existing facilities
- For some applications there is often a duplication of prior planning processes
- While the CPUC does a good job of mitigating significant environmental impacts where possible, mitigation costs have crept steadily upward and represent a significant percentage of the overall cost of projects that require CPUC permits

Sample Time to approval: CPCNs & PTCs

Project	CPCN / PTC	Application Date	Approval Date	Timeline for CPUC approval
Windsor Substation	PTC	April 2010	April 2014	4 years
Embarcadero- Potrero	CPCN	December 2012	January 2014	1 year & 1 month
Cressy-Gallo 115 kV Power Line	PTC	November 2011	January 2014	2 years & 3 months
Missouri Flat-Gold Hill 115 kV	PTC	August 2013	October 2015	2 years & 2 months
Sanger Substation	PTC	May 2015	July 2017	2 year & 2 months
South of Palermo 115kV	PTC	April 2016	June 2018	2 years & 2 months
Fulton-Fitch Mountain 60 kV	PTC	December 2015	December 2017	2 years
Estrella	PTC	January 2017	On going	Still in Progress, + 5 years
Ravenswood- Cooley Landing	PTC	December 2017	March 2019	1 year & 3 months
Martin Bus	CPCN	December 2017	June 2020	2 Years & 6 months
Vierra 115kV	PTC	June 2018	June 2021	3 years
Humboldt Bay- Humboldt #1 60kV	PTC	February 2019	November 2020	1 Year & 9 months

- PG&E typically spends over a year preparing the Proponents Environmental Assessment (PEA) which includes surveys and environmental analysis prior to the Permit's Application date

Current Projects- Estrella

- CAISO approved the development of a new 230/70kV Estrella Substation and a new 70kV power line to interconnect the substation to improve reliability in San Luis Obispo
- The Proponent's Environmental Assessment was submitted in January 2017. The project has received multiple request for additional information which are available on the CPUC's website
  - The costs to respond is currently at approximately $4.7 M
- Final EIR is expected in Spring of 2022

Time to approval: NOCs

- NOC process timeline is streamlined has more predictability

Year	Number of NOC Filings per year	Average time from Filing to Approval
2021	22	41 Days
2020	18	44 days
2019	19	103 days
2018	29	50 days

Takeaways

- GO 131-D can create unnecessary delays and cost for a project
- GO 131-D can help with siting and routing of new facilities when passing through multiple jurisdictions
- GO 131-D approves construction and environmental review of individual electric projects; it is not a system planning process like the CAISO Transmission Planning Process
- Utilities are required to obtain and comply with applicable federal and state permits even when a permit is not required under GO 131-D, and the agencies issuing those permits must comply with NEPA and CEQA environmental review requirements - Examples: Endangered Species Act, 1602 and many others covered previously in the presentation
- What is the problem we are trying to solve?
  - Is there a demonstrated need for additional environmental permitting requirements on top of the many that already exist?

CONSIDERATION OF NEW GENERAL ORDER FOR GAS INFRASTRUCTURE PERMITTING

Albert J. Garcia

Gas Planning OIR Workshop

January 10, 2022

SoCalGas™

Albert J. Garcia

- Currently serving as Director of Environmental Services for SoCalGas.
  - Joined SoCalGas in 2010
  - Prior experience at SoCalGas includes work as Senior Counsel focused on environmental permitting, including the California Environmental Quality Act (CEQA)
- Other prior experience includes over 8 years as Senior Attorney at SCE, assisting with permitting of large-scale electric infrastructure projects

GO-131D: History and Drivers

- The CPUC created a permitting regime for electric infrastructure projects to:
  - Review the need for proposed projects
  - Review the environmental impacts of proposed projects that otherwise had no discretionary agency review triggering CEQA
  - Clarify its preemptory authority

General Order for Gas Infrastructure Not Necessary

- Historical drivers for electric permitting under GO131-D are largely absent with gas infrastructure activities:
  - The *need* for projects is separately addressed
    - GRC
    - Planning Process Envisioned by this OIR
      - OIR would establish a programmatic and integrated approval to long term-planning
      - Plans would include proposed safety and reliability infrastructure investments, as well as planning process for longer-term investments necessary for advancing state decarbonization goals

General Order for Gas Infrastructure Not Necessary

- Adequate existing environmental review
  - In most instances, non-routine projects require a regional or state discretionary approval that triggers CEQA review
    - There is no need to create a new regime to deal with the rare exceptions
    - CPUC retains jurisdiction to address complaints/concerns
  - CEQA Guidelines require environmental review for capital projects that require obtaining funds for "the expansion of a system" (CEQA Guidelines 15273(b))
  - Moreover, a GO not necessary for routine construction and O&M work; analogous work is exempt for electric infrastructure

General Order for Gas Infrastructure Not Necessary

- Preemption
  - Non-routine gas projects are not being undertaken at the same rate as the electric infrastructure projects that were taking place
  - There is no administrative demand to address preemption categorically – CPUC's preemptory authority is well established

Recommendations if CPUC Develops a Gas Permitting General Order

- Exemptions:
  - Projects that are part of a compliance or safety program
  - Gas infrastructure projects that require a discretionary permit and CEQA review by another agency
  - Routine construction and operation and maintenance projects that are analogous to the electric projects that are exempted

- Permits could be required for projects that result in a specified increase of the system's receipt point and/or backbone transmission zone capacity or a specified increase in horsepower

- Project costs and needs should be not re-reviewed

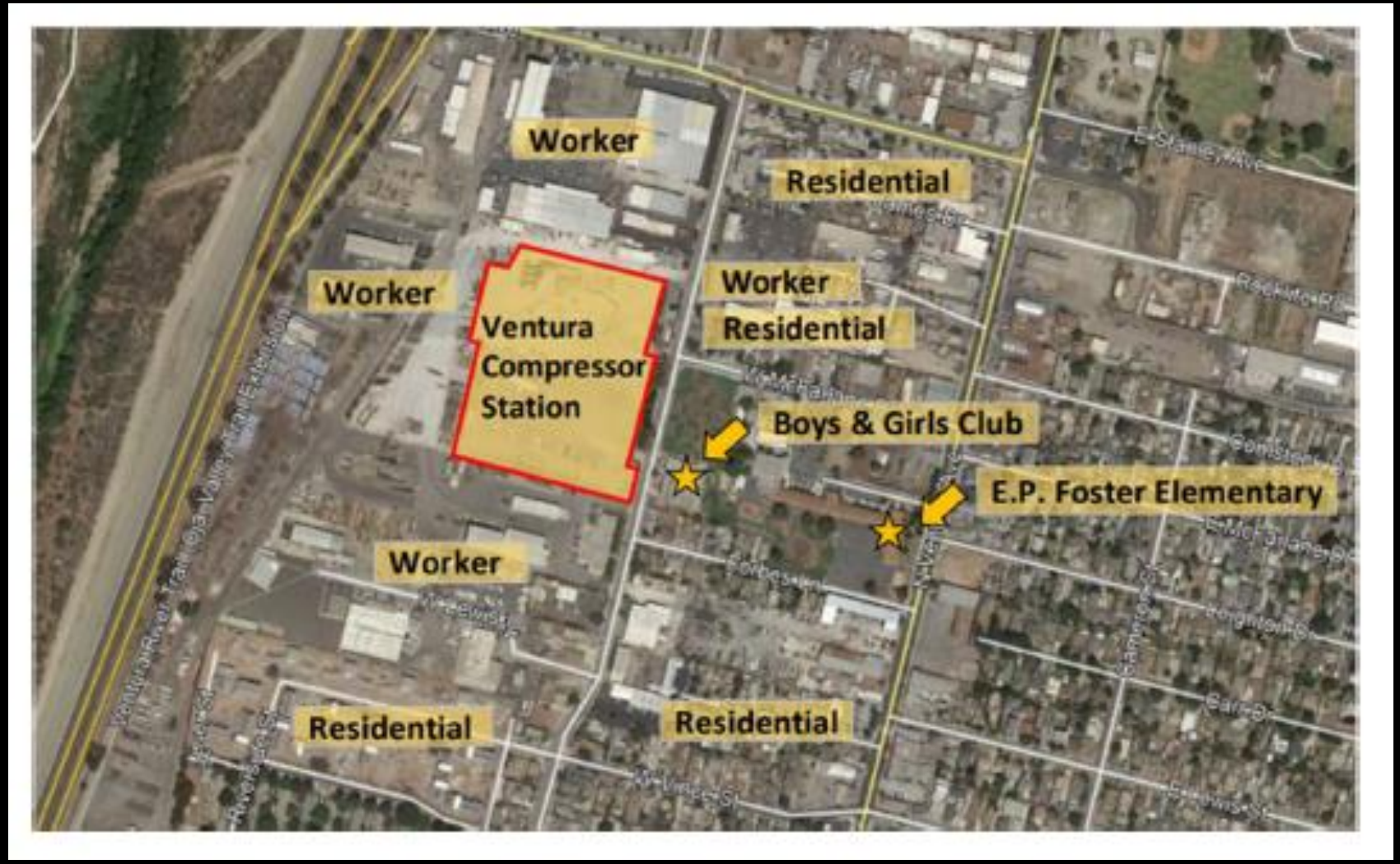
- Any new GO should state that "that local jurisdictions acting pursuant to local authority are preempted from regulating" gas infrastructure projects

EARTHJUSTICE
BECAUSE THE EARTH NEEDS A GOOD LAWYER

The Ventura Compressor Station Expansion:

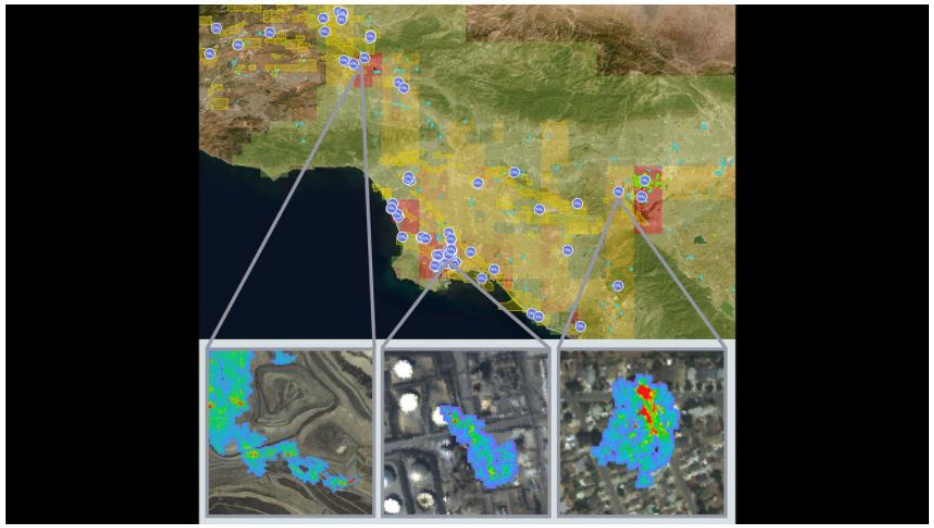
How Existing Commission Review Processes for New Gas Infrastructure Projects Fail to Protect Public Safety, Disadvantaged Communities and the Environment

Compressor Location: In Disadvantaged Community Across Street From Boys & Girls Club and Elementary School



A Third of California Methane Traced to a Few Super-Emitters

Written by Esprit Smith | Nov. 6, 2019



Views from NASA's , a tool that provides methane data for the state of California. The data are derived from airborne remote-sensing, surface-monitoring networks and satellites and are presented on an interactive map alongside infrastructure information.Methane Source Finder Credit: NASA/JPL-Caltech

VENTURA

Southern California Gas cites unplanned venting following Ventura gas leak scare

Wes Woods II Ventura County Star

Published 4:57 p.m. PT July 6, 2021 | Updated 5:42 p.m. PT July 6, 2021

View Comments

The venting of a Southern California Gas Co. compressor in Ventura rattled some nearby residents over the past weekend, but utility officials said it was no cause for alarm.

Some residents called officials about the scent of natural gas, suspecting a possible leak from the pressurizing facility.

SoCal gas officials said that while the venting around 3:45 p.m. Friday was "unplanned," the gas was safely dispersed through a relief vent stack — as the operation is designed to do.

Ventura City Council urges state to review gas compressor site

Wes Woods II Ventura County Star

Published 4:50 p.m. PT April 28, 2021

In Monday's council meeting, Rubalcava asked SoCalGas representatives about a NASA study on super methane emitters that showed a corresponding map with a plume over the Olive Street site and the surrounding area.

Local Government Authority
Preempted by the PUC for Utility-Related Projects

California Constitution, Article 12, Section 8

- Local governments may not regulate matters over which the Legislature grants regulatory power to the PUC.

SoCalGas v. City of Vernon (1995)

- City could not regulate the design and construction of a proposed gas pipeline because the PUC's statewide authority to regulate utilities preempted the city's authority.

SDG&E v. City of Carlsbad, 64 Cal. App. 4th 785 (1998)

- City's floodplain ordinance was preempted by PUC authority and could not be enforced against SDG&E for violations relating to dredging activity at its power plant, even though the PUC had no regulations pertaining to dredging.

Project Review in General Rate Cases Is Cursory, Inadequate and Excludes Engagement from Impacted Communities

b. Ventura Compressor Replacement Project

The scope of the Ventura Compressor Replacement Project proposed in the 2016 General Rate Case was subject to the same FEED process as Blythe and similarly was revised. The scope revision includes the addition of supporting system replacement and back-up unit design criteria. This revision has impacted both cost and schedule. Due to the expected completion date of later phases extending into 2021 or 2022, there are no explicit cost representations or revenue requirement for this project in this General Rate Case. The project and revised capital expenditures for this project will be presented in a future General Rate Case with a significantly more detailed scope than presented in the TY 2016 General Rate Case forecast. While SoCalGas spent some of its allocation of authorized 2016 capital to complete a substantial FEED for Ventura Station, significant scope change and challenges in permitting and logistics have required us to extend the execution schedule and in-service date beyond this General Rate Case cycle.

Ventura Station is critical to the continued ability of SoCalGas to meet its obligation to serve customers. The continued reliable operation of this station will be needed, in part, to compensate for the continued decline in offshore gas supplies entering into the North Coastal pipeline system as the associated gas and oil fields are drawn down.

