DOCKETED					
Docket Number:	22-DECARB-01				
Project Title:	Heat Pump and Decarbonization Goals				
TN #:	242702				
Document Title:	Southern California Gas Company (SoCalGas) - Comments on the Staff Workshop on Heat Pump Goals, Supply Chain, and Programs				
Description:	N/A				
Filer:	System				
Organization:	Southern California Gas Company (SoCalGas)				
Submitter Role:	Public				
Submission Date:	4/18/2022 4:16:32 PM				
Docketed Date:	4/18/2022				

Comment Received From: Southern California Gas Company (SoCalGas) Submitted On: 4/18/2022 Docket Number: 22-DECARB-01

# Comments on the Staff Workshop on Heat Pump Goals, Supply Chain, and Programs

Additional submitted attachment is included below.



Kevin Barker Senior Manager Energy and Environmental Policy 555 West 5<sup>th</sup> Street Los Angeles, CA 90013 Tel: (916) 492-4252

April 18, 2022

The Honorable J. Andrew McAllister Commissioner, California Energy Commission Docket Unit, MS-4 Docket No. 22-DECARB-01 715 P Street Sacramento, CA 95814-5512

# Subject: Comments on the Staff Workshop on Heat Pump Goals, Supply Chain, and Programs

Dear Commissioner McAllister,

Southern California Gas Company (SoCalGas) appreciates the opportunity to provide comments on the April 5, 2022 California Energy Commission (CEC) Staff Workshop on Heat Pump Goals, Supply Chain, and Programs. Reducing greenhouse gas (GHG) emissions and increasing the resiliency of buildings are critical steps for California to mitigate climate change impacts. Understanding the data and modeling decisions that lead to policy recommendations is a pivotal step of the public process and allows for pertinent feedback from stakeholders to be incorporated into policy recommendations. To this end, stakeholders would benefit from additional details and information needed to understand the cost, feasibility, and energy system implications of installing at least six million heat pumps by 2030.

As such, our comments are as follows: (1) SoCalGas reiterates its request for additional information and the analyses conducted to establish the six million heat pump goal; (2) the CEC should evaluate the feasibility of achieving decarbonization goals through a "dual-energy" lens; and (3) stakeholders would benefit from greater clarity as to the technological requirements of installing heat pump units by 2030.

### (1) SoCalGas reiterates its request for additional information and the analyses conducted to establish the six million heat pump goal.

SoCalGas' February 10, 2022 comments emphasized the need for additional information to understand the energy system implications associated with installing at least six million heat pumps by 2030.<sup>1</sup> It does not appear that the additional data and modeling information on this recommended goal has been provided. On pages 4 and 192 of the 2021 Integrated Energy Policy Report (IEPR) Volume I, the CEC inserted a policy recommendation to install at least six million heat pumps in new and existing buildings by 2030. While heat pumps have been discussed throughout the 2021 IEPR proceeding as an important technology to enable building decarbonization, this appears to be the first time the CEC has clearly delineated a specific recommended goal for the quantity of heat pump installations. As SoCalGas expressed previously, the new text does not include any references or explanation in the IEPR Volume I that details how the CEC reached this policy recommendation and its implications (for example, the specific *number* of heat pumps, nor the end use for the heat pumps recommended <sup>2,3</sup>). Disclosing such information is essential to maintain a clear, transparent process by allowing stakeholders the opportunity to understand the data underlying and supporting the CEC's resultant policy recommendations.

### (2) The CEC should evaluate the feasibility of achieving decarbonization goals through a "dual-energy" lens.

Utilities in Quebec, Canada have introduced an innovative plan to reduce residential, commercial, and institutional building emissions through a "dual-energy" agreement.<sup>4</sup> State-owned electric utility, Hydro-Québec, and Énergir, Quebec's primary investor-owned gas utility, are participating in the partnership.<sup>5</sup> The dual energy consumption program consists of using electricity as the main source of energy (about 70 percent of the time), while using a fuel as the auxiliary source of power during peak periods, such as the winter months, when more customers are using heating systems or energy-intensive appliances at the same time.<sup>6</sup> The Quebec model is an important example of the dual-energy approach other jurisdictions in North America should be studying in order to inform the optimal balance among GHG emissions reductions and energy reliability and resiliency. For some of the colder climate zones in California and areas with higher Public Safety Power Shutoff events, the CEC could consider whether allowing residents to retain their furnace for certain purposes, such as to provide a back-up energy source in conjunction with a heat pump

<sup>&</sup>lt;sup>1</sup> See Public Comments on the Final 2021 Integrated Energy Policy Report Volumes I, II, IV, and Appendix,

California Energy Commission (CEC), available at: <u>https://efiling.energy.ca.gov/getdocument.aspx?tn=241514</u> <sup>2</sup> As a comparison, Southern California Edison Company (SCE) recently announced a proposal to install 250,000 electric heat pumps in its service area. SCE arrived at this number based on the findings of their Mind the Gap: Policies for California's Countdown to 2030 report.

<sup>&</sup>lt;sup>3</sup> See "SCE Files Bold Plan to Accelerate Transition to Healthier, Clean Energy Homes," Edison International, December 20, 2021, available at: <u>https://newsroom.edison.com/releases/sce-files-bold-plan-to-accelerate-transition-to-healthier-clean-energy-homes</u>.

