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Pacific Gas and Electric Company Comments on the Building Decarbonization Joint Agency Workshop

Additional submitted attachment is included below.

Pacific Gas and Electric Company

Molly Zimney
Attorney, Regulatory

77 Beale Street, B23C
San Francisco, CA 94105

(415) 973-6840
Molly.Zimney@pge.com

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California Energy Commission
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Docket No. 19-IEPR-06
1516 Ninth Street
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Re: Docket 19-IEPR-06: Pacific Gas and Electric Company Comments on the Building Decarbonization Joint Agency Workshop

Introduction

Pacific Gas and Electric Company (PG&E) appreciates the productive discussion sponsored by the California Energy Commission (CEC) and California Public Utilities Commission (CPUC or Commission) at the April 8, 2019, workshop as part of the Building Decarbonization Order Instituting Rulemaking (OIR) proceeding.[1/] PG&E offers the following comments on (1) greenhouse gas (GHG) emissions and (2) electric retrofitting.

Greenhouse Gas Emissions

PG&E recommends that this proceeding clearly articulate the scope of GHG emissions that it will address. During the April 8 joint agency workshop, speakers cited a wide range of figures for the GHG emissions attributed to the building sector. Additionally, state agencies have cited a range of figures in public documents, including the California Air Resources Board's (ARB) GHG inventory and the CEC's 2018 Integrated Energy Policy Report. This range appears to be the result of different scopes and categorizations of emissions. ARB's GHG inventory, which uses the Intergovernmental Panel on Climate Change (IPCC) methodology, suggests that the 2016 emissions associated with the building sector total is 12% and that combustion of natural gas in residential and commercial buildings is approximately 9% of the state's total GHG emissions.[2] This is in stark contrast to the 26% cited in CEC 2018 Integrated Energy Policy Report Update (see graphs below).[3]

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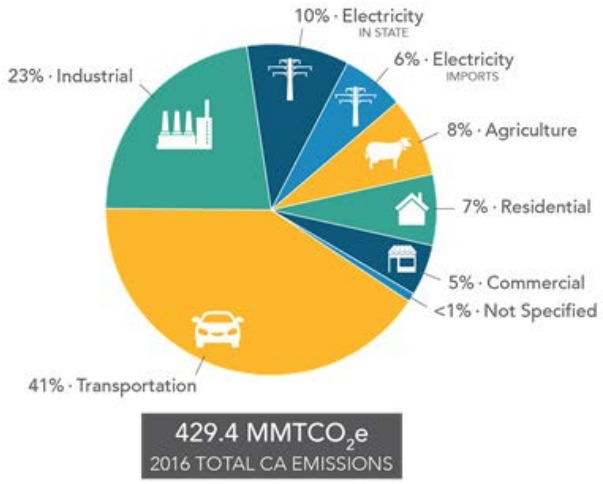
1 Order Instituting Rulemaking (R.)19-01-011.

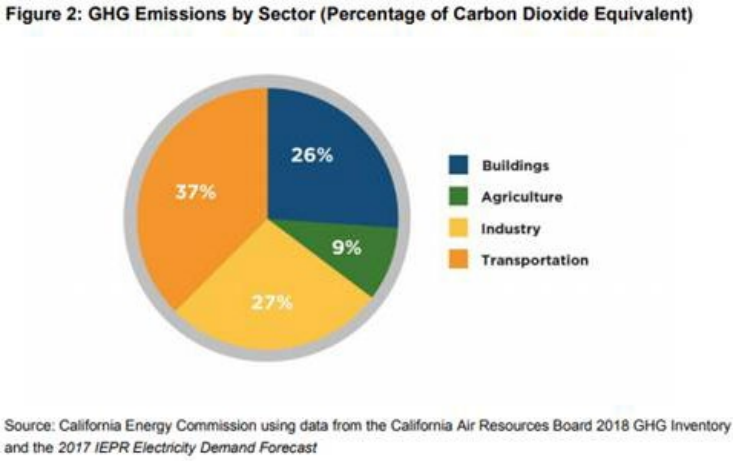
2 ARB website, California Greenhouse Gas Emission Inventory – 2018 Edition, available at https://www.arb.ca.gov/cc/inventory/data/data.htm, as of April 22, 2019.

3 CEC Toward a Clean Energy Future, 2018 Integrated Energy Policy Report Update, Adopted February 20, 2019, Volume II, p. 27, Figure 2, at https://www.energy.ca.gov/2018publications/CEC-100-2018-001/CEC-100-2018-001-V2-CMF.pdf, as of April 22, 2019.