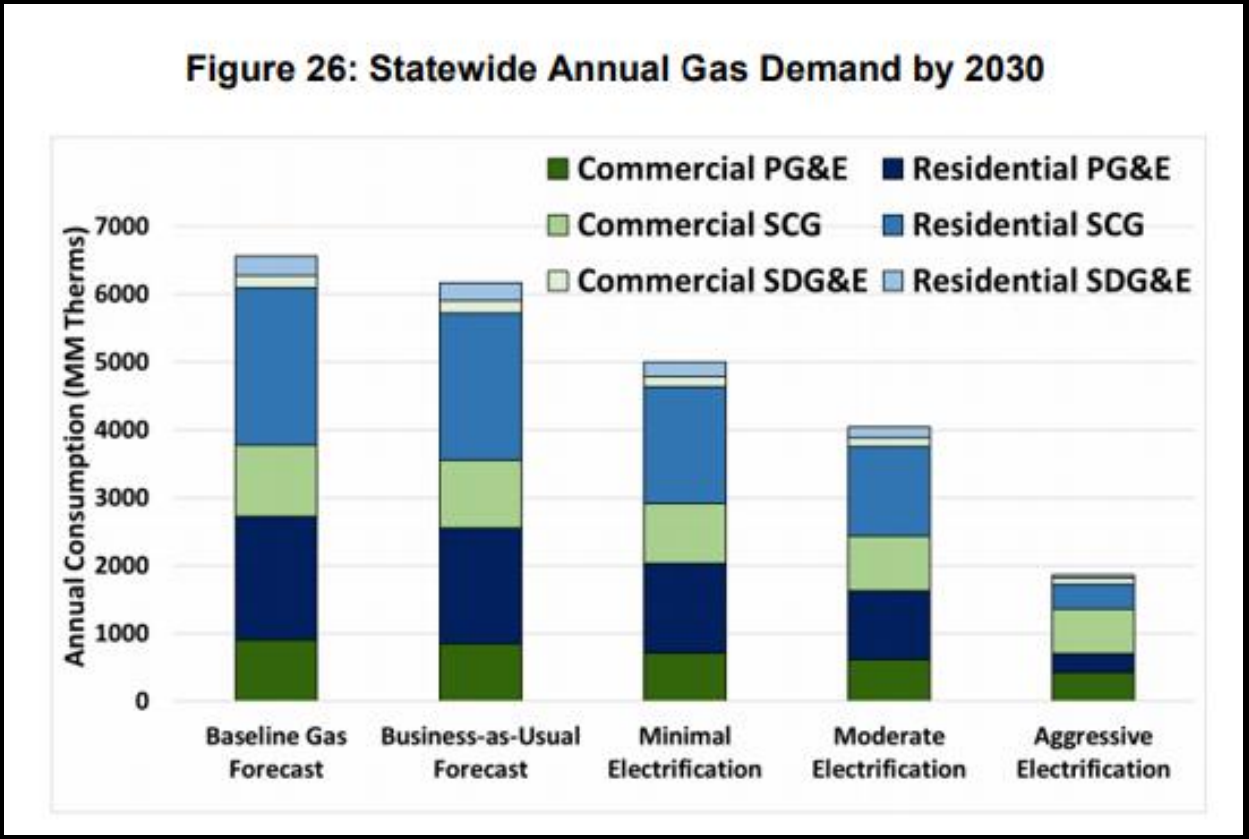
Additional details on the Ventura Compressor Replacement project, including the forecasted capital expenditures and post-test year investment, are provided in the Supplemental Workpaper in Exhibit SCG-07-CWP, Workpaper Group M03350.

Environmental Review by CPUC Necessary to Evaluate Project Need and Alternatives

Project Need in Context of Declining Gas Demand

Project would expand compression 2.3x

- Current capacity: Three 1,100 hp compressor = 3,300 hp
- Proposed capacity: Four 1,900 hp compressors = 7,600 hp



California Energy Commission – AB 3232 Final Building Decarbonization Assessment

Where things stand

STATE OF CALIFORNIA — Gavin Newsom, Governor

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

August 20, 2021

VIA E-MAIL
Scott Drury, Chief Executive Officer
Southern California Gas Company
555 West Fifth Street
Los Angeles, CA 90013-1011

SUBJECT: Ventura Compressor Station

Dear Mr. Drury:

Thank you for the Data Request 5 (DR-5) response submitted by Southern California Gas Company (SoCalGas) on August 6, 2021 and your letter of August 13, 2021.

This letter memorializes SoCalGas' commitment to meaningfully engage the public by more fully discussing SoCalGas' plans for the Ventura Compressor Station in a public forum. This approach will increase community engagement and may lead to the incorporation of community interests into SoCalGas' plans. The California Public Utilities Commission (CPUC) also looks forward to reviewing a more detailed feasibility analysis of potential alternative sites and equipment configurations.

While SoCalGas is performing more detailed feasibility analysis of alternative sites and configurations, the CPUC requests that SoCalGas halt further planning and procurement for the Ventura Compressor Station modernization project. Until SoCalGas completes all additional review that SoCalGas has committed to do in the DR-5 response, it would be premature to commit to costly purchases.

Environmental Review of Compressor Station Replacement at Aliso Canyon

1.0 Executive Summary

This Proponent's Environmental Assessment (PEA) has been prepared to support the application by the Southern California Gas Company (the "Proponent" or "SoCalGas") to the California Public Utilities Commission (CPUC) for a Certificate of Public Convenience and Necessity (CPCN) authorizing the development, construction, and operation of the Aliso Canyon Turbine Replacement Project (the "Proposed Project"), which is a planned removal from service of an existing gas turbine-driven compressor (TDC) station located at the Aliso Canyon natural gas storage field (hereinafter referred to as "the Storage Field"), in Northridge, California. The TDCs would be replaced with three variable frequency drive (VFD) compression trains, and installed in a new compressor station (the "proposed Central Compressor Station"). The Proponent's application also requests approval under Section 851 of the Public Utilities Code for the enlargement of an existing SCE electrical easement on SoCalGas property.

Standards for CPUC Project-Specific Review

Environmental Review

- Large compressor station projects? (small, medium, large categories in GRC)
- Transmission line investments above certain $$ (e.g. Line 1600)
- Distribution line investments above certain $$
- Regardless of any cost or size standards, Commission should always conduct environmental review through public process where necessary to ensure public heath, safety, environmental justice
    - Local gov't request process

Examination of Alternatives/Purpose/Need of Pipeline Investments In New Process Outside GRC

- GRC process too short a timeframe to evaluate and implement pipeline alternatives
- Could include multiple projects, were need and potential alternatives evaluated

Questions or comments?

Submit questions in the chat or raise your hand

Gas System Planning OIR Workshop – Track 2

January 10, 2022

Bryon Winget- Director, Gas Investment Planning





PG&E

Together, Building
a Better California

Scoping Memo Question 2b: What criteria should the Commission use to determine whether aging transmission infrastructure should be repaired or replaced when a gas utility requests ratepayer funds?

i. Should the repair or replacement criteria be based on whether that piece of infrastructure is necessary to meet the utility's design standard as determined in Track 1?

- *Yes. PG&E believes repair or replacement criteria should be considered when making gas capacity investment decisions necessary to meet a utilities' current design standard or as modified by the Commission in Track 1 of this Rulemaking.*
- *Example: The proposed retirement of the Tionesta Compressor Station. Saves $80+ million in capital but reduces Malin receipt capacity. However, the overall system still meets the design standards.*
- *Example: PG&E's Integrated Scoping and electrification process has led to targeted system reduction since 2019 including:*
  - *Miles of transmission pipe deactivated*
  - *Miles of transmission pipe downrated to distribution*
  - *High pressure regulators (HPR) deactivated*
  - *Distribution regulation stations deactivated*

Pipeline Replacement for Green Valley Fault in Fairfield

Delevan Compressor Station Turbine Exchange

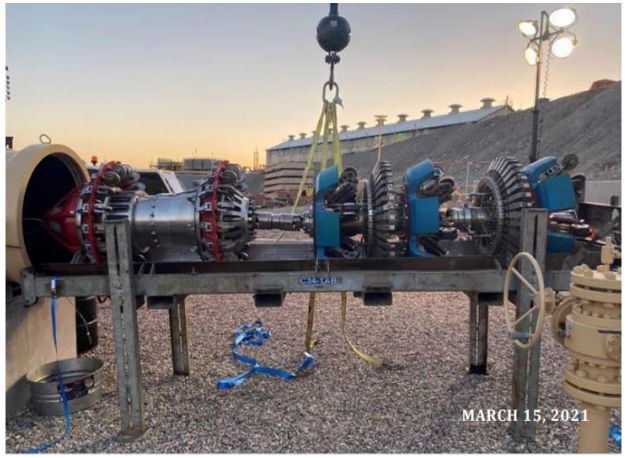
Scoping Memo Question 2b: What criteria should the Commission use to determine whether aging transmission infrastructure should be repaired or replaced when a gas utility requests ratepayer funds?

ii. What other criteria might be considered?

- ❑ *Safety, risk, reliability, compliance, obligation to serve and relocation as required by others.*
  - *Code of Federal Regulations 192 subpart O*
  - *American Society of Mechanical Engineers (ASME) B31.8S*
  - *National Association of Corrosion Engineers (NACE)*

- ❑ *Cost effective opportunities to replace, deactivate pipe or electrify customers. These opportunities are dependent on the following, also covered in Track 2:*
  - *Modification of Utility Obligation to Serve*
  - *Customer feasibility or practicality*
  - *Need for innovative and external funding sources to supplement non cost-effective opportunities*
  - *Consideration of flexible accounting policies (Expense vs. Capital)*

ILI upgrade at Los Medanos



Magnetic Flux Leakage (MFL) tool

Scoping Memo Question 2b: What criteria should the Commission use to determine whether aging transmission infrastructure should be repaired or replaced when a gas utility requests ratepayer funds?

iii. How should the cost to repair or replace the infrastructure be balanced against its reliability benefits?

- *Is there a continued need for the pipeline?*
  - *Meet Customer Needs*
  - *Operational Needs*
- *Is an investment required to safely operate and maintain a utilities' gas system in accordance with state and federal requirements?*
- *Will the investment enable the gas utility to meet its obligation to serve?*
- *Will the gas investment allow a utility to respond efficiently and cost effectively to active threats on its system?*

Opportunities in the Gas System

Low utilization high maintenance cost facilities

- *Transmission line supporting rural customers, i.e. farm taps, gas gathering lines*

Large-scale LNG Injection Site

Defects found on Transmission Pipeline

Long Term Gas Planning Workshop

Rulemaking 20-01-007

January 10, 2022

Michael Colvin
Director, California Energy Program

EDF
ENVIRONMENTAL DEFENSE FUND
Finding the ways that work

What Criteria Should the Commission use to determine whether aging infrastructure should be repaired or replaced?

- Key criterion: What is the function what is being repaired and/or replaced?
  - Backbone transmission has different implications than distribution level asset
- Key criterion: What set of customers will benefit from the project? Will those customers change or shift over the expected useful life of the asset?
  - Possible that customer reliability needs today will not match reliability needs at the end of the project
- Key Criterion: How long will the asset be used and useful?
  - Need to plan for changing expected useful life

Why are we making a new investment?

- How does the new investment fit into the long-term plan?
- What goal does the investment accomplish and why?
- Can the same goal be accomplished in a different way?
- Who should pay – cost of reliability is different for each customer category

Is new investment into existing infrastructure the only way to meet the energy obligation?

- The key is to focus on giving customers reliable energy not necessarily reliable gas
- What is possible as a non-pipeline alternative?
  - The Commission has a long history of non-wires alternatives
- Recognize that there is an inherent trade-off between affordability and reliability
- How does the investment help meet the long-term vision the utility will establish to reach a carbon reduction goal for itself and its customers?

Establish a gas investment priority order

- Non-pipeline alternatives to optimize total customer demand, including gas energy efficiency programs and fuel switching programs such as targeted electrification
- Non-pipeline alternatives to address peak day constraints such as gas demand response programs
- What reduces LUAF through leak detection (methane risks)
  - Prioritize repairs not just for reliability but also to mitigate climate harm from a leak
- Leverage gas trading reforms, AMI usage, time of use rates to further minimize gas demand

Shared Savings

- Non-Pipeline Alternatives can have significant cost savings
  - Share benefit between ratepayers and shareholders
- Non-Pipeline Alternatives should also consider cost-effectiveness under a different time horizon – the expected useful life of physical infrastructure repair could be very different than the NPA so need to think about the time-value of the potential savings
  - Example – a 20 year expected useful life vs. a 30 year NPA investment might have different ratepayer benefits

R.20-01-007 Track 2a
Answers to Scoping Memo Question 2.b. and subparts

PRESENTED BY CATHERINE YAP

ON BEHALF OF

THE SOUTHERN CALIFORNIA GENERATION COALITION

JANUARY 10, 2022

Scoping Memo Question 2.b

What criteria should the Commission use to determine whether aging transmission infrastructure should be repaired or replaced when a gas utility requests ratepayer funds?

Response

- The 2012 INGAA Foundation study concluded that “the age of a natural gas transmission pipeline, in and of itself, is not the most important factor affecting the safety of that pipeline.”
- Regular safety assessments are required under federal regulations to address time variant factors as well as non-time variant factors and to make any necessary repairs.
- Lines should be repaired rather than replaced wherever it is cost effective and sufficient to meet safety standards; it may be appropriate to replace sections of pipelines.
- Older lines should not be replaced just because they are older; the decision to repair or replace should depend on a rational process that considers the most cost-effective means to ensure pipeline safety and reliable operations.

Scoping Memo Question 2.b.i

Should the repair or replacement criteria be based on whether that piece of infrastructure is necessary to meet the utility's design standard as determined in Track 1?

Response

- Each pipeline should be determined to be functionally necessary because the cost of owning and maintaining the pipeline is very significant.
- Need for the line should be periodically evaluated as to how it helps meet the various utility design standards.
- The determination as to whether a line should be repaired or replaced should be based on the most cost-effective means to ensure safe pipeline operations.
- Safe operations rely upon well maintained pipelines which in turn provides reliable service.

Scoping Memo Question 2.b.ii

What other criteria might be considered?

Response

- In situations where it is not clear whether repairs would be sufficient, electric utility reliability or reliability for other services should be considered.
- For example, assuring service to generating plants located in an electric “load pocket” may be the only way to assure local electric reliability.

Scoping Memo Question 2.b.iii

How should the cost to repair or replace the infrastructure be balanced against its reliability benefits?

Response

- Gas utilities can curtail larger customers rather than build infrastructure to meet extreme weather-related demands—the reliability standards reflect this flexibility.
- The reliability standards combined with customer load levels and load locations drive the determination of which transmission lines must be operated.
- The utility is required by state and federal regulations to maintain a safe system. If the pipelines are operating, the utility must perform the requisite safety inspections and repairs.
- A utility should pursue the most cost-efficient approach to maintaining its system that meets both the safety and reliability standards imposed on it.

Mark Pocta

Cal Advocates


Questions or comments?
Submit questions in the chat or raise your hand


RELAX
REFRESH
RECHARGE
Notes

Track 2 Workshop in the Long-Term Gas System Planning Rulemaking, R.20-01-007

Matthewson (Matt) Epuna

Program and Project Supervisor

CPUC Safety and Enforcement Division

This presentation does not constitute the opinion of the Commission.

California Public
Utilities Commission

Primary Question For This Panel

- What criteria should be used to determine when declining demand can enable transmission lines to be de-rated or decommissioned without harming reliability?

Two Key Question From Scoping Memo

- How should the Commission define a transmission pipeline vs. a distribution pipeline?

- What should the regulatory process be for de-rating a transmission pipeline to a distribution pipeline?

SED's Special Study –Transmission Pipeline Definitions

- Decision (D.) 18-06-028 Ordering Paragraph 4 required SED to complete a study of California pipeline operators' definitions of transmission and distribution pipelines to determine whether there is a need for the Commission to provide further definitions than those provided under 49 Code of Federal Regulations (CFR) Part 192 § 192.3 and at what cost.

