

## DOCKETED

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**April 20, 2017 ZNE Staff Workshop Comment Letter on behalf of SoCalGas and SDG&E**

*Additional submitted attachment is included below.*

# April 20, 2017 ZNE Staff Workshop Comment Letter

In Regards to CEC Docket #17-BSTD-01

May 5, 2017



## Background

The California Energy Commission (CEC) is undergoing its pre-rulemaking for the 2019 Building Energy Efficiency Standards (Standards). On April 20, 2017, CEC staff conducted a public workshop to present Zero Net Energy (ZNE) related updates and solicit public comments. The workshop notice and all related documents are available online in CEC Docket #17-BSTD-01.<sup>1,2</sup>

## SoCalGas and SDG&E Comments

The 2019 Standards represent a substantial effort on the part of the California Energy Commission (CEC), its staff, and the numerous parties that participated in the workshop. Southern California Gas Company (SoCalGas) and San Diego Gas & Electric (SDG&E) appreciate the extensive efforts the CEC has taken to present a balanced energy approach striving to minimize potential negative impacts to the electric grid while giving builders, local jurisdictions, and California utility customers the flexibility to identify and choose the most effective pathways to comply with the State's ZNE goals. SoCalGas and SDG&E appreciate the opportunity to provide the following comments.

### Balanced Energy Approach

With the State's aggressive greenhouse gas reduction goals, many have asserted that the best path to achieve those goals is through widespread electrification. However, when appropriate analyses are conducted, it raises concerns around grid reliability and harmonization. This issue has been recognized through what is commonly known in California as "the duck curve,"<sup>3</sup> depicting net load over a 24-hour period. A comparison of forecasted versus actual net load shows that this issue develops faster and more pronounced than anticipated, and requires assertive mitigation.<sup>3,4</sup> The CEC notes in one of its workshop presentations<sup>5</sup> that these concerns are exacerbated due to solar photovoltaic (PV) over-generation from buildings. SoCalGas and SDG&E urge the CEC to continue on the path of balanced energy, allowing builders and designers to utilize all available resources, from higher efficient energy systems to multiple fuel sources, both for conventional use and renewable generation systems. This approach fosters innovation, competition and flexibility, while still advancing the State's energy policies. SoCalGas and SDG&E participate in multiple research and demonstration projects that showcase the feasibility and success of a balanced energy approach, and will continue to support the CEC in defining and executing similar projects in the future.

### Cost Effectiveness

SoCalGas and SDG&E agree with the CEC that PV systems should be sized to meet electric kWh and that PV tradeoffs for energy efficiency should be disallowed. Cost effectiveness varies regionally and allowing flexibility for consumers and builders to select from multiple compliance

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<sup>1</sup> <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=17-BSTD-01>

<sup>2</sup> <http://www.energy.ca.gov/title24/2019standards/prerulemaking/documents/index.html#04202017>

<sup>3</sup> [http://www.scottmadden.com/wp-content/uploads/2016/10/Revisiting-the-Duck-Curve\\_Article.pdf](http://www.scottmadden.com/wp-content/uploads/2016/10/Revisiting-the-Duck-Curve_Article.pdf)

<sup>4</sup> <http://www.nrel.gov/docs/fy16osti/65023.pdf>

<sup>5</sup> <http://docketpublic.energy.ca.gov/PublicDocuments/17-BSTD->

[01/TN217286\\_20170424T162107\\_4202017\\_Staff\\_Workshop\\_Zero\\_Net\\_Energy\\_Strategy\\_Presentation.pdf](http://docketpublic.energy.ca.gov/PublicDocuments/17-BSTD-01/TN217286_20170424T162107_4202017_Staff_Workshop_Zero_Net_Energy_Strategy_Presentation.pdf)

paths and energy options with comparatively small PV systems maximize the cost effectiveness potential in designing ZNE homes.

Balanced energy homes should continue to be supported as the CEC and its consultants' have recommended beginning on slide 22.<sup>6</sup> Cost effectiveness concerns for all-electric homes are compounded by recent field studies where nameplate energy factors of heat pump water heaters were found to be significantly higher than actual (for example, "real world" EF 1.77 vs. nominal rating of 2.4<sup>7</sup>).

### Reach codes

SoCalGas and SDG&E agree with the CEC in recognizing the State's goals as a collective effort, inclusive of the important role local jurisdictions have in maintaining authority to adopt cost-effective reach codes as a strategy to capture energy savings beyond minimum state requirements. SoCalGas and SDG&E provide support to local jurisdictions looking to implement a reach code through the development of tools and resources including cost-effectiveness studies and this support will continue as California strives to meet ZNE goals.

### Decarbonization

SoCalGas and SDG&E continue to believe in increasing energy efficiency efforts and promoting the use of cost effective application of renewable energy. In our efforts to support the use of renewable energy, SoCalGas is undertaking two major industry initiatives on a path to decarbonizing our pipeline, capturing emissions, and further supporting alternative renewable source generation as a long term storage mechanism.

**Renewable Gas:** Just like electricity, natural gas can be made from renewable sources. California produces a great deal of renewable forms of methane from farm operations, landfills and wastewater treatment plants that could be harnessed to reduce GHG emissions and create additional renewable energy. California could produce enough renewable gas each year to replace 75 percent of the smog-producing diesel fuel used by vehicles in our state or power 2 to 3 million homes.<sup>8</sup> And because renewable gas can be stored and delivered through existing infrastructure, it can help California reduce greenhouse gas emissions and meet the state's renewable energy goals without waiting for new infrastructure or new technology.

**Power-to-Gas (P2G)<sup>9</sup>:** P2G is a technology to convert surplus clean energy from solar panels or wind farms into hydrogen, which can be blended with natural gas and utilized in everything from home appliances to power plants. The renewable fuel can also be converted to methane for use in a natural gas pipeline and storage system or used in hydrogen fuel cell vehicles. The features of hydrogen can enable long-term storage of large amounts of carbon-free power—which is a significant advantage over lithium ion batteries.

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<sup>6</sup> [http://docketpublic.energy.ca.gov/PublicDocuments/17-BSTD-01/TN217286\\_20170424T162107\\_4202017\\_Staff\\_Workshop\\_Zero\\_Net\\_Energy\\_Strategy\\_Presentation.pdf](http://docketpublic.energy.ca.gov/PublicDocuments/17-BSTD-01/TN217286_20170424T162107_4202017_Staff_Workshop_Zero_Net_Energy_Strategy_Presentation.pdf)


<sup>7</sup> [http://aceee.org/sites/default/files/pdf/conferences/hwf/2017/Howlett\\_Session3B\\_HWF17\\_2.27.17.pdf](http://aceee.org/sites/default/files/pdf/conferences/hwf/2017/Howlett_Session3B_HWF17_2.27.17.pdf)

<sup>8</sup> <https://www.americanbiogascouncil.org/pdf/BAC%20Report%20on%20Renewable%20Gas%20Standard.pdf>

<sup>9</sup> <https://www.socalgas.com/smart-energy/presentations-webinars/decarbonizing-the-pipeline>

In summary, through a cost-effective balanced energy strategy, SoCalGas and SDG&E are supportive of the 2019 Building Energy Efficiency Standards approach to reach ZNE goals. We thank the CEC for the opportunity to provide these comments and will continue to be involved through the 2019 rulemaking process.

Sincerely,



Kate Zeng  
Codes & Standards & ZNE Planning  
San Diego Gas and Electric Company



Sue Kristjansson  
Codes & Standards and ZNE Manager  
Southern California Gas Company