DOCKETED	
Docket Number:	23-ERDD-02
Project Title:	Gas Research and Development Program
TN #:	255660
Document Title:	DNV Comments - Location-Specific Gas System Decommissioning Workshop
Description:	N/A
Filer:	System
Organization:	DNV
Submitter Role:	Public
Submission Date:	4/12/2024 2:43:48 PM
Docketed Date:	4/12/2024

Comment Received From: DNV
Submitted On: 4/12/2024
Docket Number: 23-ERDD-02

Location-Specific Gas System Decommissioning Workshop

Additional submitted attachment is included below.

Written Response to Location-Specific Gas System Decommissioning Scoping Workshop

DNV and UCLA's California Center for Sustainable Communities, Mindful Decommissioning Team (ref: CEC Project #PIR 22-002)

1. What research on coordinating gas end use changes with safety and hydraulic issues is needed?

Research regarding Safety:

- Assessments of the kinds of risk assessment models used by IOUs for forecasting pipeline failure events and reliability in distribution lines.
- Better understanding and insight into IOUs current existing gas system planning processes and criteria for identifying pipeline abandonment/replacements and relevant information such as key drivers, cost considerations etc. and any other.
- Research into how alternative gas (hydrogen, RNG) may affect safety and reliability of distribution pipelines, other distribution-related facilities, service and in-building lines, and end user applications.
- Research into safe methods for decommissioning including the process of decommissioning itself (flushing and disconnecting lines, removal of facilities, etc.) and research into situations that might require removal (dismantling) or backfilling of larger diameter abandoned pipelines (abandon in place). Explore questions of asset ownership post decommissioning and allocation of responsibilities for ongoing maintenance/monitoring of decommissioned lines. If dismantling, explore logistics/options of waste management and disposal of pipeline segments and equipment etc.

Research regarding Hydraulic Issues:

- Determining what process should be followed for making hydraulic models available to researchers at an appropriate update schedule
- Developing methods for assessing hydraulic feasibility of decommissioning activities based on topological and or gas hydraulic network models
- Evaluation of hydraulic models with alternative gases having different hydrodynamic properties and pipeline/connection materials compatibility

2. What research concerning gas transitions in rural or tribal areas is needed? What key considerations should be included? What other locational or sectional categories need attention?

- More comprehensive community impacts/equity data sources that can fill the gaps that publicly available data don't currently fill. Census data is the best we have in terms of publicly available data and firsthand feedback from the Alliance for Tribal Clean Energy indicates that responses to census surveys are not abundant or consistent. Similarly for rural communities and therefore more meaningful community engagement in these areas will support the gaps in data.
- More research on barriers to gas transition due to non-grid fuel usage, willingness, affordability or lack of awareness and need to delve deeper into energy burden factors.
- Study potential impacts (e.g., stranded asset costs etc.) to non-grid fuel usage areas should their surrounding areas transition.
- Study the potential impacts on areas that are identified as disadvantaged, based on equity metrics/screening, and that, at the same time, are surrounded by affluent communities which have the means to transition early. The presumption is that these communities (e.g., North Fair Oaks in the Bay Area and Northridge in SoCal) would face high stranded asset costs.

3. What research on supply/value chains, including decision-making contexts of building owners & homeowners, tenants, contractors, and suppliers would be most useful to support California's energy transitions? Feasible?

- For property owners and developers, there already exist compelling financial arguments for choosing to build all-electric in new construction. The situation is far more complex in terms of the need to retrofit existing buildings. While there are a number of research studies ongoing focused on different barriers to the implementation of fuel-substitution measures within existing buildings, in order for additional research to be effective it needs to be targeted towards the detailed of implementation of specific preferred policy vehicles. For example, if the state plans to regulate combustion appliances out of existence by increasing the stringency of air-emissions requirements, then this specific policy will have specific detailed implications in terms of the decision-making contexts of individuals up and down the supply chain.
- This is a very complicated proposition. One aspect is housing stock and age. When an area is identified as a promising candidate for decommissioning, upgrades to panels etc. need to be considered and if the building is older and has to undergo a number of other upgrades to comply with code and transition to the grid, we need more research on how to address this

supply chain issue. Another issue with older housing is that it may contain lead or asbestos that need remediation. Can this work be coupled with upgrades related with gas transition work? This would require research and analysis of equity indicators related to environmental vulnerability sub-index.

4. Would research providing independent assessment of receptivity to, and barriers for, conversion of gas end uses for different customer niches be useful? If so, what niches are most important (e.g., mobile homes, high or low consumers, low solar potential, particular regions?)