- Decision (D.) 18-06-028 Ordering paragraph 5 required SED to facilitate one or more workshops with the goal of clarifying how the definition of distribution center would apply under different circumstances and at what costs.

- Decision (D.) 18-06-028 Ordering paragraph 6 required SED, following the study and if warranted, to promote an Order Instituting Rulemaking to clarify how the definition applies under various circumstances and make appropriate recommendations to the Commission.

SED Determined the Following:

- The existing GO 112-F definitions of transmission pipeline allowed a difference in operators' interpretations of the functional definition of transmission pipeline.

- The primary reason for the variations in the interpretation of the functional definition of transmission pipeline is the ambiguity in the use of the following terms: 1) distribution center and 2) large volume customer that is not down-stream from a distribution center.

SED Conclusion

- SED concluded that the existing transmission pipeline definitions allowed operators flexibility to define distribution center and thus transmission line.

- In addition, SED concluded that this flexibility does not pose a threat to public safety at this time.

CPUC Gas Pipeline Safety Regulations

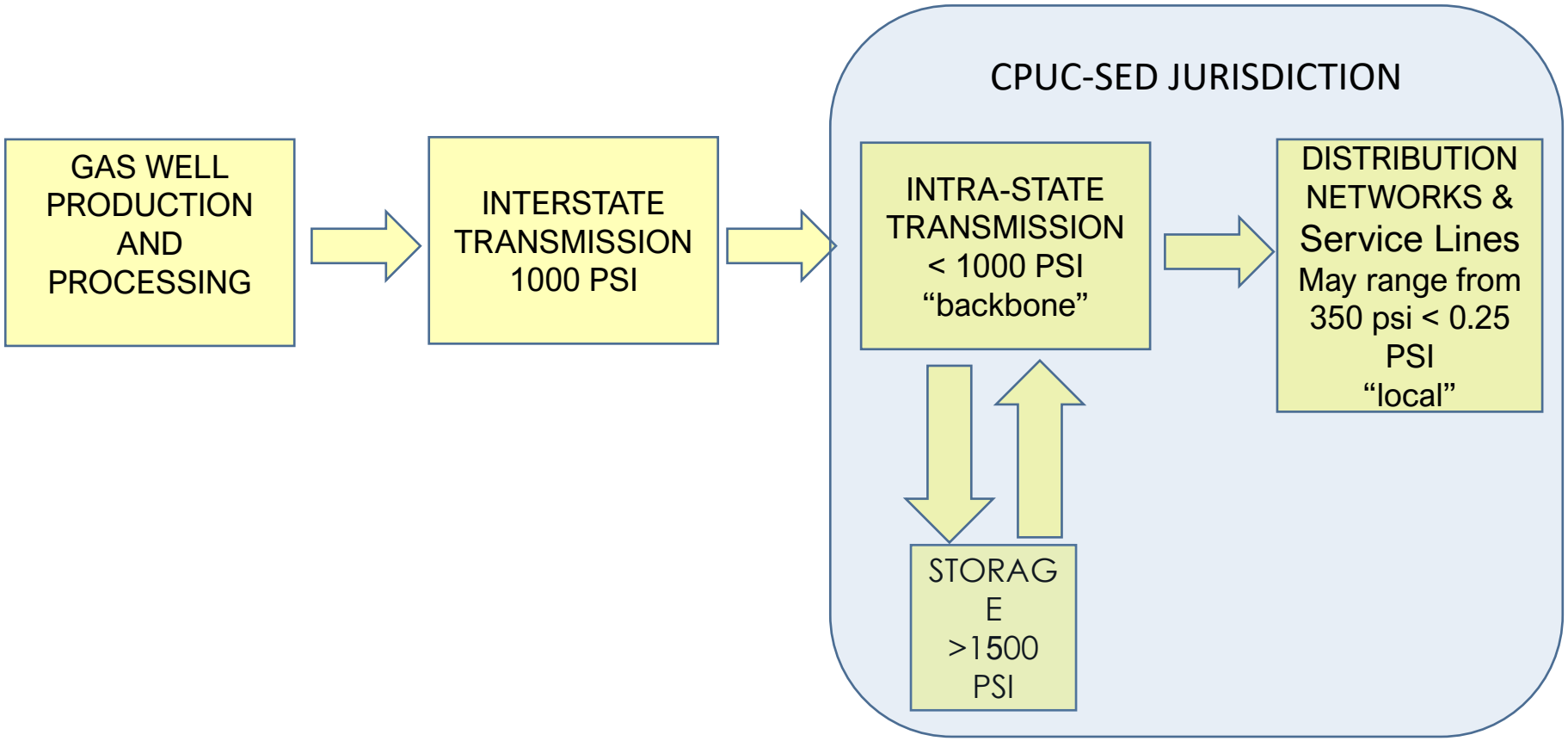
- CPUC through Certifications and Agreements with the "Pipeline and Hazardous Materials Safety Administration" (PHMSA) under 49 U.S.C. §§ 60105- 60106 adopts and enforces the Federal Natural Gas Pipeline Safety Regulations on all investor own entities that operate intrastate gas pipelines and natural gas storage fields in CA.
- The Federal Pipeline Safety Regulations prescribes minimum safety requirements for pipeline facilities and the transportation of gas as it relates to Design, Construction, Testing, Operation, and Maintenance of Gas Gathering line, Transmission, and Distribution Piping Systems.

Natural Gas Pipeline Safety Regulations Cont'd

- DOT promulgated Title 49 Code of Federal Regulations (CFR) Parts 190, 191, 192, 193, and 199.

- CPUC's G.O. 112-F automatically incorporates these regulations and all revisions thereof, with the effective date being the date of the final order as published in the federal register.

Natural Gas Pipelines and SED's Jurisdiction



49 CFR Part 192, §192.3 Definitions

❖ **Transmission line** means a pipeline, other than a gathering line, that:

✓ (1) Transports gas from a gathering line or storage facility **to a distribution center, storage facility,** or **large volume customer** that is not down-stream from a distribution center;

✓ (2) operates at a hoop stress of 20 percent or more of SMYS; or $(P = \frac{2St}{D}(.20))$

✓ (3) transports gas within a storage field.

Some of the Differences in Operation and Maintenance Between Transmission vs Distribution Pipelines

TRANSMISSION

- ✓ Integrity-Program (TIMP)
  1. In-line-Inspection
  2. Direct Assessment
  3. Pressure Test
- ✓ HCA Determination
- ✓ Class Location Survey
- ✓ PU Code 958 mandates
- ✓ MAOP Reconfirmation (30% SMYS and lack TVC)
- ✓ Leakage Surveys
- ✓ Patrolling
- ✓ Valves Spacing & ASV RCV

DISTRIBUTION

- ✓ Integrity Program (DIMP)
- ✓ Leak Survey
- ✓ Patrolling.
- ✓ Valve maintenance

Metrices of IOUs Jurisdictional Pipelines

- ✓2021 Transmission Mileage: 10,368 Miles
- ✓2021 Distribution Mileage: 203,000 Miles
- ✓2021 Number of Services: 9,036,398
- ✓2021 Gathering Line Mileage: 0
- ✓Transmission:
  - 2021 – 10,368 Miles (5th behind TX, LA, KS,OK)
  - HCA -- 2,879.5 Miles

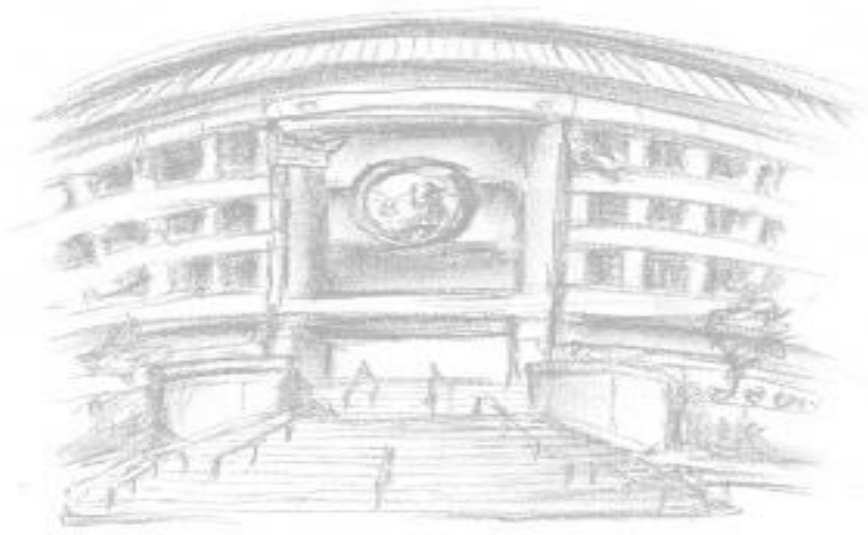
2nd Key Scoping Memo Question

- What should the regulatory process be for de-rating a transmission pipeline to a distribution pipeline?
  - ✓Safety
  - ✓Reliability
  - ✓Compliance 49 CFR Part 192, §192.3 Definitions

Pipeline Parameters to Consider before De-ration

- MAOP (psi) – Maximum Allowable Operating Pressure
- Operating Pressure (psi)
- Percent SMYS
- Diameter (inches)
- Length (miles)
- Class Location
- Capacity

Thank you!
For Additional Information:
EMA@CPUC.CA.GOV
(213) 598-4228



California Public Utilities Commission
Workshop for Long Term Gas Planning
Track 2

January 10, 2022

Presentation Objectives

- Provide forum for information sharing
- Improve understanding of pipeline definitions
- Discuss proposed guidance
- Provide update on definitions perspective

Discussion Areas

- Rule History
- What's PHMSA Working On?
- FAQs and Definitions

PHMSA Rule History

2010 | 2011 | 2012 | 2013 | 2014 | 2015

San Bruno, CA Incident 9/9/10

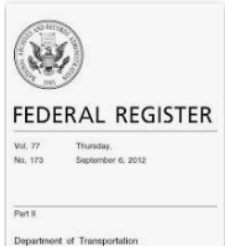
NTSB Report 8/30/11

ANPRM 8/25/11

Sissonville, WV Incident 12/11/12

PSA of 2011 1/3/12

NTSB Report 2/19/14

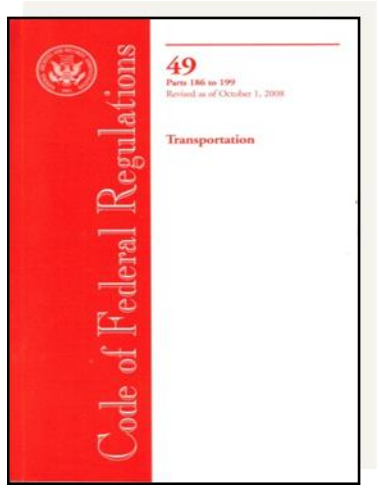


2016 | 2017 | 2018 | 2019 | 2020

NPRM 4/8/16

GPAC Meetings (5) 1/17 – 3/18

Gas Rule – Split Into Three Final Rules



RIN 1 – Safety of Gas Transmission Pipelines: MAOP Reconfirmation, Expansion of Assessment Requirements, and Other Related Amendments

Final Rule Published October 1, 2019

RIN 2 – Repair Criteria, IM Improvements, Cathodic Protection, Management of Changes, and Other Related Amendments

Final Rule under development

RIN 3 – Safety of Gas Gathering Pipelines: Extension of Reporting Requirements, Regulation of Large, High Pressure Lines, and Other Related Amendments

Final Rule Published November 15, 2021

Frequently Asked Questions (FAQs)
&
Answers

Frequently Asked Questions (FAQs) & Answers

- Solicited, and continue to solicit FAQs
  - Industry
  - State/Federal Regulators
  - Public

- Assist in implementation of final rule; provide
  - Clarity to existing requirements
  - Guidance
  - Information Sources
- Batched, draft FAQs posted in Federal Register to solicit public comment - Docket ID: PHMSA-2019-0225

FAQs & Answers – 1st Batch
Gas Rule FAQs 1.30.20

44 draft FAQs and Answers

Posted for public comment January 30, 2020; comment period was open until March 27, 2020

Topical Areas include:

- General
- Reporting
- Other Technology Notification
- Moderate Consequence Area
- MAOP Establishment and Reconfirmation
- Spike Hydrostatic Testing
- Material Verification
- Failure Mechanics
- Assessments Outside HCAs

FAQs & Answers – 2nd Batch
Gas Rule FAQs

- Content includes 24 more FAQs to address:
  - New questions received at February 27, 2020 Public Meeting
  - New questions received on Docket (PHMSA-2019-0225) before March 27, 2020
- Similar topical areas as 1st Batch
- Posted Draft Batch-2 FAQs posted to Federal Register December 22, 2020 for comment (Closed March 16, 2021)
- Final Batch 2 FAQs Under Legal Review

FAQ Comments & Additional Questions

- **Propose new FAQs:**
  Submit additional questions/clarifications/hypothetical scenarios to docket PHMSA-2019-0225, at https://www.regulations.gov/docket?D=PHMSA-2019-0225

- **Batch-1 and 2 FAQs public comments**
  Read comments to docket, PHMSA-2019-0225, at https://www.regulations.gov/docket?D=PHMSA-2019-0225

Definitions & Additional Questions

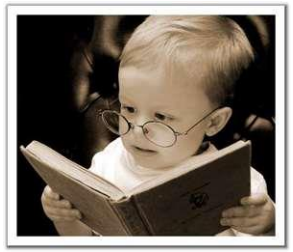
§192.3 Definitions:

Distribution line **means a pipeline other than a gathering or *transmission line*.**

Gathering Line **means a pipeline that transports gas from a current production facility to a transmission line or *main*.**

Transmission line **means a pipeline, other than a gathering line, that: (1) Transports gas from a gathering line or storage facility to a distribution center, storage facility, or large volume customer that is not down-stream from a distribution center; (2) operates at a hoop stress of 20 percent or more of SMYS; or (3) transports gas within a storage field.**

NOTE: A large volume customer may receive similar volumes of gas as a distribution center, and includes factories, power plants, and institutional users of gas.



PHMSA Resources

PHMSA Homepage, Office of Pipeline Safety
www.phmsa.dot.gov

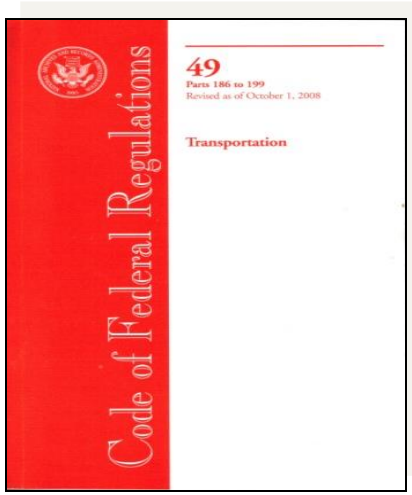
Standards & Rulemaking
http://www.phmsa.dot.gov/pipeline/regs

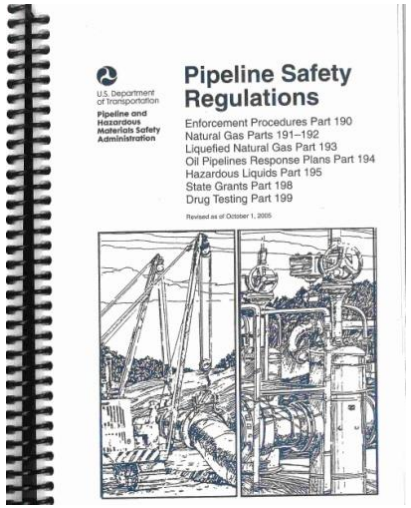
PHMSA Technical Resources
https://www.phmsa.dot.gov/technical-resources/pipeline/pipeline-technical-resources-overview

GPAC Meeting slides for reference at "Public Meetings" tab
(https://primis.phmsa.dot.gov/meetings/)

PHMSA's Stakeholder Communications Site
http://primis.phmsa.dot.gov/comm

For Federal Regulations (Official Version)
www.ecfr.gov





Thank You!

