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SoCalGas Comments-Renewable Hydrogen Production Plant Deployment Roadmap

Additional submitted attachment is included below.



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California Energy Commission
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Subject: Comments on Renewable Hydrogen Generation Plant Deployment Roadmap Webinar held on August 28th, 2019. (17-HYD-01)

Southern California Gas Company (SoCalGas) would like to thank the California Energy Commission's (CEC) Fuels and Transportation Division and the Advanced Power and Energy Program (APEP) at the University of California, Irvine (UCI) for its efforts to develop the California Renewable Hydrogen Generation Plant Deployment Roadmap. SoCalGas continues to support this important effort to develop a strategic long-term roadmap for renewable hydrogen production and usage in the transportation sector as part of "sector coupling" in California.

SoCalGas is appreciative of the UCI's efforts (as part of the roadmap) to develop an extensive analysis of the optimal build-out of the hydrogen refueling network - but not for the production end¹. SoCalGas requests the CEC to address the development of a strategic hydrogen production and supply resiliency framework that would call for evaluating an optimal build out of both centralized and distributed (forecourt) hydrogen production facilities and its impact on the cost economics from a "production and supply resiliency" perspective. The development of a strategic resiliency framework can also help in mitigation efforts in case of an outage/disruption either at a centralized "at scale" hydrogen production facility, or at one or more forecourt hydrogen facilities in the future as California transitions to a low/zero carbon transportation energy sector.

The California Air Resource Boards' 2019 Annual Evaluation of Fuel Cell Electric Vehicle (FCEV) Deployment and Hydrogen Fuel Station Network Development Report states that *"disruptions in hydrogen supply to California's fueling stations have occurred in the past year as the state's hydrogen fueling network continues to grow. Because California's hydrogen fueling network relies on a limited set of available production and distribution facilities, supply interruptions can have a magnified effect on station operations and ultimately FCEV customers. While the impact can be severe, it is ultimately temporary in nature while stakeholders work to assess and address the root causes of the interruptions"*.² A recent hydrogen supply disruption event in June 2019 (even though temporary) in California caused supply shortages for hydrogen

¹ <https://efiling.energy.ca.gov/GetDocument.aspx?tn=229588&DocumentContentId=61009>, see slide 3.

² https://ww2.arb.ca.gov/sites/default/files/2019-07/AB8_report_2019_Final.pdf

fueling customers at various hydrogen refueling stations.³

With wider adoption of hydrogen usage “at scale” across multiple energy sectors and end use applications⁴ in the future, it is important to evaluate the optimal deployment of both centralized and distributed forecourt hydrogen production, compression and supply facilities (including redundancy build-out in the production, compression, storage and distribution supply chains) as part of building a robust hydrogen production and supply chain resiliency in California.

We look forward to working with the CEC to ensure success in establishing foundation projects for renewable hydrogen production as hydrogen will play a vital role in the California’s clean energy future.

Sincerely,
/s/ Tim Carmichael

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³ <https://cafcp.org/blog/air-products-statement-hydrogen-supply-shortage>

⁴ Hydrogen can be used in several applications, including: energy storage in the power sector to accommodate the integration of intermittent and variable energy sources; as an energy carrier in transportation; energy source for heating; blending with natural gas for end-use applications in residential, commercial, and industrial sectors; and as a process feedstock for industries such as chemicals, refining, steel manufacturing, food processing, etc.