BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking Regarding Building Decarbonization.	R.19-01-011 (Filed January 31, 2019)

CALIFORNIA HYDROGEN BUSINESS COUNCIL REPLY COMMENTS ON ADMINISTRATIVE LAW JUDGE'S RULING SETTING PREHEARING CONFERENCE AND DIRECTING COMMENT ON ENERGY DIVISION PHASE II STAFF PROPOSAL

Emanuel Wagner
Deputy Director
California Hydrogen Business Council
18847 Via Sereno
Yorba Linda, CA 92866
310-455-6095
ewagner@californiahydrogen.org

Dated: October 16, 2020

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I. Introduction

The California Hydrogen Business Council (CHBC)[1] welcomes the opportunity to submit the following reply comments, pursuant to the Administrative Law Judge's Ruling Setting Prehearing Conference and Directing Comment on Energy Division Phase II Staff Proposal issued September 24, 2020 ("ALJ Ruling"). Our reply comments are summarized as follows and elaborated on in the section below.

A. We strongly agree with party comments that the WNDRR program ought to be modified to better align with state greenhouse gas emissions reduction and resiliency goals, and specifically ought to include low and zero carbon hydrogen solutions among eligible technologies in rebuilds funded by the program.

B. We agree with parties who call for WNDRR to include a focus on providing funding assistance to low income and disadvantaged communities.

II. Reply Comments

A. We strongly agree with party comments that the WNDRR program ought to be modified to better align with state greenhouse gas emissions reduction and resiliency goals, and specifically ought to include low and zero carbon hydrogen solutions among eligible technologies in rebuilds funded by the program.

[1] The views expressed in these comments are those of the CHBC, and do not necessarily reflect the views of all of the individual CHBC member companies. CHBC Members are listed here: https://www.californiahydrogen.org/aboutus/chbc-members

Governor Newsom recently emphasized in the wake of yet another season of devastating wildfires that California must accelerate its efforts to address climate change. The CHBC believes the Commission can and should do more to ensure that programs designed to help wildfire victims rebuild also advance greenhouse gas reduction in keeping with state policy. We also agree with parties who expressed that wildfire rebuild programs must integrate reliability of energy services as a core principle, as loss of energy supplies in wildfire regions poses a particular threat to lives and property. Advancing hydrogen solutions holds a key to achieving both goals - reducing greenhouse gas and ensuring reliable energy service.

The Wild Tree Foundation rightly pointed out in their Opening Comments that the proposed WNDRR program does not "establish a baseline or any GHG reduction goals, instead creating a program design and budget that do not appear to be tied to state policy goals. As a result, it is difficult to evaluate if the program proposal and measure program success."[2] We share these concerns, as well as those expressed by parties that the proposed program design actually risks increasing greenhouse gas emissions. Southern California Gas explains that relying solely on heat pumps as a heating technology, as has been dominant a theme in this proceeding, risks increasing GHG "for three reasons: (1) higher carbon intensity of the electric grid using natural gas fired power plants during times of peak demand; (2) the increased use of high global warming refrigerants where none existed before; and (3) the increased electric load where none existed before (i.e. air conditioning load)." The Wild Tree Foundation also correctly warns that "(t)he Commission cannot pretend that our grid is fully decarbonized and that we can electrify buildings at will without a GHG emission toll to pay at the other end of the wire. In fact, if attempts at building decarbonization are not done correctly, including in this proceeding, this can result in increased GHG emissions. By itself electrification does not actually decarbonize a building."[3]

Wild Tree Foundation goes on to recommend efficiency and solar PV be added to the program, which we support, although these solutions alone, will not provide the 24/7/365 building energy that people need. We strongly agree with Southern California Gas' logical point that wildfire victims are going to continue to be at high risk of wildfire related planned and unplanned power shutoffs and that it is irresponsible to design programs that make them all the more dependent on the vulnerable power grid without solutions to ensure they have reliable energy service at all times.[4]

[2] Wildtree Foundation Opening Comments, p. 3
[3] Wildtree Foundation Opening Comments, p. 5
[4] Southern California Gas Opening Comments, p. 7

Hydrogen solutions are able to address both reliability and greenhouse gas reduction challenges. Just last week, for example, it was reported that 51 hydrogen fuel cells provided over 1500 hours and up to 7 days of back up generation to communications equipment.[5] Hydrogen emits zero greenhouse gas in any use case, and when produced using zero carbon electricity or biowaste feedstock, emits no greenhouse gas over its lifecycle. Other hydrogen solutions that can address both climate and resiliency concerns for buildings include micro co-generation hydrogen units, more than 300,000 of which have been installed at buildings in Japan as part of their carbon reduction strategy, and more than10,000 of which have been installed in Europe – with 100,000 expected by 2022.[6] There are also emerging solutions like onsite solar or grid powered micro-electrolyzer/fuel cell and hydrogen storage systems,[7] which are becoming cost competitive with diesel generators and can be used both as hybrid systems to provide clean power to buildings 24/7/365 or for backup generation. All of these solutions, in addition to emitting zero greenhouse gases also emit zero criteria pollutants or toxics. Hydrogen boilers, which also emit no toxics or greenhouse gas, insofar as the hydrogen is produced renewably, could additionally replace propane boilers in many wildfire prone communities. They are gaining traction in Europe and starting to develop in the US.[8]