Tom Finch
Community Liaison/Engineer
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(303) 807-7200
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https://www.phmsa.dot.gov/

CONSIDERATIONS FOR PROSPECTIVELY DERATING TRANSMISSION LINES TO DISTRIBUTION

N. Jonathan Peress

Gas Planning OIR Workshop

January 10, 2022

SoCalGas™

Discussion Topics

- Technical considerations underpinned by safety requirements
  - E.g., PHMSA requirements
- Gas utility and integrated energy system planning considerations
  - E.g., attributes and capabilities of wholesale transmission and storage infrastructure
- State agency and SoCalGas decarbonization scenario planning suggest that while annual throughput will decline, peak throughput will not.

Technical Considerations

- PHMSA regulations require pipelines to be designed and to maintain structural integrity under the temperature, environmental and operational conditions that may be anticipated
  - Maximum Allowable Operating Pressure (MAOP) is a key consideration for which operators are required to design, test and sufficiently maintain pipeline integrity
    - The higher the MAOP, the more rigorous the requirements
  - Proximity to structures and public (i.e., classifications), also dictate rigor of integrity requirements, including inspections for corrosion, leak detection and MAOP (e.g., high consequence areas)
- In general, lower operating pressures would diminish the rigor of testing, inspection and other such safety requirements
  - In theory, derating from high pressure transmission to medium pressure distribution (for which less rigorous requirements apply) would decrease the magnitude and cost of testing, assessment and maintenance activities
- In practice rigorous integrity management requirements also apply to distribution
  - Reallocating cost – derating could shift current transmission asset costs to distribution customers, potentially exacerbating rate inequities
- Resiliency – reducing pressure reduces capabilities including to overcome unforeseen and scheduled outages, and other events impacting capacity and supply

Gas utility and integrated energy system planning considerations

- Need for operational integration of gas and electric systems is growing as the energy system is transformed
- Wholesale gas transmission pipelines (and storage) support the electric grid due to several needs and attributes
  - Intraday volatility of electric supplies requires responsiveness from gas grid including just in time (and peak) deliverability and also line pack for when intraday gas demand decreases
  - Resiliency – Alleviating potential energy shortages due to supply shortfalls
  - Expectation is that these needs and trends will be addressed by the planning process which is the primary goal of this docket
- The gas system must be designed to meet the predicted peak needs of the system with respect to both deliverability and line pack (storage) even as annual throughput is reduced

Understanding Declining Demand, Peak Use and Prospective Derating

Track 1B Workshop Participant Dr. Arne Olson succinctly expressed the implications of decarbonization to gas utility infrastructure needs (July 21, 2020).

The real question will be [] the average daily throughput being reduced and the average gas generation being reduced by 2030.

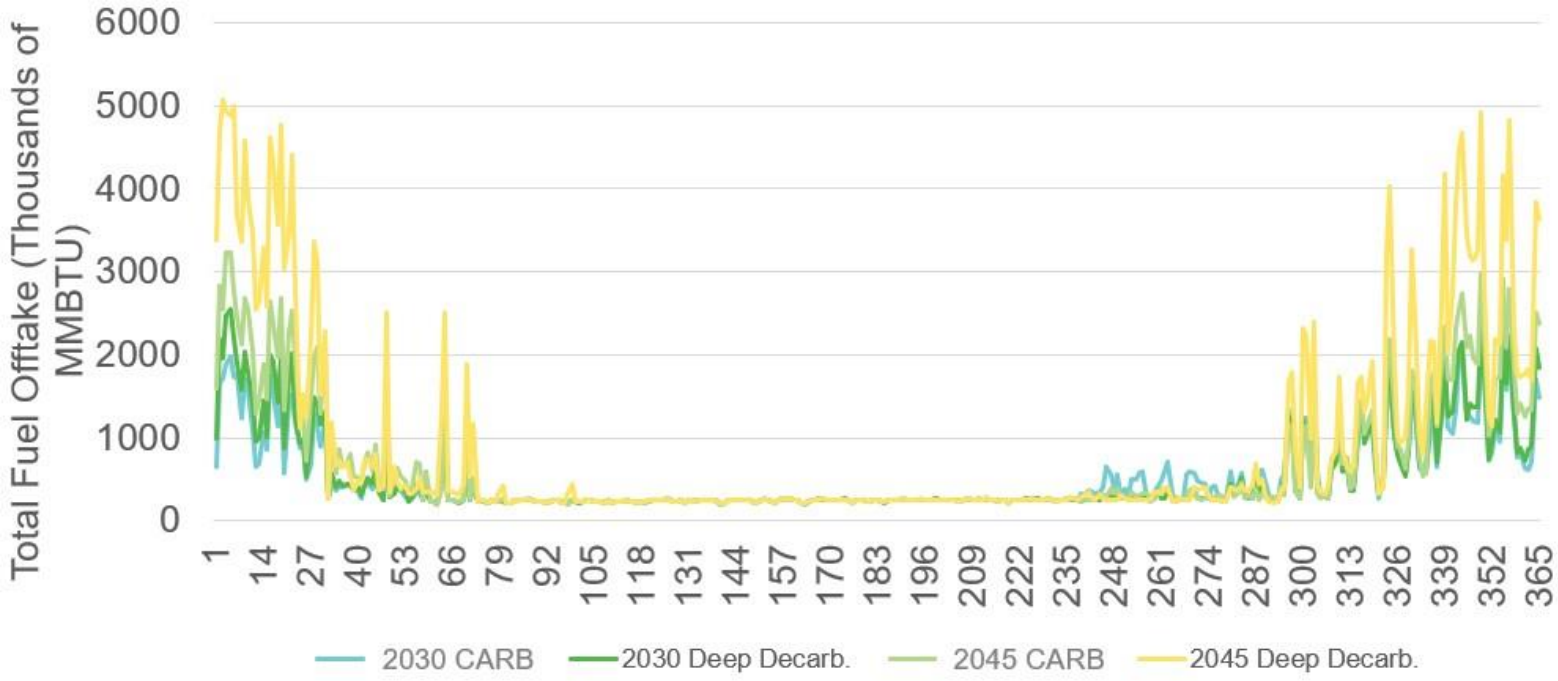
It doesn't necessarily mean that the peak use of natural gas for electric generation is going to decrease. And I would expect to see [] that as heating loads in California are electrified, that we might actually see increased gas use during wintertime peak.

And since the infrastructure really needs to be sized based on peak use not based on average use, I think it does raise some important questions about how to [] make sure that infrastructure is funded and is in place when we really need it, even as we expect the average use of it to decline over time due to carbon policies.

SoCalGas Scenario Decarbonization Planning

Peak hourly fuel offtake by EG increases commensurate with the rate of decarbonization

California Daily Gas Burn – Under Various Decarbonization Scenarios



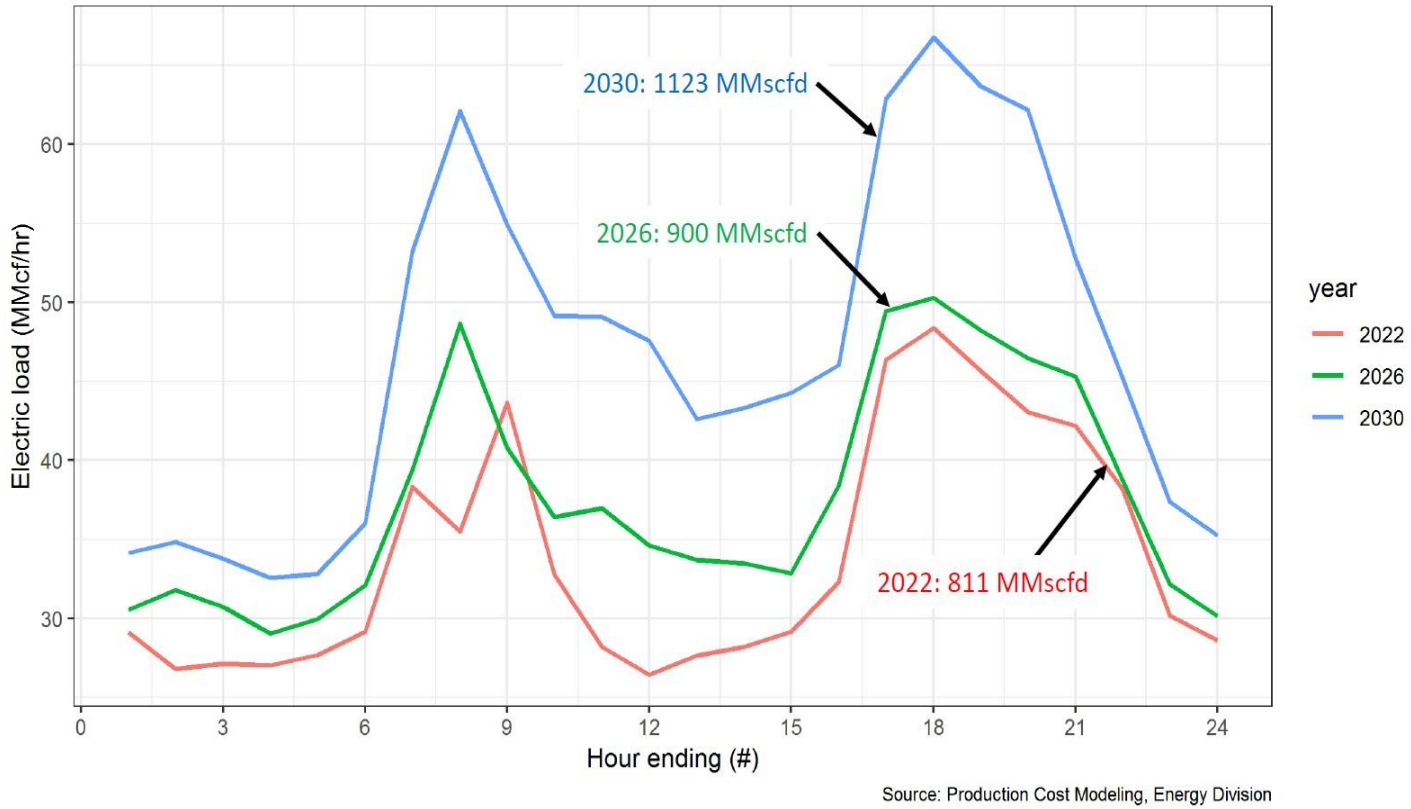
SoCalGas

Glad to be of service.®

State Agency Decarbonization Planning

CPUC Staff Modeling predicts increasing seasonal peak usage by EGs

Aggregate EG Profiles for Winter (1-in-10)



Source: Production Cost Modeling, Energy Division

Implications for Prospective Derating

- The importance of capable high pressure transmission (and storage) grows with decarbonization
- SoCalGas decarbonization modeling suggests that peak hourly and daily takes by EGs will continue to grow and offset, at peak, reductions in core gas use
- CPUC-reviewed and transparent integrated energy system planning should be a result of this docket and will inform the extent to which wholesale-level transmission assets can be derated as a tool to decrease customer costs without harming reliability


Questions or comments?
Submit questions in the chat or raise your hand


BREAK
TIME !!

SOUTHWEST GAS

Long-Term Gas System Planning

Workshop 1 of Track 2

Rulemaking 20-01-007

January 10, 2022

Southwest Gas Overview

- Operate in California, Arizona, and Nevada
- Southwest Gas serves over 2.1 million customers company-wide
- Southwest Gas serves approximately 200,000 customers in California
- Service territories in California include:
  - Southern California high desert – Victorville, Barstow, Big Bear, and Needles
  - Northern California – Truckee and Tahoe area

Appropriate Gas Infrastructure Portfolio

How should the Commission determine the appropriate gas infrastructure portfolio for gas utilities that operate in California given the state's greenhouse gas reduction laws and the utilities' statutory obligation to serve customers within their service territories?

The appropriate gas infrastructure portfolio focuses upon:

- **Fortification:** Continues enhancements that prioritize safety, reliability, affordability, and resiliency for current customers and future growth.
- **Optimization:** Implements new technology and processes to improve the efficiency of the system to reduce greenhouse gas (GHG) emissions.
- **Advancement:** Is prepared for advances in gas energy expected to significantly reduce GHG emissions.

Track 2a: Section D

What criteria should the Commission use to determine whether aging distribution infrastructure should be repaired or replaced when a gas utility requests ratepayer funds?

Criteria for Addressing Aging Infrastructure

The Commission should consider these questions when determining whether aging distribution infrastructure should be repaired or replaced with ratepayer funds:

Fortify:

- Is system safety maintained and/or improved?
- Is system reliability maintained and/or improved?
  - Reliability = delivering energy to customers every day.
- Is system resiliency maintained and/or improved?
  - Resiliency = delivering energy to customers every day, even in increasingly high-impact events.

- Distribution Integrity Management Program
- Risk-informed decision-making process

Optimize and Advance:

- Does repair/replacement maintain and/or improve energy affordability?
- Does repair/replacement prepare the system for advances in gas energy?

Track 2a: Section D.i

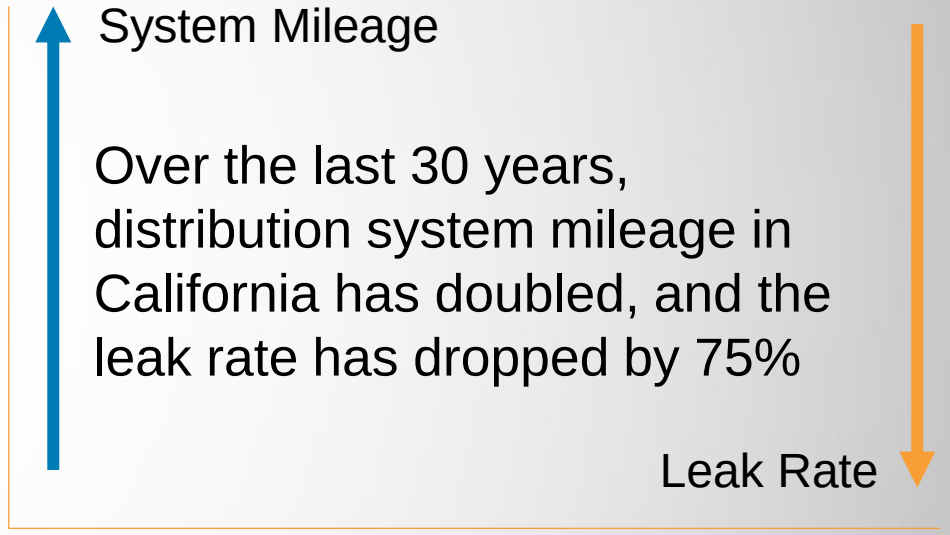
What pipeline-related characteristics should be considered when determining whether to replace distribution infrastructure?