<sup>&</sup>lt;sup>4</sup> Jeff St. John, "Quebec utilities have a plan to curb gas use and cut emission during winter heating season," Canary Media, August 19, 2021, available at: <u>https://www.canarymedia.com/articles/electrification/quebec-utilities-have-a-plan-to-curb-gas-use-and-cut-emissions-during-winter-heating-season.</u>

<sup>&</sup>lt;sup>5</sup> Ibid.

<sup>&</sup>lt;sup>6</sup> See Hydro-Québec and Énergir: An unprecedented partnership to reduce greenhouse gas emissions, July 14, 2021, available at: <u>https://www.energir.com/en/about/media/news/partenariat-inedit-hydro-quebec-et-energir/.</u>

space heater, would still make that heat pump space heater eligible to count toward the six million heat pump goal.

## (3) Stakeholders would benefit from greater clarity as to the technological requirements of installing heat pump units by 2030.

During the first panel of the workshop, manufacturers were seeking more clarity regarding the technological requirements of this overarching goal. Manufacturers, such as Daikin, Rheem, and A.O. Smith, explained that "[t]he challenge that we have is the lack of specificity on the types of heat pumps we are talking about here..."<sup>7</sup>

During the workshop, the CEC did not distinguish between electric or gas heat pump space heaters or heat pump water heater systems to reach the goal of installing six million heat pumps by 2030. SoCalGas recommends that to achieve the overall goal of reducing GHG emissions from the building sector, a statewide technology-neutral approach could be taken. Understanding the source efficiency of different water heater technologies can help illustrate actual energy use in buildings and the need for a fuel neutral approach.

For example, Exhibit 1<sup>8</sup> below from the Gas Technology Institute (GTI) highlights site and source energy efficiency of water heaters.<sup>9</sup> The U.S. Environmental Protection Agency (EPA) has determined that "source energy is the most equitable unit of evaluation and enables a complete assessment of energy efficiency,"<sup>10</sup> given that it traces the heat and electricity requirements of the building back to the raw fuel input, thereby accounting for any losses and enabling a complete thermodynamic assessment. This source energy efficiency is relevant for building decarbonization goals, since this metric enables a comprehensive assessment of a given technology's energy efficiency and allows for a more technically-informed consideration of other technological solutions to reduce GHG emissions from our buildings.

https://www.energy.ca.gov/event/workshop/2022-04/staff-workshop-heat-pump-goals-supply-chain-and-programs <sup>8</sup> The Gas Technology Institute (GTI) Presentation – Data obtained from eGRID 2018 U.S. national site/source energy conversion for electricity of 2.72 and natural gas of 1.09 and NREL REEDS Standard Scenarios projected grid generation mix in 2035, using "mid-Case" scenario, n.d.

<sup>&</sup>lt;sup>7</sup> See CEC Staff Workshop Heat pump Goals, Supply Chain, and Programs Webpage, available at:

<sup>&</sup>lt;sup>9</sup> According to Energy Star, a program run by the U.S. Environmental Protection Agency (EPA) and U.S. Department of Energy, Site Energy refers to the amount of heat and electricity consumed by a building as reflected in utility bills. Site energy may be delivered to a facility in primary energy and secondary energy. This is limited because this metric does not account for any losses and does not allow for a complete thermodynamic assessment. Because billed site energy use includes a combination of primary and secondary forms of energy, a comparison using site energy does not provide an equivalent thermodynamic assessment for buildings with different fuel mixes. In contrast, source energy incorporates all production, transmission, and delivery losses, which accounts for all primary fuel consumption and enables a complete assessment of energy efficiency in a building.

<sup>&</sup>lt;sup>10</sup> See Technical Reference, Energy Star Portfolio manager, Source Energy Overview, available at: <u>https://portfoliomanager.energystar.gov/pdf/reference/Source%20Energy.pdf</u>

Source Energy Enterency							
	Electric Resistance	Gas Standard	Elec Heat Pump	Gas Tankless	Thermal Heat Pump		
Water Heater Technology							
Energy Factor	EF = 0.95	EF = 0.62	EF = 2.3	EF = 0.95	EF = 1.3		
Site Efficiency	95%	62%	230%	95%	130%		
2020 Source Energy Efficiency *	34.9%	56.9%	84.6%	87.2%	119.3%		
2035 Source Energy Efficiency **	43.9%	56.9%	106.3%	87.2%	119.3%		

#### Exhibit 1. Table Comparing Water Heater Technology Source Energy Efficiency<sup>11</sup>

\* eGRID 2018 U.S. national site/source energy conversion for electricity of 2.72 and natural gas of 1.09 \*\* NREL ReEDS Standard Scenarios projected grid generation mix in 2035, using "Mid-Case" scenario

#### Conclusion

SoCalGas appreciates the engagement and feedback received from both the CEC Staff and Commissioners. Providing stakeholders with the factual and technical analysis underlying how the goal was developed and determined, along with clarification of source-fuel and energy system reliability assessments benefits the stakeholders' understanding and the public interest.

Respectfully,

/s/ Kevin Barker

Kevin Barker Senior Manager Energy and Environmental Poli**cy** 

<sup>&</sup>lt;sup>11</sup> The Gas Technology Institute (GTI) Presentation. Data obtained from eGRID 2018 U.S. national site/source energy conversion for electricity of 2.72 and natural gas of 1.09 and NREL REEDS Standard Scenarios projected grid generation mix in 2035, using "mid-Case" scenario, n.d.