

**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  
PROPOSED DECISION ESTABLISHING BUILDING DECARBONIZATION PILOT  
PROGRAMS**

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Dated: March 9, 2020

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**I. Introduction**

The California Hydrogen Business Council (CHBC)<sup>1</sup> appreciates the opportunity to submit the following reply comments on the *Proposed Decision Establishing Building Decarbonization Pilot Programs* (PD). Our reply comments are summarized as follows and elaborated on in the Reply Comments section below:

- A. We strongly agree with party comments that support a greenhouse gas reduction metric,<sup>2</sup> and particularly inclusion of renewable gas like hydrogen and methanated hydrogen made from electricity or biogas feedstock,<sup>3</sup> in defining eligibility for the BUILD program.**
- B. We support party comments that call for clarifying that in the event there are unused funds after two years, the BUILD program should at least then open eligibility to all fuel types that can help buildings decarbonize, including hydrogen.<sup>4</sup>**
- C. We join multiple parties in supporting the TECH program and particularly appreciate the technology neutral approach, which we believe is in keeping with SB 1477 and appropriate at this nascent time in market development for decarbonized heating technologies.**
- D. We strongly disagree with Wildtree Foundation’s opposition to including hydrogen in any pilot program.<sup>5</sup>**

**II. Reply Comments**

- A. We strongly agree with party comments that support a greenhouse gas reduction metric, and particularly inclusion of renewable gas like hydrogen and methanated hydrogen made from electricity or biogas feedstock, in defining eligibility for the BUILD program.**

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<sup>1</sup> 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/>

<sup>2</sup> California Efficiency and Demand Council, Opening Comments to PD, p. 2; Southern California Gas Opening Comments to PD, p. 3

<sup>3</sup> Southern California Gas Opening comments to PD, pp. 1, 4-5

<sup>4</sup> SDG&E Opening Comments to PD, p. 5; California Building Industry Association Opening Comments to PD, p. 2

<sup>5</sup> Wildtree Foundation Opening comments to PD, p. 3

As Southern California Gas (SCG) points out, all electrification is not mandated by SB 1477, which appropriately was not prescriptive of whether near zero emissions should be achieved by electrifying all end uses or other means, such as solar thermal, energy storage, or a combination of technologies.<sup>6</sup> A combination of technologies is not necessarily all electric. The only requirement in the law is that the technologies must reduce greenhouse gas and reliance on the electricity and gas grid.<sup>7</sup>

We further agree with, but wish to clarify, SCG's comment that the PD wrongfully dismisses recommendations that allows use of renewable gas, such as hydrogen and methanated renewable hydrogen, as strategies to reduce greenhouse gas emissions in buildings.<sup>8</sup> While we agree, their comments mention that this was a recommendation of the gas utilities, and to be clear, this was also a recommendation by other parties, including CHBC and NFCRC.<sup>9</sup> We also point out that the PD dismisses our recommendations to allow hydrogen solutions to be combined with other renewable gas and electrification solutions in the BUILD program, on the basis that SB 1477 is not focused on "particularized infrastructure or fuels."<sup>10</sup> However, the irony is that by focusing solely (with the exception of solar thermal) on electric infrastructure and electric energy as eligible for the BUILD program, the Commission is in fact doing exactly what it mistakenly accuses CHBC of – i.e. focusing on a particularized infrastructure (electricity grid) and energy source (electricity), while it is we who are encouraging broadening the focus of eligible solutions to both gas *and* electric technologies.

We also add regarding the misalignment of SB 1477 with the PD that SB 1477 specifically says that "energy storage systems" are eligible for the BUILD program.<sup>11</sup> SB 1369 explicitly states that the CPUC and other agencies will consider green electrolytic hydrogen as an eligible form of energy storage and that the CPUC ought to consider it for energy storage and other potential uses.<sup>12</sup> The PD, however, arbitrarily excludes green electrolytic hydrogen from being eligible for the BUILD program. The PD, therefore, ought to be amended to clarify that green electrolytic hydrogen is an eligible technology in the BUILD program. Electrolyzers combined with fuel cells are being deployed around the world for residential use,<sup>13</sup> but such innovative solutions risk being shut out of the California market by the omission from state building decarbonization programs like BUILD, even though they could be far more appropriate