Pipeline-Related Characteristics for Replacement

The gas infrastructure is a critical part of serving future energy needs. Characteristics that should be considered when determining whether to replace infrastructure:

System: Safety, Capacity, and Efficiency

- Through the Commission's risk-informed decision-making process, Southwest Gas is continuing to modernize its system to increase safety, meet continuing energy demands, and operate efficiently to reduce GHG emissions.
- 87% of the distribution system is 1980 or newer. All PVC and Aldyl-A is removed. No bare steel or cast iron.



Track 2a: Section D.ii

What community characteristics should be considered?

Community Characteristics to Consider

A sizeable portion of Southwest Gas' California service territory includes disadvantaged communities. The following characteristics are representative of communities in our territory and should be considered:

- Socioeconomic factors such as:
  - Lower income
  - Higher unemployment rates
  - Lower levels of homeownership
  - Higher rent burden
  - Lower levels of educational attainment
- Geographical factors such as:
  - Vulnerability to flooding
  - Potential of forest fires
  - Drought
  - Earthquakes
- Community types:
  - A blend of rural and urban
- Increased energy demand in large customers:
  - Military microgrids
  - Energy intensive mining
  - Energy intensive agricultural growth
  - Continuing commercial and industrial growth

Track 2a: Section D.iii

What goals should be considered when using these community characteristics?

Community Characteristics – Goals for Service

Energy must be readily available to everyone. The following objectives, or necessary conditions, must be achieved when considering community characteristics:

- Energy system safety
- Energy system reliability
- Energy affordability
- Energy system resiliency

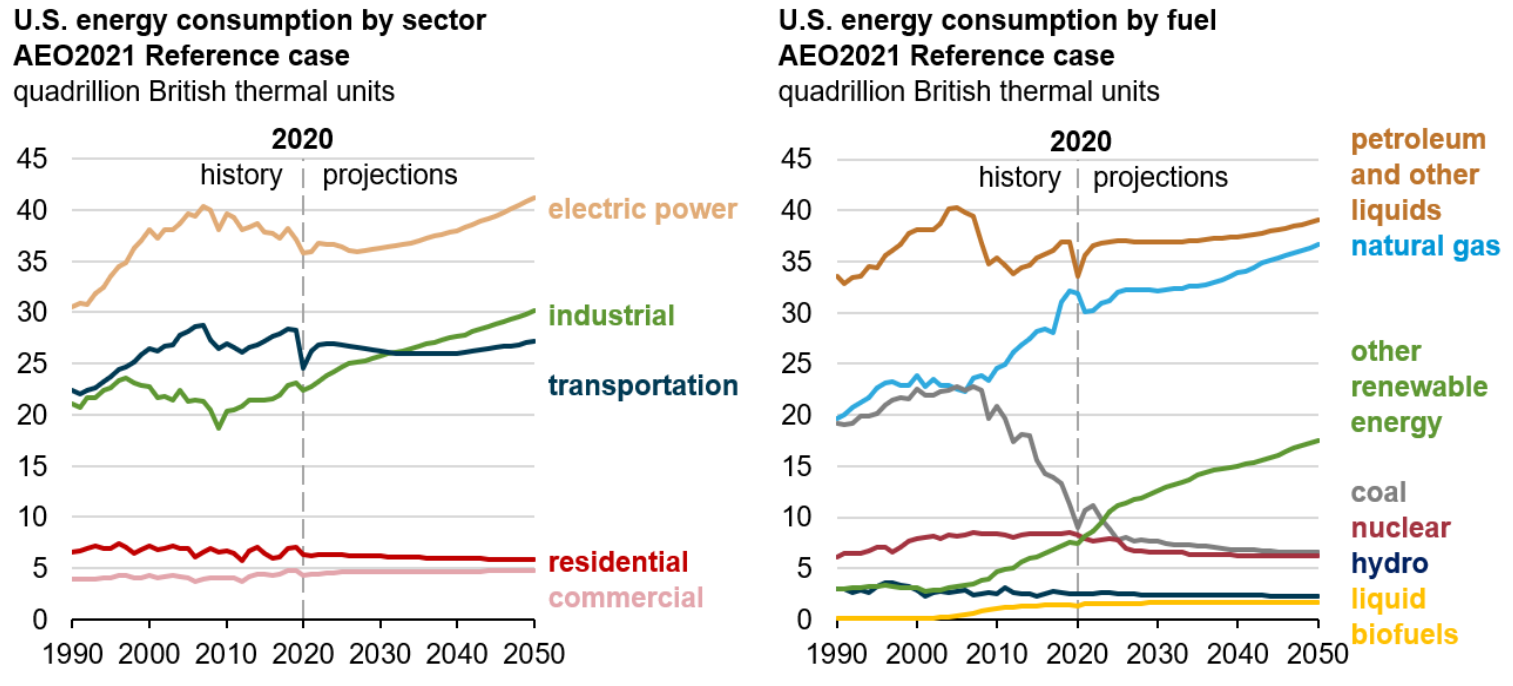
After the necessary conditions are met, focus on high-priority goals such as reducing GHG emissions.

Track 2a: Section D.iv

What non-pipeline alternatives should be considered?

Consider Growing Energy Needs

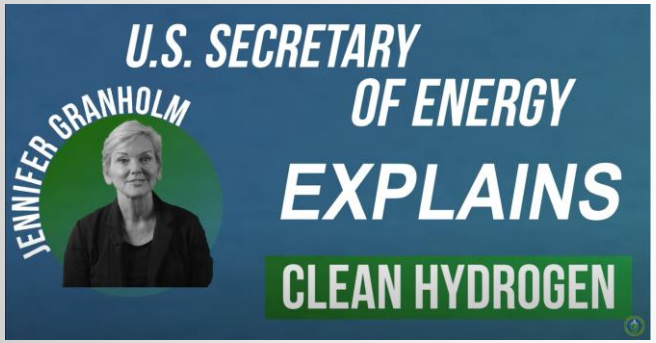
- Overall energy needs will continue to increase, alongside increasing high-impact events.
- Southwest Gas recommends the Commission fortify, optimize, and advance the gas infrastructure to partner with renewables to serve growing energy needs and reduce GHG emissions.



U.S. Energy Information Administration - Annual Energy Outlook 2021

Consider Growing Energy Needs

- There are exciting advancements on the horizon for both molecules and electrons. Be prepared to seize opportunities for both energy types to find the balance for the Commission's mission to meet customers' needs and California's GHG emission reduction goals.
- Multiple pathways to decarbonize natural gas, and further reduce emissions in gas infrastructure:



  - Upcoming advances in gas energy such as Renewable Natural Gas, Carbon Capture Natural Gas, and Hydrogen.
  - Department of Energy's Hydrogen Shot: 80% reduction in clean hydrogen costs in one decade. (https://www.energy.gov/eere/fuelcells/hydrogen-shot)
  - Point-Source Carbon Capture: Can Filter At Least 95% of Emissions from Natural Gas and Industrial Operations. (https://www.energy.gov/articles/doe-invests-45-million-decarbonize-natural-gas-power-and-industrial-sectors-using-carbon)

- Energy Secretary Granholm: "Decarbonization is decarbonization."

Track 2a: Section D.v

How should the cost of non-pipeline alternatives be compared to the cost of gas pipeline replacement or repair?

Comparing Energy Alternatives

The following should be considered when comparing non-pipeline alternatives to the cost of gas pipeline replacement or repair:

- Operations & Maintenance:
  - Costs for non-pipeline alternatives with capacity and reliability to transport and store energy equivalent to gas infrastructure.
  - Infrastructure management must remain a priority, for all utilities and all energy types.
- Life Cycle Analysis:
  - Non-pipeline alternative lifecycles should be compared. For example:
    - Useful and efficient solar panel life is 25-30 years
    - Useful and efficient wind turbine life is 20 years
    - Useful and efficient large battery storage life is 5-10 years
    - Look at each energy type in a holistic manner

Track 2a: Section D.vi

If the Commission determines that a distribution pipeline should be decommissioned, what consideration should be given to customers who do not wish to stop their gas service?

Consideration of Retiring an Asset

When considering if a distribution pipeline should be decommissioned, consideration given to customers who want to keep gas service must include:

- Prudency: Southwest Gas, as part of our regular system evaluations, at times makes determinations to retire pipeline systems as we find more efficient ways to operate our system.
- User Choice: 91% of Southwest Gas customers prefer the choice of natural gas. *(OH Predictive Insights 2019)*
- Affordability: Energy delivered by gas infrastructure is consistently less expensive than alternatives.
- System resiliency, energy availability: Gas infrastructure resiliency in high-impact events.
- Transparent communication and education about impacts of change and available resources.

Advancing Gas Infrastructure - Conclusion

Southwest Gas supports efforts to reduce GHG emissions and believes the gas pipeline system is integral in a balanced energy portfolio for the Commission's mission to meet customers' needs and California's GHG emission reduction goals.

The Commission should strive to build and leverage a gas infrastructure portfolio that is:

- **Fortified - prioritizes safety, reliability, affordability, and resiliency** for current customer customers and future growth.
- **Optimized - implements technology and processes** that improve system efficiency to reduce GHG emissions.
- **Advanced - embraces technological development in gas energy** expected to significantly reduce GHG emissions, while enhancing safety, reliability, affordability, and resiliency.

Sam Grandlienard

General Manager/Operations

Southwest Gas Corporation

sam.grandlienard@swgas.com

760-951-4024






Long Term Gas Planning
R.20-01-007
Track 2
Workshop 1

ABIGAIL SOLIS

SUSTAINABLE ENERGY SOLUTIONS

JANUARY 10, 2022

Self-Help Enterprises

Established in 1965, Self-Help Enterprises is a nationally recognized community development and affordable housing organization.

Our mission is to work together with low-income families to build and sustain healthy communities.

Our team has provided technical assistance and project management for infrastructure improvement projects to more than 200 small communities.

We have facilitated hundreds of meetings, trainings, and educational workshops with residents in small, disadvantaged communities.

We are committed to building the capacity of highly effective community leaders.

A Few of Our Projects

San Joaquin Valley Pilot Proceeding. Decision authorized pilot projects to provide free electrification measures to customers in eleven small, underserved communities in the SJV, residents do not have access to gas service and rely on propane or wood burning for heating purposes.

Community Energy Navigator (CEN) Program Manager. Community leaders and CBO's are the liaison between the SJV Pilot PA's and project participants. CENs provide robust community engagement, education and support to pilot participants.

Sustainable Energy Localized Futures, EPIC. We are collecting community and household level energy usage data to analyze feasible options and future development of community led energy solutions.

SOMAH San Joaquin Valley CBO. We provide outreach, engagement and education to property owners and tenants for the Solar on Multi-family Affordable Housing Program.

This is our opportunity to create resilient, healthy neighborhoods

What community characteristics should be considered?

Historic disinvestment in DAC's.

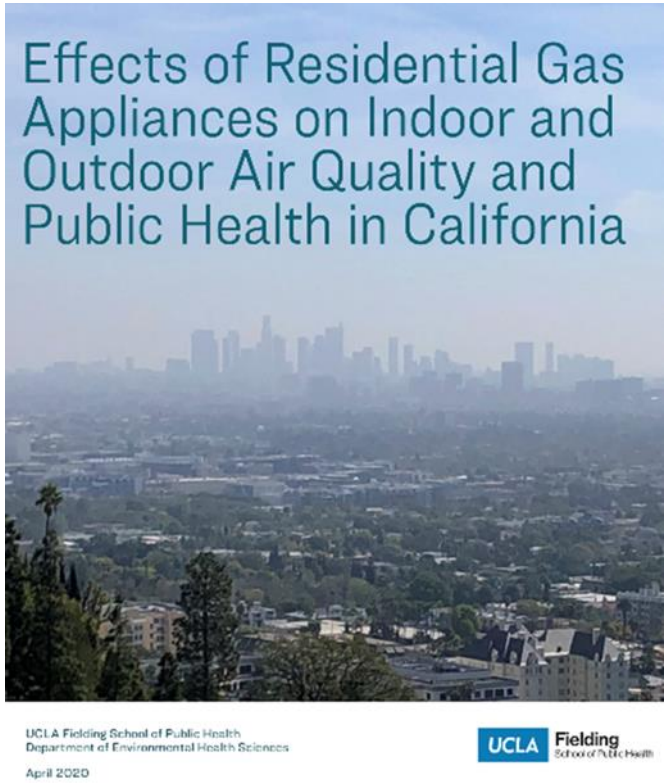
Fewer DAC residents participate in existing energy efficiency and renewable energy programs.

Low-income families have higher household energy costs.

Health Impacts

The effects of greenhouse gas emissions disproportionally impact low-income communities and people of color

Disadvantaged communities face negative health impacts such as Asthma, heart disease, valley fever



Low-income communities should benefit from and not be burdened by the transition

Prioritize vulnerable communities
Improve health and safety

Provide household energy cost savings
Provide greenhouse gas reductions

Equitable transition

Update cost effectiveness tests to include health, wellness, GHG reductions, equity.

Self-Help Enterprises

Replace fossil fuels with clean electricity and provide access to renewable energy

Non-pipeline alternatives should include:

1. Building electrification
2. Energy efficiency
3. Renewable energy

Make solar more accessible for low-income communities

Create opportunities for community-wide solutions

Community solar and microgrids

Self-Help Enterprises

Self-Help Enterprises

Learning From the SJV Pilots

Building and maintaining trust is essential to success.

Program barriers create limitations.

Each home is unique, PI flexibility would improve customer satisfaction and increase participation.

Project timeline should consider electric panel and infrastructure upgrades.

Providing appliance education and training will increase adoption of electric appliances.

Additional Lessons Learned

Participants are interested in receiving electric stoves.

Providing the opportunity to experience the new appliances increases the chances of adoption.

SJV Pilot Residents are interested in

1. Renewable Energy
2. Roof Top Solar
3. Battery Storage

Program interest and participation increases as appliance installations occur in communities.

A phased approach is needed.

Plan for initial “Electrification Hesitancy”

What about residents who don’t want to transition away from gas?

We must expect and plan for a phased approach.

