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Re: Staff Workshop - The Natural Gas Distribution Infrastructure and Decarbonization Targets

Please see attached

Additional submitted attachment is included below.

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California Energy Commission
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June 21, 2019

Re: Docket No: 19-MISC-03

The Center for Renewable Natural Gas at the College of Engineering – Center for Environmental Research and Technology (CE-CERT) at the University of California, Riverside hereby submits comments on the 'The Natural Gas Distribution Infrastructure and Decarbonization Targets' study being conducted by Energy & Environmental Economics, Inc. (E3). These comments are based on results and data presented at the Staff Workshop on June 6, 2019 and in Technical Advisory Committee meetings before that date.

The analysis presented so far does not incorporate the potential revenue streams for Renewable Natural Gas (RNG) or hydrogen and thus presents a skewed cost benefit comparison. Renewable alternatives, by nature, are initially more expensive compared to the fossil fuels and require significant policy intervention including incentives and target mandates in order to foster deployment on a large scale. This is justified as the societal benefits are significant compared to continued fossil fuel usage. Over the long term, costs normally decrease as has been the case with renewable electricity and the successful implementation of state's Renewable Portfolio Standard (RPS) mandates. Thus, it is important to consider not only the production costs but also the revenue streams in order to accurately assess the costs and benefits of renewables, especially those that have not been deployed to their full potential. As an example, several of the scenarios presented show RNG, SNG and hydrogen costs that are comparable to today's production costs reported by operating projects that are profitable under existing policy measures.

We strongly recommend that the project team analyze scenarios that incorporate revenue streams for the renewable gas options, including potential incentives based on climate and air quality benefits. We would also like to note that these concerns were raised by several participants during prior Technical Advisory Committee meetings as well.

Renewable gas, either as hydrogen or in the form of methane, is likely to be an important future energy storage option. As more renewable power plants are integrated into the grid, there is an increasing 'temporal mismatch' between generation and demand that affects grid reliability. The Power to Gas pathway can help address many of these challenges while increasing the renewable energy utilization levels. There is insufficient research evidence on the potential ability to transition the natural gas system into a complete renewable gas system that can be used to supply hydrogen. Such a transition

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has the potential to play a key role in a decarbonized future where hydrogen can play a crucial role in sectors such as medium and heavy-duty transportation.

More importantly, an energy future primarily served by a single infrastructure (ex. the electric grid) is likely to lack current levels of robustness and resilience which could result in difficult to manage vulnerabilities. All infrastructures are susceptible to such risks as seen in the past, including grid issues during the recent wildfires. Any transition or phase out strategy should take into account these important long-term strategic issues.

Thank you for the opportunity to provide feedback on this important project. We are available to provide additional information and/or detailed responses to specific questions.

Sincerely,

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