Hydrogen, unlike propane or diesel, can be stored underground, making it all the more resistant to disruption by natural disasters. As California develops protocols to inject hydrogen into gas pipelines, the underground gas system could also be a carrier of hydrogen to displace natural gas in buildings with hydrogen, which is an approach being examined in the UK to heat buildings.[9]

Supporting hydrogen technologies need not and should not be seen as conflicting with electrification. Indeed, global analysts like Bloomberg New Energy Finance, define electrification as both plugging directly into the power grid or using power indirectly to make fuel, such as green electrolytic hydrogen. [10] We urge California to similarly define electrification broadly to include both technologies like electrolysis that use electricity to make electrolytic fuel and those like fuel cells that use low and zero carbon fuels like hydrogen to make electricity. We also encourage the state to see how the gas system and electricity system can complement each other as carriers of low and zero greenhouse gas energy. Coupling low and

[5] https://www.plugpower.com/hurricane-sally-hits-the-southeast-plug-power-fuel-cells-respond/
[6] http://www.pace-energy.eu/fuel-cell-micro-cogeneration-reaches-another-milestone-in-japan/
[7] https://www.powerengineeringint.com/smart-grid-td/energy-storage/hybrid-electrolyzer-and-fuel-cell-combo-offers-cost-effective-grid-stability/
[8] https://www.pmmag.com/articles/102632-bdr-thermea-group-hydrogen-powered-domestic-boiler
[9] https://www.hy4heat.info/
[10] https://data.bloomberglp.com/professional/sites/24/BNEF-Sector-Coupling-Report-Feb-2020.pdf

zero carbon electricity with low and zero carbon gas, such as hydrogen made from zero carbon electricity or bioenergy feedstock, will be key to providing a diverse and reliable energy system to California buildings in an increasingly climate vulnerable world, especially in those regions most exposed to wildfire risk. A report by international energy analyst Poyry about Europe also indicates that a hybrid approach of deploying both all-electric and zero carbon fuel approaches will also be more cost effective.[11]

Additionally, a diverse range of technology choices could raise participation in the program, which a number of parties pointed out has been extremely low in previous utility programs aimed at encouraging energy efficient building.

California, as the 5th largest economy in the world and track record as the launching pad for clean energy solutions, is in a position to either push the envelope in creating markets for the full range of zero carbon building decarbonization solutions, including hydrogen technologies, or stifling innovation by taking an overly prescriptive approach that narrowly focuses on a limited notion of electrification. While we believe that unfortunately the latter has been the approach in this proceeding, we hope this next phase of the proceeding, the Commission will design a more diversified, technology neutral program.

B. We agree with parties who call for WNDRR to include a focus on providing funding assistance to low income and disadvantaged communities.

The CHBC supports comments by PG&E,[12] CEJA[13] and others that call for a portion of the WNDRR program funds to be reserved for low income and disadvantaged communities that have been impacted by natural disasters. These communities face compounded problems, such as greater health and economic impacts caused by the COVID-19 pandemic and disproportionate and cumulative exposure to air pollution and toxics. These communities are arguably most in need of zero emissions technology solutions like hydrogen fuel cells, while being least able to afford the upfront added costs to adopt new technologies.

[11] https://www.poyry.com/sites/default/files/media/related_material/poyrypointofview_fullydecarbonisingeuropesenergysystemby2050.pdf

[12] PG&E Opening Comments, p. 2

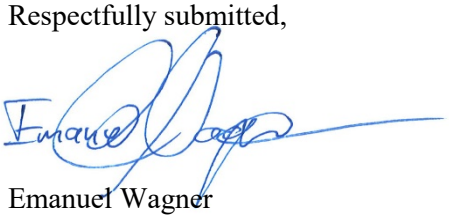
[13] CEJA Opening Comments, pp. 14-21

III. CONCLUSION

We thank the Commission for consideration of these reply comments and look forward to working with you to develop understanding for how hydrogen solutions can become a part of California's strategy for reducing or eliminating greenhouse gas emissions from buildings without sacrificing energy reliability.

Respectfully submitted,

Dated: October 16, 2020



Emanuel Wagner
Deputy Director
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