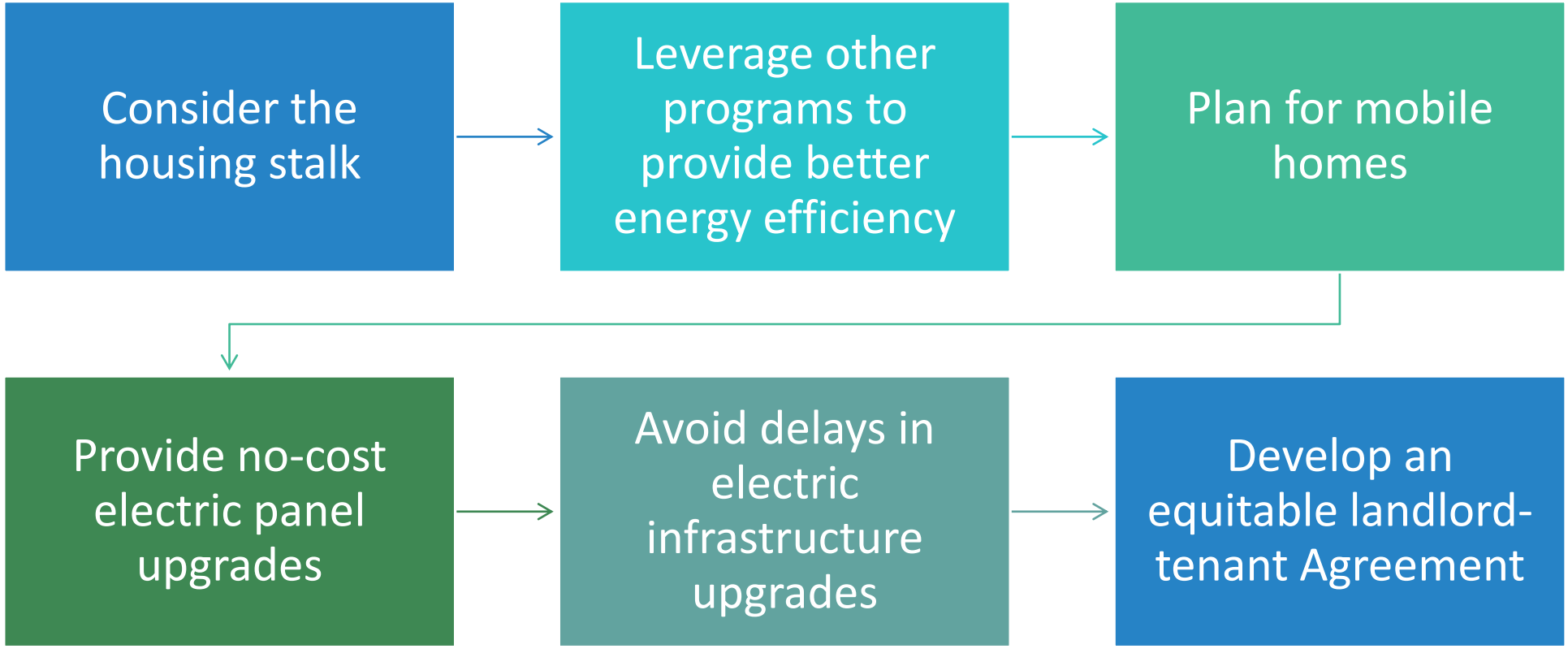
Some residents need additional time to understand and trust new technologies.

Residents have cost concerns.

Every community will have early adopters and those who will “wait and see”.

Programs should be flexible enough to accommodate this.

Electrification Programs Recommendations



Self-Help Enterprises

Community Engagement is critical and should not be left out of the gas system transition strategy

Robust community engagement and education is needed to prepare residents for electrification.

Residents are more likely to support and participate in community led projects.

Use trusted CBO's for messaging and building trust in the process.

Self-Help Enterprises

Final Recommendations

No new gas lines
Start to phase out new gas hook-ups
Prioritize our most vulnerable communities

Develop pilot projects to test recommendations

Collaborate with counties, cities, schools in this process

Self-Help Enterprises

Renewable Natural Gas:

Relationship to Long-term Gas System Planning

Sam Wade
Coalition for Renewable Natural Gas
Director of Public Policy
Presented to CPUC R.20-01-007 Track 2 Workshop 1: Gas Infrastructure
January 10, 2022

About the RNG Coalition

- The leading advocacy and education voice for RNG in North America
- We advocate for the sustainable development, deployment and utilization of renewable natural gas so that present and future generations will have access to domestic, renewable, clean fuel and energy
- RNG developers, marketers, financiers, technology providers, consultants, utilities and labor coming together
- 98%+ of the RNG supply in North America

RNG Coalition LEADERSHIP Members

Not all pictured, for a full list see: https://www.rngcoalition.com/coalitionmembers

RNG Coalition GENERAL Members

Not all pictured, for a full list see: https://www.rngcoalition.com/coalitionmembers

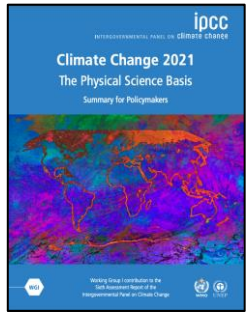
RNG Coalition ACADEMIC Members

Not all pictured, for a full list see: https://www.rngcoalition.com/coalitionmembers

What is RNG?

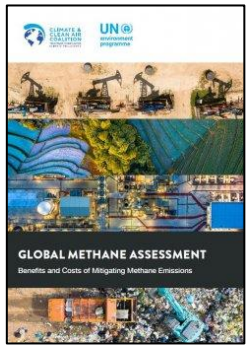

Collect. Capture.
Clean. Consume.
Collect
organic waste
from various
sources
Capture
greenhouse gases
from organic waste
Clean and condition
biogas for use in
existing infrastructure
and appliances
Comsume
in homes,
businesses and
transportation
Greenhouse gases
are captured and
converted into
renewable natural gas
that can be used in any
natural gas application
#RNG

Abating Methane from Organic Wastes Remains a Critical Climate Strategy, both in Globally and in the US



"Sustained methane mitigation, wherever it occurs, stands out as an option that combines near- and long-term gains on surface temperature and leads to air quality benefits by reducing surface ozone levels globally.

For example, some short-term 'win-win' policies that simultaneously improve air quality and limit climate change include the implementation of energy efficiency measures, methane capture and recovery from solid waste management and oil and gas industry…"

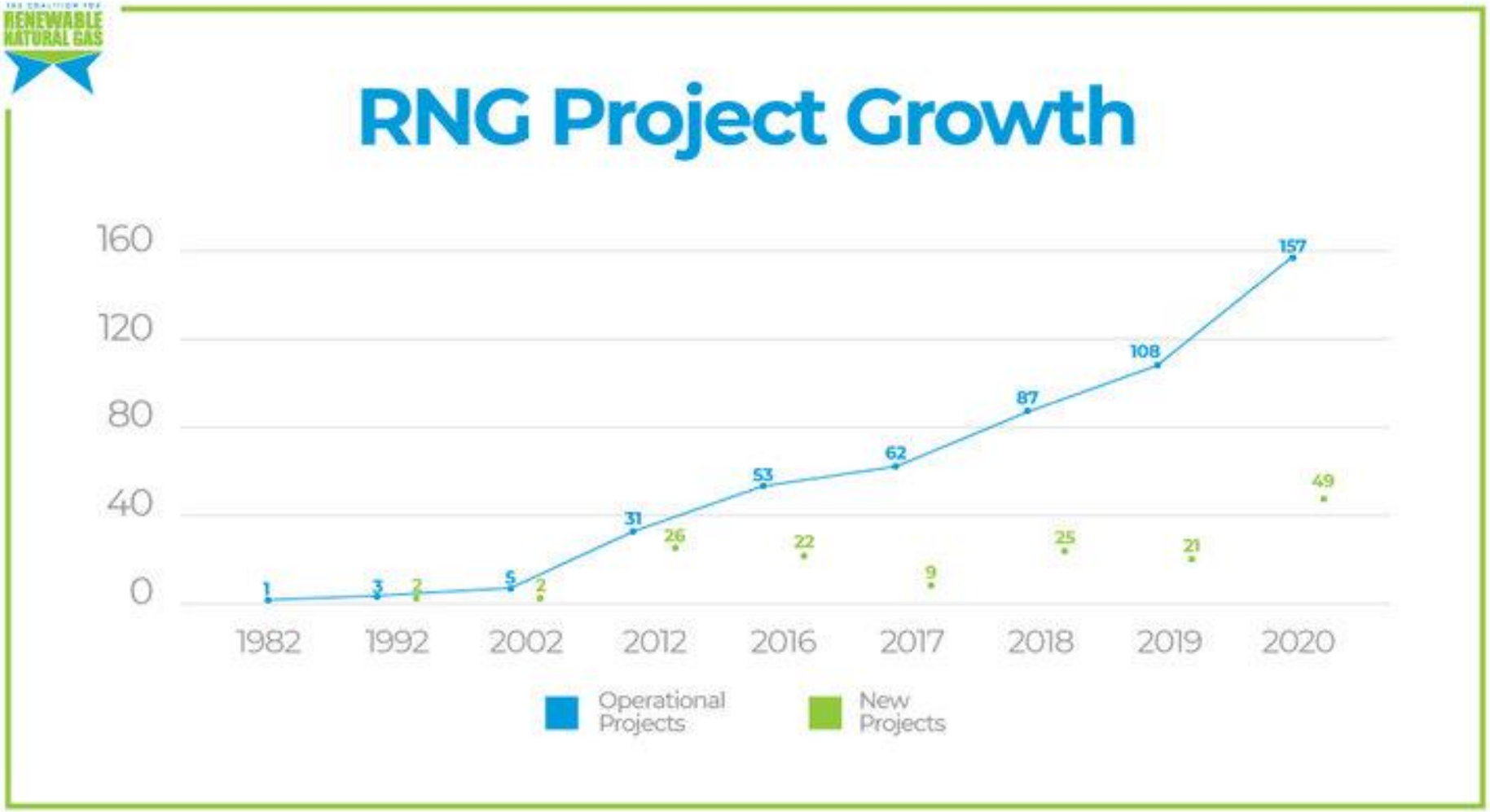


"Reducing human-caused methane emissions is one of the most cost-effective strategies to rapidly reduce the rate of warming and contribute significantly to global efforts to limit temperature rise to 1.5°C."

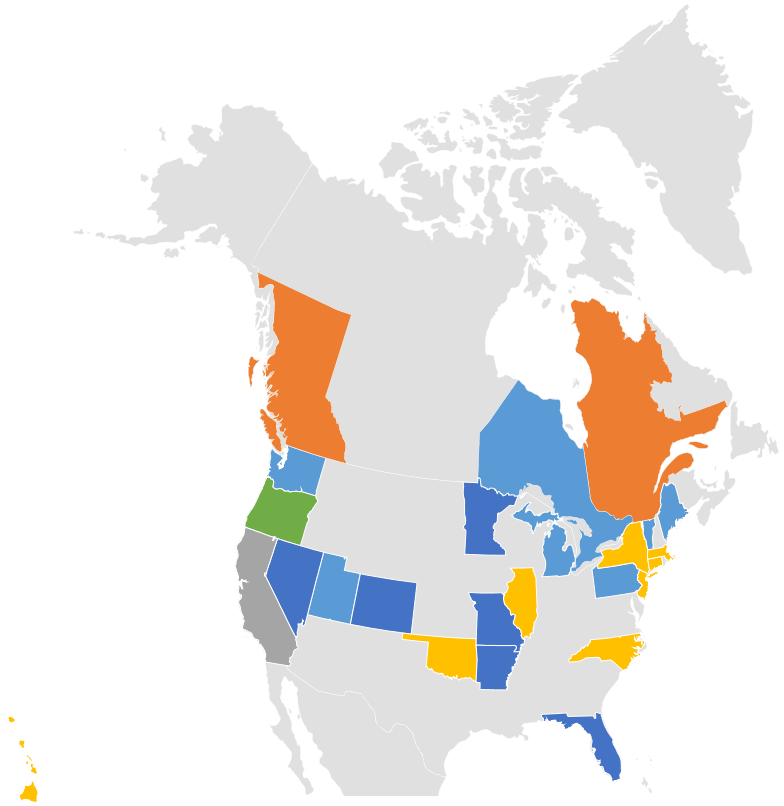
"Countries joining the Global Methane Pledge commit to a collective goal of reducing global methane emissions by at least 30 percent from 2020 levels by 2030 and moving towards using best available inventory methodologies to quantify methane emissions, with a particular focus on high emission sources.

"Rapidly reducing methane emissions is complementary to action on carbon dioxide and other greenhouse gases, and is regarded as the single most effective strategy to reduce global warming in the near term and keep the goal of limiting warming to 1.5 degrees Celsius within reach."

https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter_06.pdf
https://www.ccacoalition.org/en/resources/global-methane-assessment-full-report
https://www.whitehouse.gov/briefing-room/statements-releases/2021/09/18/joint-us-eu-press-release-on-the-global-methane-pledge


RNG Project Growth
160
120
80
40
0
1982
1992
2002
2012
2016
2017
2018
2019
2020
1
3
7
5
31
53
62
87
108
157
2
26
22
9
25
21
49
Operational Projects
New Projects

RNG Procurement by Gas Utilities Growing Across North America



- Leg Passed, Regulatory Development (All Customers)
- In Place (All Customers and Opt-in)
- Leg Passed, Regulatory Development Underway (All Customers and Opt-in)
- Proposed Legislation or Utility Filing
- In Place (Opt-in Customers)
- In Place (All Customers)

California Should Articulate a Multi-Phase Strategy for Use of RNG Resource

Near-Term: Reduce Methane Emissions

- Build the RNG projects immediately to reduce methane from organic waste streams as fast as possible
- Expand LCFS-like incentives to other sectors
- Reach 2030 SCLP reduction goals
- Begin to decarbonize the gas system

Mid-Term: Begin to Prioritize RNG Use in Hard to Decarbonize Sectors

- RNG projects that are pipeline injected offer a flexible resource that can be sent to the sectors that most need it over time (i.e., those that prove to be hard to decarbonize in other ways)
- This choice becomes more important when remaining gas demand is closer to RNG supply

Long-Term: Manage Transition to H_2 with CCS

- When hydrogen transport infrastructure develops, consider transitioning bio feedstocks to H_2 molecule as the energy carrier (especially for non-AD feedstocks)
- Couple H_2 production with Carbon Capture and Sequestration to get carbon negative outcomes

Helpful Recent Policy Signals in CA for RNG

- Use of renewable gases is necessary to reach California's GHG goals
  - Society's waste streams create significant methane (a critical short-lived climate pollutant) that must be dealt with in some fashion.
  - Using methane from organic wastes productively, rather than flaring it, both reduces direct emissions of methane from the waste and ag sectors and displaces fossil fuel carbon dioxide emissions in the end use sectors.
  - RNG is complementary to other methods to reduce GHGs through gas demand reduction, such as efficiency and electrification. (Support for RNG will not impede electrification efforts.)
  - When coupled with carbon capture and hydrogen production, renewable gases from these feedstocks can be carbon negative.
- Implementation of a Renewable Gas Standard[1]—in line with SB 1440—is a critical tool to decarbonize remaining demand for energy services currently provided by fossil gas
  - Incent utility procurement of biomethane in the short term and hydrogen in the medium to long term.
  - Lifecycle GHG accounting will create the proper incentives to reduce emissions.
  - Let the end use sector for pipeline-connected RNG shift over time.
  - Provide similar policy support to incent RG use across both core and non-core customers (closely monitor relationship to power gen uses).

