

**DOCKETED**

<b>Docket Number:</b>	19-ERDD-01
<b>Project Title:</b>	Research Idea Exchange
<b>TN #:</b>	231893
<b>Document Title:</b>	PG&E Comments - on Proposed NG Initiatives FY 20-21
<b>Description:</b>	N/A
<b>Filer:</b>	System
<b>Organization:</b>	PG&E
<b>Submitter Role:</b>	Public
<b>Submission Date:</b>	1/31/2020 4:09:18 PM
<b>Docketed Date:</b>	1/31/2020

*Comment Received From: PG&E*  
*Submitted On: 1/31/2020*  
*Docket Number: 19-ERDD-01*

**PG&E Comments on Proposed NG Initiatives FY 20-21**

*Additional submitted attachment is included below.*

January 31, 2020

**VIA ELECTRONIC FILING**California Energy Commission  
Docket Unit, MS-4  
Re: Docket No. 19-ERDD-01  
1516 Ninth Street  
Sacramento, California 95814-5512**Re: Pacific Gas and Electric Company Comments on Proposed Natural Gas Research Initiatives for Fiscal Year 2020-2021**

Pacific Gas and Electric Company (PG&E) appreciates the opportunity to comment in response to the California Energy Commission (CEC) January 21, 2020 Workshop on Proposed Natural Gas Research Initiatives for Fiscal year 2020-2021. PG&E appreciates the CEC's attention to the need for a strategic plan to guide the future of the natural gas system in California and possess a shared interest in ensuring an equitable, affordable, safe pathway to building decarbonization. PG&E supports the inclusion of hydrogen, renewable natural gas, and biomethane research alongside strategic asset decommissioning, which reflects PG&E's belief that deep decarbonization in the near- and longer-term will require a suite of approaches and technologies. To that end, PG&E submits the following comments:

**Renewable Energy & Advanced Generation**

- Emerging Gas Cleanup and Upgrading for Biomethane
  - PG&E recommends including small scale cleanup process solutions for removing hydrogen sulfide, often found in dairies. The smaller scale processes need to be cost competitive. For example, membranes are a promising solution, however, membranes may be poisoned by hydrogen sulfide. Having an upgrading system that can handle hydrogen sulfide directly would be more cost effective and efficient.
- Questions for Stakeholders
  - Consider adding woody biomass, especially forest waste as a source of biomethane thorough gasification and methanation.
  - Consider pairing emerging methods for removal of siloxane with the technology development for an online siloxane analyzer. Specifically, the online analyzer could be installed at an upgrading site as a field test. The data can be compared to traditional methods of siloxane analysis.
  - Geothermal heat pump system should not be included in Natural Gas Research priorities. Developing and demonstrating decarbonization solutions such as hydrogen, biomethane and Renewable Natural Gas should be put first.

**Natural Gas Infrastructure Safety & Integrity**

- Pilot Test and Demonstration of Hydrogen Blending to the Existing California Natural Gas Infrastructure
  - PG&E is interested in partnering on this initiative. The pilot test could be using a portion of the natural gas system or designing a new system for the test.

- Technologies for Microbiologically Influenced Corrosion Prevention of Natural Gas Pipelines and Storage Facilities
  - The largest gap pertains to our limited understanding of the relationship between Cathodic Protection and Microbiologically Influenced Corrosion. PG&E recommends focusing on this aspect.
- Questions for Stakeholders: Hydrogen Blending
  - Challenges/limitations to demonstrating hydrogen blending in the existing CA natural gas system:
    - Consider a section that could be isolated and controlled so that the data is clear on direct impacts from hydrogen (no outside influences)
    - Consider a sufficiently representative infrastructure in the demonstration (i.e. range of pipeline materials, assets and end user equipment)
    - Consider a control group with duplicate infrastructure and operating conditions with only natural gas
  - Recommendations on Research Approach(es)
    - PG&E recommends a connection with the [HyDeploy](#)<sup>1</sup> project in the UK to learn about how the team is implementing their pilot demonstration. The California demonstration may be able to use the same or a similar approach.

### **Energy Efficiency**

- Questions for Stakeholders: Hydrogen Blending
  - Consider testing hydrogen blending on CNG engines. Heavy duty trucking is a promising end-use for natural gas going forward and knowing the impact of hydrogen blending on truck engines would be valuable.

### **Conclusion**

PG&E continues to support the CEC's research efforts and appreciates the opportunity to provide feedback on the research priorities for increasing the resilience of the natural gas sector in California.

Sincerely,

/s/

Jessica M Melton

---

<sup>1</sup> HyDeploy Hydrogen Energy Project: <https://hydeploy.co.uk/>