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<sup>6</sup> Southern California Gas comments on PD, p. 2, which references SB 1477 text found here: [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=201720180SB1477](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB1477)

<sup>7</sup> SB 1477, Section 4, Article 12, 2(e)(A)(B)

<sup>8</sup> Ibid, p. 1

<sup>9</sup> See CHBC Comments on Staff Proposal for Building Decarbonization Pilots, pp. 6-10; CHBC Reply Comments on Staff Proposal for Building Decarbonization Pilots, pp. 3, 4; National Fuel Cell Research Center Opening Comments on Administrative Law Judge's Ruling Seeking Comment on Staff Proposal for Building Decarbonization Pilots, pp. 3, 4, 12; National Fuel Cell Research Center Reply Comments on Staff Proposal for Building Decarbonization Pilots, pp. 3

<sup>10</sup> PD, p. 86

<sup>11</sup> Southern California Gas comments on PD, p. 2, which references SB 1477 text found here: [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=201720180SB1477](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB1477)

<sup>12</sup> Sec. 2, 400.3 [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=201720180SB1369](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB1369)

<sup>13</sup> See, e.g. <https://nilssonenergy.com/portfolio-item/public-housing-estate/>; <https://www.enapter.com/use-case/#PostThreeTitle>; <http://www.homepowersolutions.de/en/blog>

than all electricity technologies, like batteries, for some regions in the state that need new construction, like those in wildfire areas that lost homes, for which overreliance on the electric grid makes residents more vulnerable to energy service unreliability.

**B. We support party comments that call for clarifying that in the event there are unused funds after two years, the BUILD program should at least then open eligibility to all fuel types that can help buildings decarbonize, including hydrogen.<sup>14</sup>**

Such a backstop could help ensure that California does not prematurely pick winners in such an early phase of market development and at a time when future electricity rates are so uncertain given the rise in catastrophic wildfires. E3's study on *Residential Building Decarbonization in California* specifically recommends that California ought to presently pursue developing both electrification *and* renewable gas pathways for buildings in the near-term because of the fact that both depend on nascent technology markets.<sup>15</sup> While we prefer that the BUILD program from the start include renewable gas solutions, along with electric solutions, at least making sure unused funds are available for all decarbonized energy types would be otherwise prudent. The E3 report suggests that the cost-effectiveness of the renewable gas approach depends on progress being made on commercialization of electrolytic hydrogen technology,"<sup>16</sup> but this progress can only happen if there are routes to market that are currently excluded by the PD. A recent ICF study (2019)<sup>17</sup> warned that the high cost of building electrification would likely "crowd out" other cost-effective alternatives to help reduce building related emission and points out that the annual cost per household under technology neutral decarbonization is cheaper than full residential electrification (the annual estimated cost per house hold increased by \$1,420 per customer under residential electrification versus \$1,200 per customer under a technology neutral decarbonization scenario).<sup>18</sup> RMI opines that hydrogen ought to be considered for building electricity and heat, among other applications, despite the fact that "*misconceptions about hydrogen abound,*" and "*haters are expressing doubt over the development of hydrogen resources, fearing that it competes with electrification and battery technology,*" when in fact, "*this concern doesn't reflect reality... With its zero-carbon potential and the role it can play in increasing demand for renewable energy, hydrogen has an important role in our energy transition and is a key complement to electrification*"<sup>19</sup> Meanwhile, in California, utility rate increase requests are already reaching nearly 22% over the next few years to help pay for the costs of wildfire liability and prevention,<sup>20</sup> and current uncertainty around wildfires, utility liability, and associated cost to ratepayers

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<sup>14</sup> SDG&E Opening Comments to PD, p. 5; California Building Industry Association Opening Comments to PD, p. 2

<sup>15</sup> p. 2, *Building Electrification in California*, E3; April 2019 [https://www.ethree.com/wp-content/uploads/2019/04/E3\\_Residential\\_Building\\_Electrification\\_in\\_California\\_April\\_2019.pdf](https://www.ethree.com/wp-content/uploads/2019/04/E3_Residential_Building_Electrification_in_California_April_2019.pdf)

<sup>16</sup> Ibid.