[1] Rulemaking 13-02-008, Proposed Decision of Commissioner Rechtschaffen Implementing Senate Bill 1440 Biomethane Procurement Program https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M436/K700/436700096.PDF

Relationship Between RNG Growth and Integrated Gas Planning

- A long-run integrated resource plan for gas is an essential step to manage system decarbonization
  - RNG project developers need clear insight as to where their projects should be constructed and interconnected
  - Policymakers' preferred end use energy carrier (methane, hydrogen, electricity, etc.) is critical for project developers to understand. This is more important than determining long-run end use sector.
- Need to quantify the near- and long-term geographic availability of RNG potential on an updating basis
  - State (CEC IEPR) and utility gas supply forecasting methods should adapt to include RNG supply.
  - Initial "pruning" of the system should not be conducted near likely locations of RNG supply.
  - RNG supply will be geographically distributed and usually closer to CA demand centers than conventional gas supply.
- Investment in existing/new infrastructure should be future-proofed to fit in a net-zero GHG economy
- Ensure a just transition for gas workforce
  - Existing workforce has skills required in the RNG industry.

RNG Relationship to Specific Track 2 Question d in R.20-01-007

- Question d: What criteria should the Commission use to determine whether aging distribution infrastructure should be repaired or replaced when a gas utility requests ratepayer funds?
- i. What pipeline-related characteristics should be considered when determining whether to replace distribution infrastructure (e.g., downstream impacts, pipeline's role in serving industrial (hard to electrify) load, type of customers served, customer density, age, safety condition, pipe material such as Aldyl-A)?
  - Hard to electrify load needs low-GHG solutions like RNG. State's GHG framework must continue to be designed to prevent industrial activity shifting out of state.
  - Replacement of gas infrastructure should be done with materials compatible with hydrogen, where reasonable.
- ii. What community characteristics, such as designation as a disadvantaged community (DAC), should be considered?
  - Regional availability of RNG (including future potential) should be considered. Determining likely locations for RNG supply should be relatively straightforward based on the distribution of organic wastes.
  - RNG Coalition supports EJ goals. Defer to other stakeholders on prioritization based on DAC status.
- iii. What goals should be considered when using these characteristics (e.g., cost savings, pipeline safety, net greenhouse gas reductions, environmental justice)?
  - Net lifecycle GHG reduction and state's organic waste diversion goals should be considered.

RNG Relationship to Specific Track 2 Question d in R.20-01-007 (continued)

- iv. What non-pipeline alternatives should be considered?
  - Discussions[1] in other jurisdictions treat on-system RNG a non-pipeline alternative (i.e., when the goal is avoiding new interstate pipelines).
  - Trucking RNG (or generating alternative energy carriers, including electricity) can be viable when pipeline infrastructure not locally available. LCA of non-pipeline alternatives for moving RNG, including trucking and electric gen, are often a less efficient (higher GHG emitting per unit of useful energy) when compared to use of pipes. (Can be mitigated if trucks use low carbon fuels or if power gen equipment is highly efficient.)
- v. How should the cost of non-pipeline alternatives be compared to the cost of gas pipeline replacement or repair? For example, are there avoided operations and maintenance (O&M) and infrastructure replacement costs for retiring distribution pipelines that could be estimated and incorporated into cost-effectiveness analysis?
  - Recent ERG/CPUC Whitepaper[2] explains modular benefits of non-pipe alternatives (benefit from a lower cost of capital while preserving the flexibility to not make investments if demand patterns change, thereby also mitigating the risk of stranded costs).
  - RNG trucking requires less up-front capital but likely is higher overall cost (levelized per therm over the life of the project), if RNG production asset is expected to be long-lived.
- vii. If the Commission determines that a distribution pipeline should be decommissioned, what consideration should be given to customers who do not wish to stop their gas service?
  - Consider potential for compensation/buyouts for remaining customers who still need gas (allow them to cover incremental costs of receiving trucked RNG or other solutions).
  - Prevent economic activity from leaving the state and pushing emissions to another jurisdiction.

[1]Narbaitz, P. & Sloan, M. (2019). What can we learn from New York's non-pipeline solutions ruling? *ICF Insights*. At: https://www.icf.com/insights/energy/non-pipeline-solutions

[2]Brockway, A. (2021). Gas Planning and Reliability in California. CPUC Whitepaper. At: https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/natural-gas/long-term-gas-planning-oir/gasplanning_final_2021-12-27.pdf

Speaker Info

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SUMMARY

- Focus on subparts i, iv and vi of Question d
- Use data from PG&E GRC to highlight current criteria for D gas pipeline replacement and repair
- Preliminary Conclusions:
  - Current criteria for repairs (safety and GHG emission reduction) are appropriate in the short term, and repairs do not increase the stranded cost problem
  - Current criteria for replacement is safety and pipe material
  - The key problem is not criteria for replacement, but doing proper safety risk modeling to prevent unnecessary replacements that increase future stranded costs
  - Regarding NPAs, I suggest that the subpart “vi” – how costs should be compared – is not the right question to ask, as we know how to do cost-effectiveness comparisons. Rather, we first need to address how NPAs can be **actual alternatives** that reduce the need to replace or repair **distribution** pipe

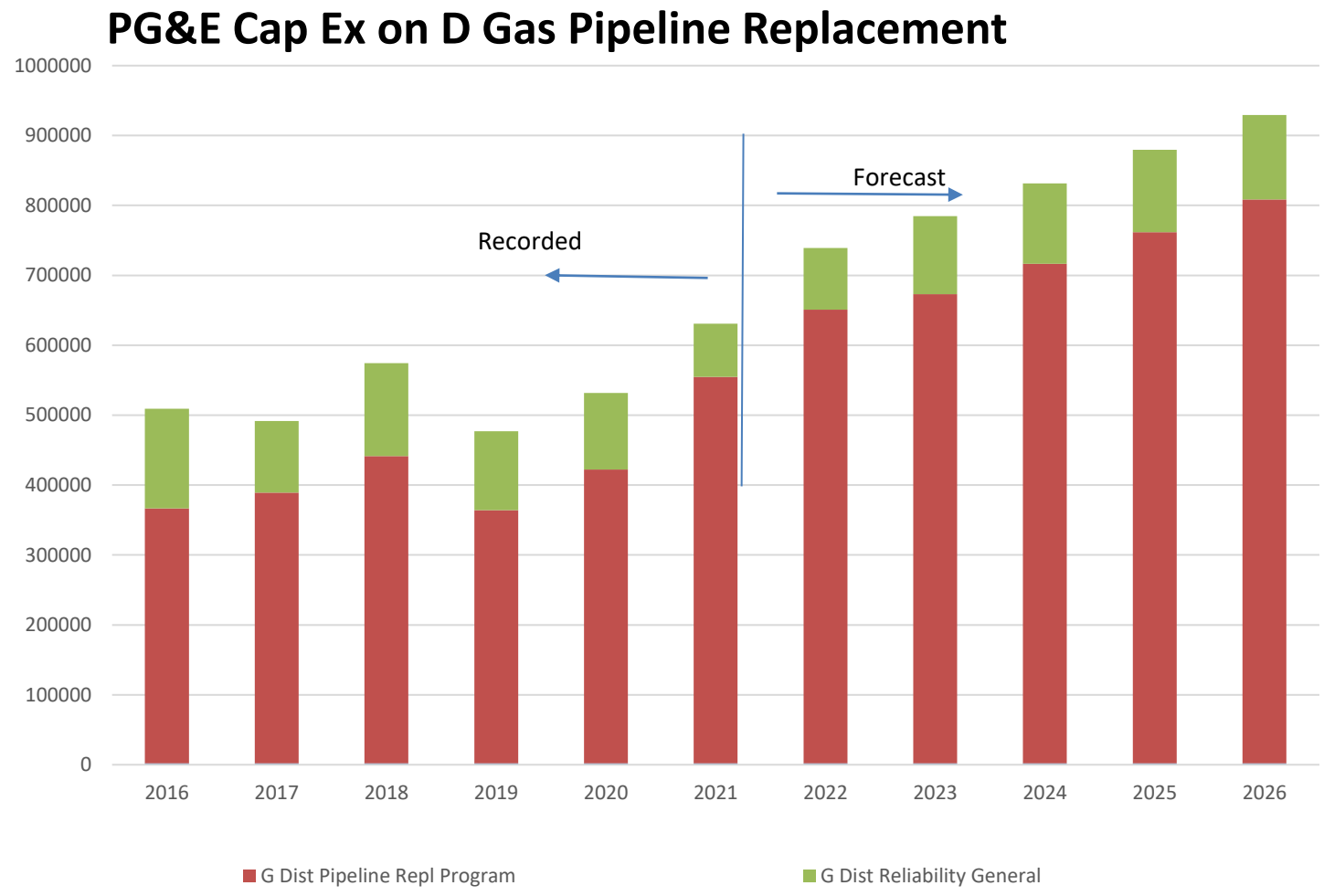
PG&E Spending on D Pipe Repair

- Repair expenses increasing from $105 mm in 2020 to $132 mm in 2023
  - Repairs driven by leaks - leaking mains, services and meters
  - Increase mostly due to repairs of non-hazardous meter set leaks to reduce methane leakage
- Capital expenditures due to repair (ie. replacement) of leaking services and mains (>100 ft) increasing from about $20 mm in 2020 to about $33mm in 2026
  - Replacing leaking mains is about $6 mm per year

CONCLUSION RE CRITERIA AND GOALS FOR PIPE REPAIR

- Repairs are primarily expense, so increase current gas rates but do not significantly increase stranded cost problem
- Criteria and goals based on safety (repairing hazardous leaks) appropriate
- Criteria and goals based on methane leak reduction (repairing non-hazardous leaks) may be appropriate, though lack of critical data or analysis that the reduction in GHG emissions from meter sets is cost-effective

R.20-01-007
Track 2 – Workshop 1 – Jan. 10, 2022



TURN
THE UTILITY REFORM NETWORK
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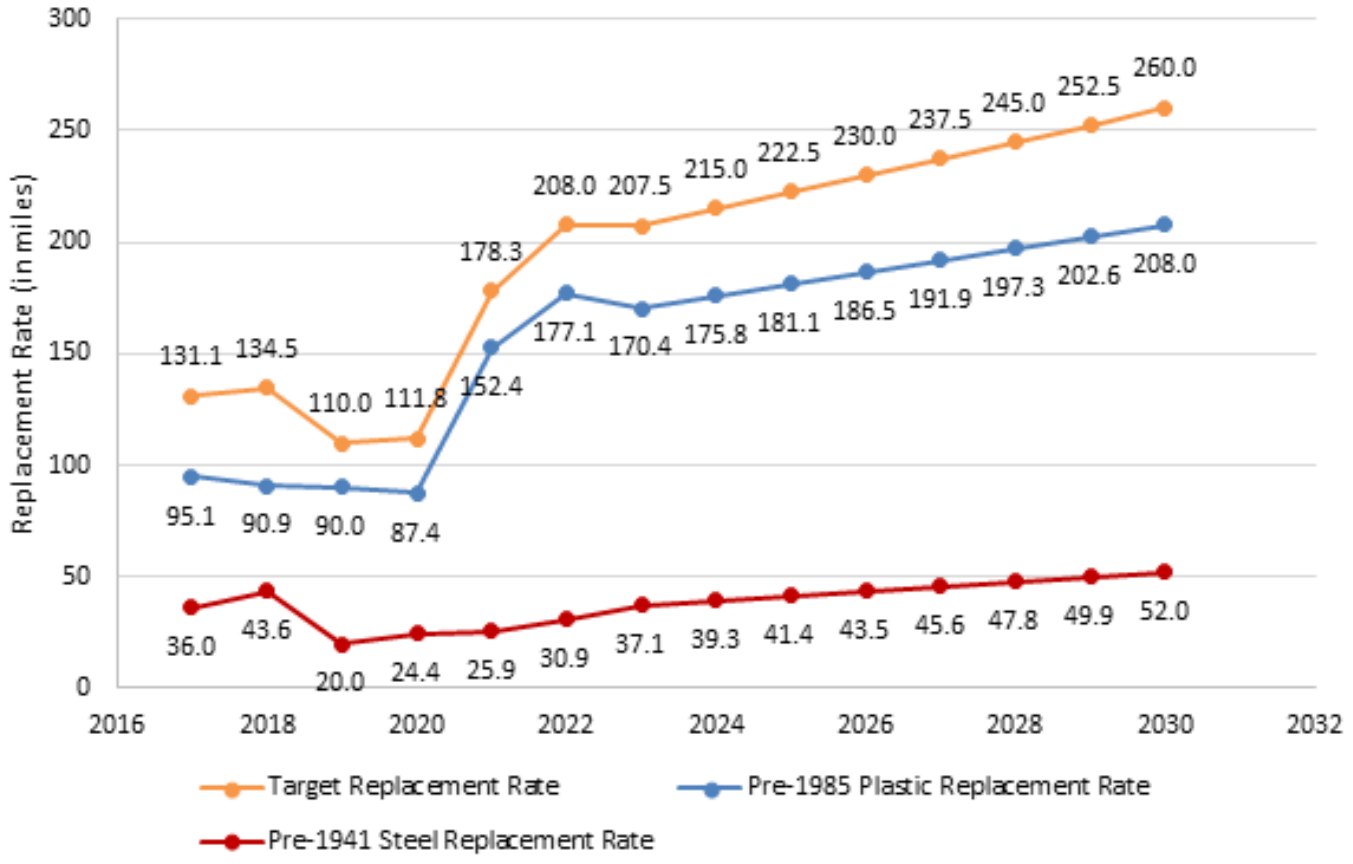
PG&E D Gas Pipeline Replacement



CRITERIA AND GOALS FOR PIPE REPLACEMENT

- D pipeline replacement is a discretionary program, driven by utility safety risk analyses
- PG&E primarily focused on pipe material (Aldyl-A) and age (pre 1985)
  - Uses risk ranking model to prioritize based on "methodology that considers **leak history, pipe age, material type, ground temperature, diameter, operating pressure, and population proximity**."
- PG&E used risk model to ranking Aldyl-A based on risk of pipeline failure (RoF = LoF * CoF)

CONCLUSIONS RE. CRITERIA AND GOALS FOR PIPE REPLACEMENT

1. Current criteria for pre-emptive replacement – SAFETY – is generally appropriate. Do not see need for using different criteria for pre-emptive replacement.

CONCLUSIONS RE. CRITERIA AND GOALS FOR PIPE REPLACEMENT

2. Key problem is not ”criteria,” but proper goal to determine **pace** of pre-emptive replacement
   a) PG&E has ** miles of Aldyl-A pipeline, and has adopted a “strategic objective” of replacing 208 miles per year by 2030 in order to replace approx. 6,600 miles of per-1985 plastic pipeline by 2053
   b) What is the rationale for this timeline? What is safety risk?
   c) Should balance safety goal with goal of reducing stranded costs.
   d) HOW? Better data and risk prioritization to focus replacement only on pipe segments that pose an actual risk of gas loss and ignition!

NON-PIPELINE ALTERNATIVES

- NPAs – demand response or building electrification
- Question d-vi asks how should ”costs” be compared?
- My suggestion is that this question is premature.
  - Cost comparison can be done by incorporating all benefits and costs with proper net present value analysis. The Commission has great expertise at such comparisons.
  - The real challenge is to determine how can building electrification be done so it is **an actual alternative,** meaning it actually reduces pipeline repair or replace costs

NON-PIPELINE ALTERNATIVES

- How to electrify as an alternative to repair?
  - Must select portion of system that has very high leak rate and is scheduled for leak repairs
  - Must electrify sufficient contiguous geographic area to eliminate portions of gas D system. Reduced demand does not result in reduced leak repair if pipelines still active.
  - Customer acceptance major issue
- How to electrify as an alternative to replace?
  - Must select portion based on presence of pipe with similar characteristics.
  - Again, must electrify sufficient geographic area to eliminate entire portion of gas D system.

