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California Energy Commission
Energy Research and Development Division
1516 9th St
Sacramento, CA 95814
Docket Number 21-IEPR-05

RE: Pacific Gas and Electric Company Comments on the Integrated Energy Policy Report (IEPR) Commissioner Workshop on Natural Gas Infrastructure (Docket Number 21-IEPR-05)

Pacific Gas and Electric Company (PG&E) appreciates the opportunity to comment in response to the California Energy Commission (CEC)'s May 20, 2021 IEPR workshop on natural gas infrastructure. PG&E shares the interest of the CEC in ensuring an equitable, affordable, and safe transition to a decarbonized California.

Planning for the future of the natural gas system needs to be a comprehensive effort that incorporates a variety of approaches to achieve the desired outcome. These approaches should include strategic asset decommissioning, zonal electrification, and the inclusion of renewable gases such as renewable natural gas (RNG) and hydrogen.

As the CEC continues to pursue its natural gas research and development (R&D) program initiatives on targeted decommissioning, PG&E offers the following comments related to the work PG&E is currently undertaking:

1- Strategic Asset Decommissioning

The first area that PG&E is exploring is identification of underutilized portions of the gas system. The goal is to eliminate or reduce spend to avoid costs that would otherwise need to be recovered from gas customers. This is accomplished by developing a ratio of the cost to maintain and operate gas distribution assets relative to the revenues generated.

PG&E has completed the first phase of an effort to generate a ratio that will serve as a valuable proxy of cost per revenue for each mile of pipe (miles of pipe is a proxy for cost and demand is a proxy for revenue). This data is available for each hydraulically independent system (HIS) of our distribution network.

Significant progress has been made on phase 2 which will provide a cost per revenue ratio for each HIS using actual gas program expenditures by division and gas facility counts by HIS. These findings will allow

PG&E to identify areas that have a higher likelihood of reducing gas system costs, helping mitigate gas rate increases.

PG&E is also working on methodologies to break very large HIS that have many customers into smaller areas to make planning more manageable.

2- Zonal Electrification

Zonal electrification is the targeted decommissioning of portions of the gas system enabled by the adoption of electric energy technologies for end uses currently served by gas.

Using gas system costs per revenue (discussed above) as a foundational measure, PG&E is also developing a geospatial analysis tool to identify high-potential areas for zonal electrification aimed at reducing gas system costs. The tool aims to synthesize various system conditions and asset characteristics to provide clues about locations that might be worth further review.

PG&E's geospatial gas asset analysis tool combines a wide range of data related to the following:

- *Customer and demographic information:* customer type, energy usage, electrification propensity, etc.
- *Gas system infrastructure and financials:* asset location, type, age, utilization, etc., planned distribution and transmission projects, operation, and maintenance (O&M) costs, etc.
- *Risk factors:* environmental, integrity management, etc.
- *Policy:* areas with all-electric construction ordinances, etc.
- *Electric system capacity*

The data tool then combines and weights combinations of data to assess the electrification potential of locations in the immediate-term (1-5 years), medium-term (5-10 years), and long-term (more than 10 years). High immediate-term potential is generally characterized by areas where expected gas system projects can be avoided. Medium and long-term potential is more focused on electrifying areas with low throughput and where electrification can mitigate future risks.

The tool is currently in use by PG&E teams to identify areas to be examined in more detail for electrification projects.

3- Limits of the Zonal Electrification

The results from these tools are meant to narrow the search for zonal electrification projects. However, those results will need to be validated through a detailed engineering review of the location since there are several important aspects of technical feasibility that cannot be automated.

For example, assessing how retirement of a facility will impact surrounding system integrity requires expert review. In cases where an upcoming gas project is to be avoided, knowledge of the status quo gas project [its scope, cost, additional challenges, etc.] is needed to accurately identify the zonal electrification required to avoid the gas spend.

Finally, retiring gas assets can only occur when all customers relying on those assets have voluntarily stopped gas service. Assessing the number of customers impacted by different gas facility retirement configurations provides clues about the likelihood of achieving that necessary consensus.

4- Renewable Gas, Hydrogen and Firm Electric Generation will Support Decarbonization

As the CEC and utilities develop tools to model trends in the natural gas supply and demand, it is important to incorporate the need for new renewable natural gas and hydrogen supply interconnections in areas where those resources may be available to inject into the system. Keeping the pipelines in service or investing in system improvements to accept zero-carbon and net-negative-carbon gas sources are high priorities, which must be considered in any evaluation of potential pipeline decommissioning.

These new renewable gas supplies are critical to meeting California's decarbonization goals and providing clean firm electric generation to support increased electric supply and grid reliability. Models should also consider the impacts of intermittent renewable electric generation that will require utilization of the gas system for seasonal energy storage.

5- New Industrial and Large Commercial Demand

While building electrification is one aspect impacting the natural gas infrastructure, we are also seeing industrial and large commercial entities switching from high-carbon-intensity fuels (such as coal and petroleum coke) to natural gas to decrease their carbon footprint. As the demand shifts from residential and commercial customers to larger commercial and industrial customers, rate design may require modifications to provide equity and reliability by shifting the cost burden of operations and maintenance to different rate classes who will utilize the system in the future.

PG&E appreciates the opportunity to provide these comments and looks forward to continued collaboration with the CEC on the topic of gas asset decommissioning.

Sincerely,

/s/

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