ARB GHG Inventory 2016



2018 IEPR Update Decarbonizing Buildings



As the OIR looks to reduce GHG emissions associated with the building sector, it is important to have a sense of the scale and scope of the problem state policies and programs are looking to address. This is particularly important when evaluating and comparing the cost-effectiveness of various GHG-reduction strategies. PG&E requests that the Commission confer with relevant agencies to clarify which emissions attributable to buildings are contemplated by the OIR, noting that the category of emission may vary among the four general categories of issues identified in the preliminary scoping memo (Implementing SB 1477, Potential Pilot Programs to Address New Construction in Areas Damaged by Wildfires, Coordinating with Title 24 Building Energy Efficiency Standards and Title 20 Appliance Efficiency Standards, and Establishing a Building Decarbonization Policy Framework).

As the OIR states, "[i]nitially, the scope of this rulemaking is intended to focus on implementation of Senate Bill 1477 (Stern, 2018), which requires the Commission to develop two programs[4] designed to test two specific programmatic approaches to building decarbonization."[5] As defined by the OIR, building decarbonization is "to include both actions to reduce the emissions and impacts from natural gas use in buildings, as well as to electrify certain building end uses."[6] Therefore, emissions produced from electricity generation not associated with targeted use cases, the use of substitutes for ozone depleting substances (excluding relevant refrigerants, which are expected to increase with increased electrification[7]), the use of fertilizer, etc., appear to be out of scope for at least the initial scoping of this proceeding.

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4 The Building Initiative for Low Emissions Development (BUILD) and Technology and Equipment for Clean Heating (TECH) programs.

5 R.19-01-011, p. 2.

6 *Id*. at, p. 4.

7 CEC Toward a Clean Energy Future, 2018 Integrated Energy Policy Report Update, Adopted February 20, 2019, Volume II, p. 43, available at https://www.energy.ca.gov/2018publications/CEC-100-2018-001/CEC-100-2018-001-V2-CMF.pdf, as of April 22, 2019.

Electric Retrofitting

PG&E agrees with many at the workshop that full electric new construction is generally feasible without additional costs upfront, but that retrofits involving gas to electric equipment conversions are often difficult and expensive. Since roughly 65% of today's buildings will still be in service in 2045, PG&E advocates that decarbonization efforts necessarily must address the existing building stock.8

PG&E notes that heating, ventilation, and air conditioning (HVAC) and water heater manufacturers generally make both gas and electric equipment. Manufacturers have not put a lot of effort in designing electric equipment to replace gas equipment mainly because the market has not asked for these conversions. As an example, PG&E points to CEC figures reporting that the cost to convert a gas water heater to a heat pump water heaters (HPWH) is approximately $3,300.[9] Customer bill savings are commonly reported well under one-tenth of this cost.[10] Therefore, the customer value proposition is poor, absent very high incentives which may prove to be unsustainable. As the CEC has shown, costs associated with electrical upgrades and changes to the building structure due to the form factor of the equipment are key drivers of this cost. The equipment cost itself is relatively insignificant.[11]

PG&E believes that product innovation could effectively reduce conversion costs. For instance, developing technology that does not require electrical panel upgrade, new circuitry, or differentiating sizes could greatly simplify and reduce the cost of converting existing appliances. Accordingly, PG&E recommends that a substantial portion SB 1477 funds be earmarked to address product innovation among the manufacturing community. PG&E also recommend that a specific goal of the funding should be the development of a new product mix to make "drop-in" equipment conversions more feasible. As mentioned previously, because the electrical upgrades and changes to building structure are the key drivers of cost, switch-outs with a new "drop-in" equipment product mix would be much less expensive than with the current product mix.

While PG&E supports the requirement by SB 1477 for upstream and midstream incentives, it has concerns that these incentives will not reduce conversion costs if they are not accompanied by product innovation to make conversions simpler, more accessible, and less costly. Therefore, PG&E recommends that the CPUC and the CEC include investment in innovation that results in a reduction in retrofitting costs in scope of this proceeding.

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8 TRC Companies, Inc., Palo Alto Electrification Final Report, p. 1, Figure 1, available at https://www.cityofpaloalto.org/civicax/filebank/documents/55069 as of April 22, 2019.

9 CEC Presentation, Residential Water Heater Market in CA, Slide 8, available at http://www.buildingdecarb.org/uploads/3/0/7/3/30734489/energy_commission.pptx, as of April 22, 2019.

10 *Id*. at Slide 10.

11 *Id*. at Slide 8.

Conclusion

PG&E appreciates the opportunity to comment on the April 8, 2019, joint agency workshop and looks forward to continuing to with the CEC, the CPUC, and the parties throughout the proceeding.

Sincerely,

/s/

Molly Zimney