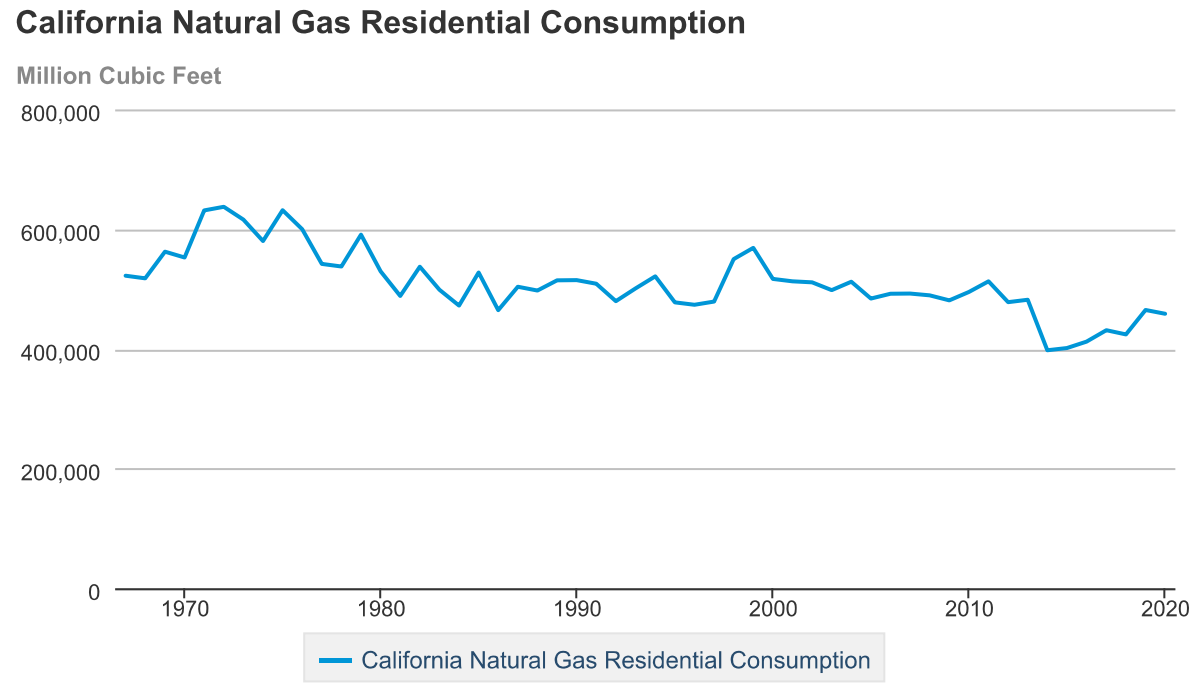
NON-PIPELINE ALTERNATIVES

– Should first stop growing the problem!

- The Commission has taken a very positive step by addressing the issue of gas line extension allowances in Phase 3 of R.20-01-007
- But utilities continue to spend some capital on new customer hook-ups, not driven by total demand

R.20-01-007
Track 2 – Workshop 1 – Jan. 10, 2022

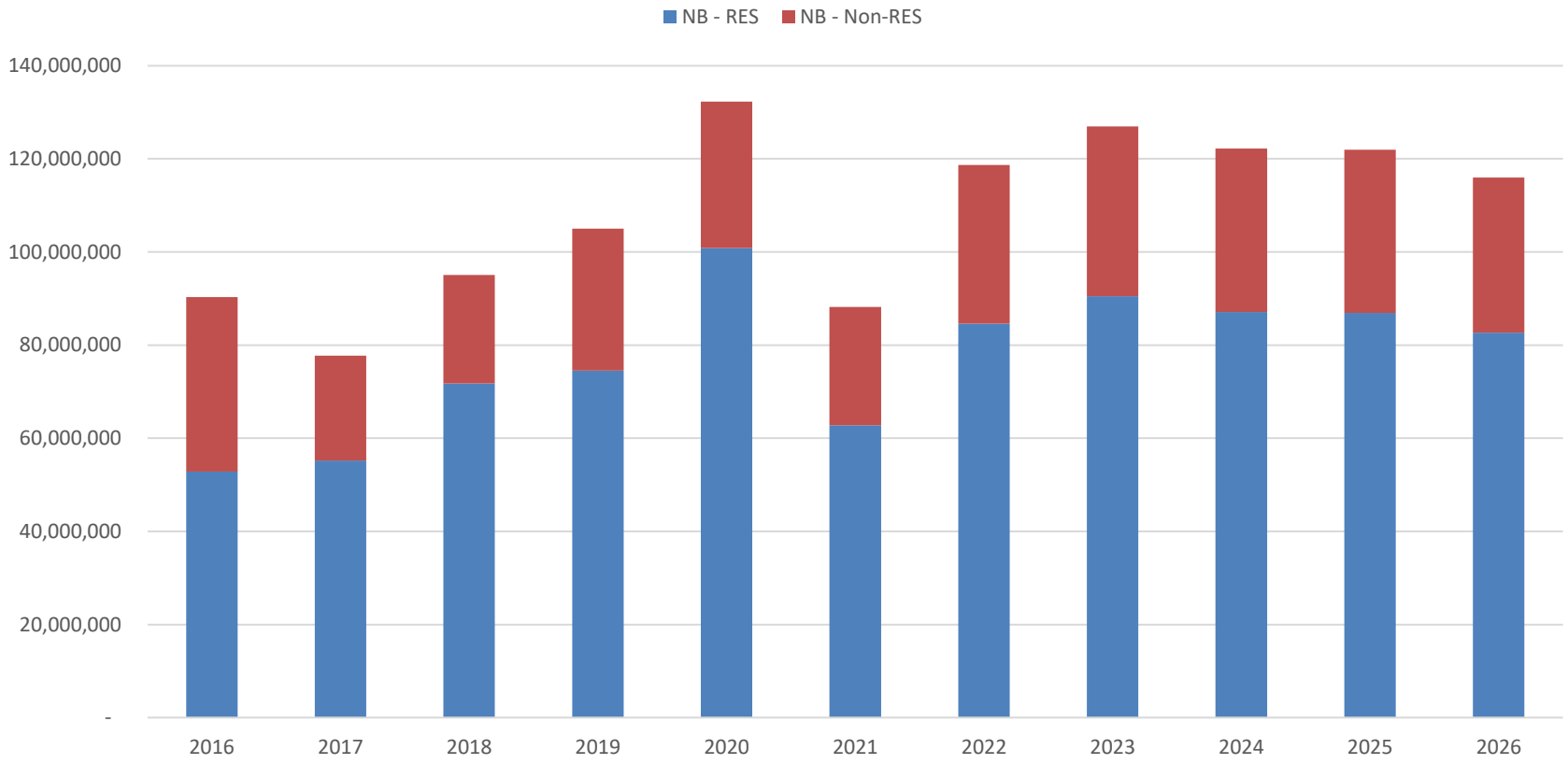
RESIDENTIAL GAS DEMAND



eia Source: U.S. Energy Information Administration

R.20-01-007
Track 2 – Workshop 1 – Jan. 10, 2022

PG&E Cap Ex on New Customer Connections



NON-PIPELINE ALTERNATIVES

- Should consider major changes to prevent new gas hook-ups.
  - State law. Local ordinances. Building codes.
- Should consider systemic change (state law) to electrify existing buildings upon sale.

Accelerated Depreciation?

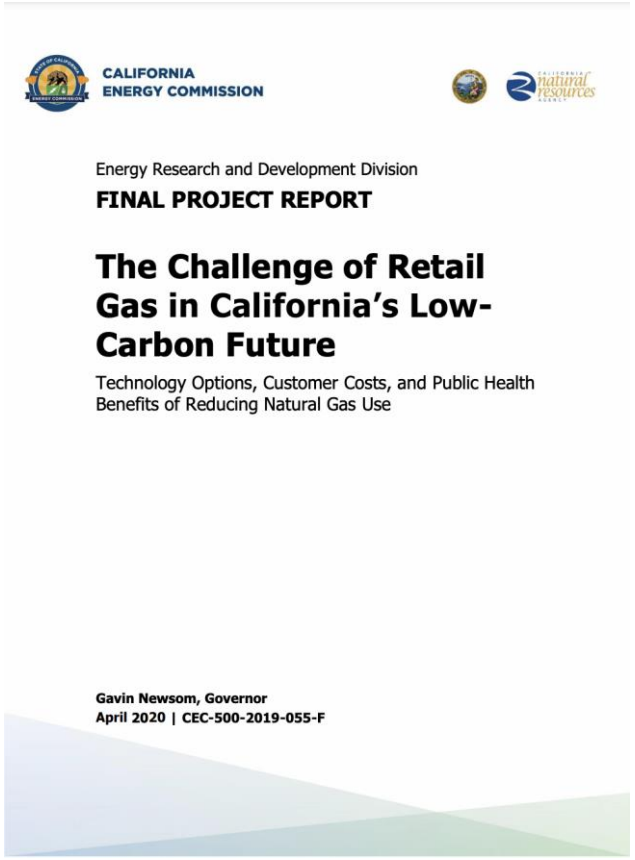
– PG&E is proposing to increase pipeline capital investments, but is also proposing to use accelerated depreciation in this rate case to increase current gas rates and reduce future stranded costs.


GRIDWORKS

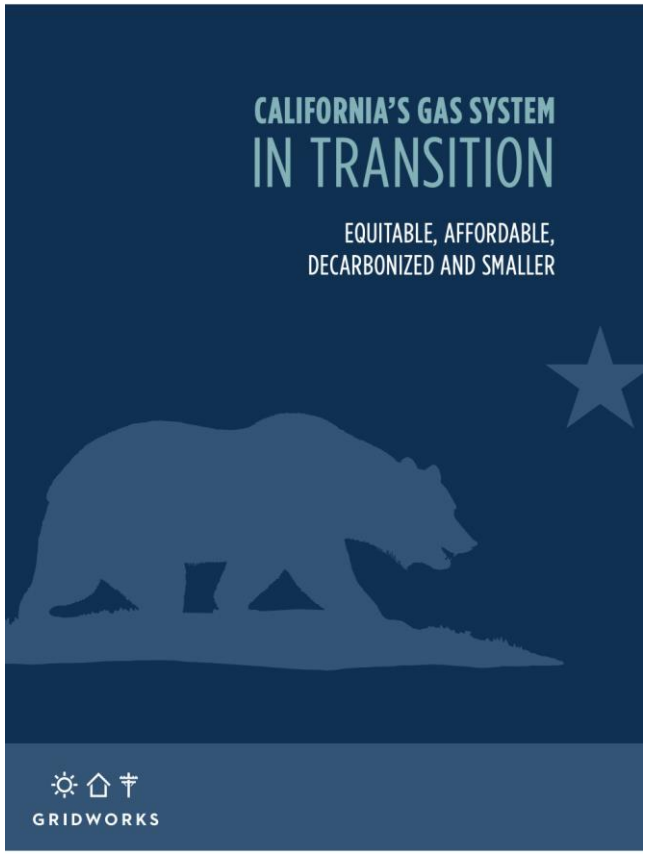
Decarbonization of our economy is within reach, and more important than ever.

Gridworks convenes, educates, and empowers stakeholders working to decarbonize our economy.

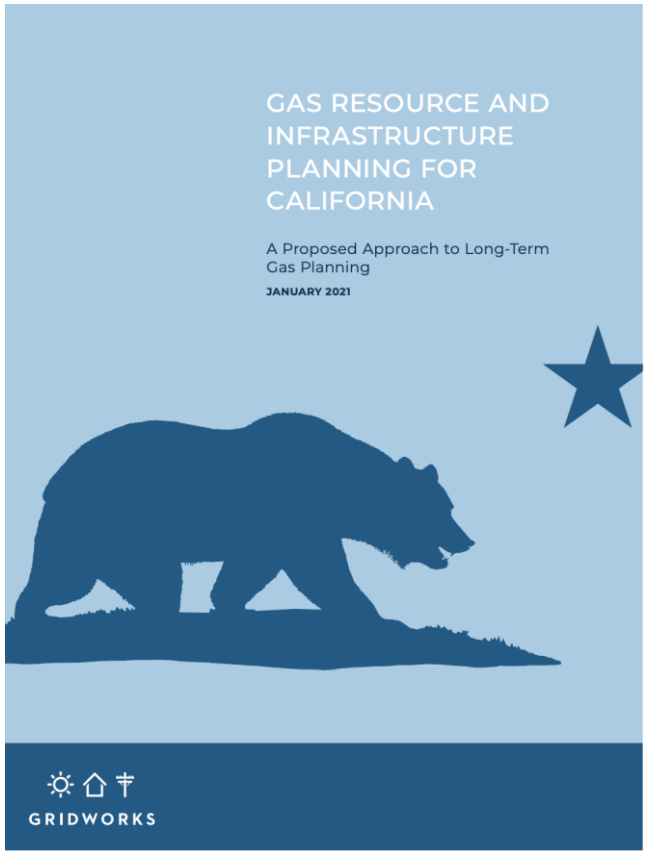
Background



Report Link



Report Link



Report Link

CEC Project: Tactical Gas Decommissioning

- Create a framework for evaluating and characterizing gas decommissioning opportunities within PG&E and EBCE's shared service territory
- Engage local communities and identify needs with respect to participating in gas decommissioning and targeted electrification pilots
- Recommend three pilot sites for targeted gas decommissioning, including one in a disadvantaged community
- Produce deployment plans for each pilot site, indicating how to implement targeted decommissioning and electrification in those areas
- Identify existing data sources as well as data needs
- Identify regulatory and/or policy barriers as well as potential mitigations

Benefits of moving from gas to electric appliances

- It makes your home more efficient
  The efficiency of electric appliances has improved. Now they are 3-5 times as efficient as their gas counterparts. This means that they use less energy.
- It can reduce your energy bill
  Because new electric appliances use less energy. Switching from gas to electric appliances can save you money on your monthly energy bill.
- It can improve indoor air quality and safety
  Replacing appliances that run on natural gas with ones that run on electric can improve indoor air quality. This is done by eliminating the unhealthy emissions that gas appliances put out. Gas appliances need to be regularly inspected and maintained to make sure that they are not causing dangerous exposure to carbon monoxide.

Source: PG&E Electrification Website

Source: CPUC SJV DAC Pilot Presentation

HOW CAN WE HELP?

CLAIRE HALBROOK

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www.gridworks.org

GRIDWORKS


Questions or comments?
Submit questions in the chat or raise your hand

Closing Remarks

- Reminder: Track 2 second workshop on Gas Infrastructure Scoping Memo questions scheduled on January 24.
- Energy Division staff will publish a workshop report in February. Parties will have an opportunity to provide comments on the staff report.
- Thank you!