<sup>17</sup> ICF webinar on the analysis is available at: <https://www.icf.com/resources/webinars/2019/gas-utilities-in-a-decarbonizing-world>

<sup>18</sup> Slide 17 of the ICF webinar available at: <https://www.icf.com/resources/webinars/2019/gas-utilities-in-a-decarbonizing-world>

<sup>19</sup> <https://rmi.org/the-truth-about-hydrogen/>

<sup>20</sup> <https://calmatters.org/economy/2019/08/pges-rate-increases-what-you-need-to-know/>

make it difficult, if not impossible to compare future gas and electricity rates, and alternate building decarbonization pathways dependent on them, in any reliable way. In fact, the only thing certain about electricity rates right now is that they will remain highly uncertain until the legislature acts to address wildfire liability, and perhaps even beyond that, if inverse condemnation<sup>21</sup> is not addressed, which threatens “customers’ access to affordable energy and clean water.”<sup>22</sup> This lack of certainty regarding future electricity rates reinforces the importance of diversifying approaches to building decarbonization beyond those that depend entirely on the electricity system.

**C. We join multiple parties in supporting the TECH program and particularly appreciate the technology neutral approach, which we believe is in keeping with SB 1477 and appropriate at this nascent time in market development for decarbonized heating technologies.**

We join multiple parties in supporting the TECH program and particularly appreciate the technology neutral approach, which we believe is in keeping with SB 1477 and appropriate at this nascent time in decarbonized heating technology market development.

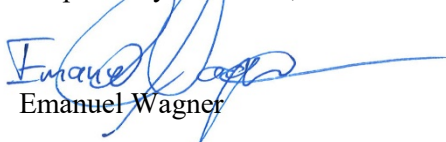
**D. We strongly disagree with Wildtree Foundation’s opposition to including hydrogen in any pilot program.<sup>23</sup>**

This recommended exclusion is arbitrary and opposed for reasons explained in these reply comments. A primary goal of SB 1477 pilot programs is to achieve near zero greenhouse gas emissions in buildings, and when hydrogen is produced using renewable or zero carbon feedstocks, it emits zero greenhouse gas emissions throughout its lifecycle. Lawrence Livermore National Laboratory furthermore finds that the most cost-effective pathway to achieving carbon neutrality and negative greenhouse gas emissions is hydrogen produced via gasification of biomass.<sup>24</sup> Wildtree Foundation’s opposition to hydrogen is without data-driven basis, and we strongly disagree with it.

**I. CONCLUSION**

We thank the Commission for their consideration of these reply comments.

Respectfully submitted,

  
Emanuel Wagner

Dated: March 9, 2020

Deputy Director | California Hydrogen Business Council

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<sup>21</sup> Inverse condemnation is a legal concept used in California that allows the public to seek being awarded for damages caused by entities providing a public benefit (such as utilities do for providing electricity) regardless of whether that entity behave negligently. There is discussion underway in California about changing this doctrine in the wake of recent wildfires.

<sup>22</sup> Wildfire Commission (2019) Draft Executive Summary, June. [http://opr.ca.gov/meetings/wildfire-commission/2019-06-07/docs/20190607-Item\\_7\\_Wildfire\\_Commission\\_Executive\\_Summary\\_Draft.pdf](http://opr.ca.gov/meetings/wildfire-commission/2019-06-07/docs/20190607-Item_7_Wildfire_Commission_Executive_Summary_Draft.pdf)

<sup>23</sup> Wildtree Foundation Opening comments to PD, p. 3

<sup>24</sup> p. 5, Executive Summary; Ch. 4, *Getting to Neutral*, Lawrence Livermore National Laboratory, January 2020 [https://www-gs.llnl.gov/content/assets/docs/energy/Getting\\_to\\_Neutral.pdf](https://www-gs.llnl.gov/content/assets/docs/energy/Getting_to_Neutral.pdf)