- Yes, definitely for mobile homes, multi-family and renter situations, and all categories mentioned and including rural and tribal regions, niche regions such as disadvantaged areas surrounded by affluent communities, areas with high climate risks, sensitive populations, grid outages etc. Being able to conduct a comprehensive cluster analysis to find trends and patterns and creating case study profiles that can be a source of extrapolation for statewide application.

5. What further research is needed on converting from fossil gas in commercial buildings and facilities? What cases might be especially useful to examine?

- In the Mindful Decommissioning project which this team is presently conducting, a method was introduced for ranking commercial uses of gas by the “readiness” to decommission (e.g. electrify or other alternative technology) different non-residential customer sectors based upon the volume of gas consumed within different end-use classifications. This method could be further elaborated and validated by a more thorough study of end uses and expanded to consider technology readiness for use of hydrogen or renewable natural gas and perform a risk assessment of transitioning which can be used to identify areas for future research.
- In addition to hard technical considerations related to the readiness of alternative fueled end-use technologies – additional research about customer perspectives regarding other obstacles, whether they be real or perceived, associated with implementing fuel substitution measures within different commercial contexts. Work elaborating these “soft” considerations could utilize opinion research methods such as surveys, focus groups, interviews, etc.
- Understand the variability within commercial categories and commercial building types to triage according to customer “personas” of what alternative solutions may work for them (e.g. small independently owned business vs franchises etc.).

6. What additional research on utilizing alternative gases for decarbonization gas use is needed?

- Technoeconomic analyses across the distribution value chain
- Supply chain with respect to alternative gas production, processing and delivery (RECS)
- Education and work force training
- Impact on distribution pipeline degradation and appliance efficiencies on using alternative gases
- What impurities exist in alternative gas streams, their impact on pipeline and appliance integrity, health impacts, and how to manage impurities
- Research to consider how the use of alternative gas may interact with partial decommissioning or just as in intermediate step in the full decommissioning goal.
- If alternative gas is used instead of total gas decommissioning, what lessons can be learned from the current explorations of decommissioning to improve pipeline system planning and data access for long-term decision making that incorporates all stakeholders?
- Policies related to permitting, land use and right-of-way reuse for utilizing or repurposing alternative low-carbon gases like hydrogen and biomethane – possibility of simplifying permit permitting processes to facilitate transition towards cleaner energy future (such as grandfathering)
- RNG potential study- what quantity of MMBTUs are possible to maintain using renewable natural gas and are scalable to produce? How to factor any limitations on supply into gas planning and overall energy portfolio management (e.g. would switching to RNG necessitate some partial gas decommissioning, targeting hard-to-decommission commercial users)?

7. Would research on how gas end use patterns are changing by customer, location, end use be feasible? Useful?

Extremely feasible and useful. Decommissioning and changes to the gas system have high impacts on both commercial and residential customers. A deeper understanding of gas end use patterns will help policy makers to craft targeted and appropriate strategies for supporting customer energy needs while simultaneously advancing the state's decarbonization goals.

This type of research would significantly benefit from a re-evaluation of current data access and aggregation policies, however. Current protocols require that if utility customer consumption data are to be made public, they must be aggregated such that no reporting group contains fewer than 15 customers (100 in residential) and that no individual customer within that group constitute more than 15% of the group's total consumption.

These requirements, which were originally intended to protect customer privacy are now doing significant harm in terms of inhibiting the state's ability to track, analyze, and quantify, detailed changes in energy consumption occurring in response to decarbonization policies and initiatives. In particular, the 15% component of this rule most requires revision, as in practice, it severely inhibits the amount of non-residential customer data that can be publicly disclosed due to the presence of small numbers of commercial customers whose consumption levels are significant outliers relative to that of the general population.

Additional points to consider:

- Perform studies evaluating the changes in demand and gas usage related to climate change (warmer winters, for example).
- Explore what demand change patterns have evolved due to improvements in device & process energy efficiency and/or building insulation, etc.?

8. What additional information synthesis or consolidation would be useful to support research, planning, technology development, and other investments related to long-term decommissioning targets?

- Increased transparency and release of data about gas distribution system assets state-wide. Analogous data sets exist at the level of gas transmission, but for distribution lines, there is a paucity of publicly available data
- Integrated planning tools/decision making tools that combine policy drivers, energy equity and environmental justice factors alongside energy resilience and delivery metrics
- Multi-level analysis tools at both the broad state-planning level but also for detailed study of interconnected energy needs and modes of delivery (gas, alternative gas, electricity, other…)
- Gas system planning relies on the coordinated ability to work with electric system planning, especially when working in geographies that may coincide with multiple IOUs. What policy level changes may be needed to expedite the sharing of information, processes and coordinated decision-making?