

SCE Comments for CPUC Workshop on “Assessing Data Needs for Building Decarbonization”

R.19-01-011, July 6, 2020

On June 17, 2020, the California Public Utilities Commission (CPUC) hosted a workshop on "Assessing Data Needs for Building Decarbonization" pursuant to D. 20-03-027 Ordering Paragraph 25. Multiple parties presented at the workshop to identify data needs for BUILD and TECH pilots in the short-term and for scaling pilots and strategic planning in the long-term. Southern California Edison (SCE) provides the comments below.

SCE’s positions are summarized as follows:

- California should focus on 2050 decarbonization goals, with 2030 goals as an intermediate stepping-stone.
- SCE recommends that the CPUC initiate work to improve how data can be collected.
- Recent data shows gas stoves can be a large source of toxic pollutants and that electric methods of cooking, such as induction, are a cleaner, healthier option.

1. California should focus on 2050 decarbonization goals, with 2030 goals as an intermediate stepping-stone.

California has very ambitious decarbonization goals, driven by various state legislative bills, executive orders, and state agency action plans with different milestone dates. For example, greenhouse gas (GHG) emission reduction goals have three drivers: Assembly Bill (AB)32, Senate Bill (SB)32, and Executive Order B-30-15 with different target dates as shown below.

	Year 2020	Year 2030	Year 2050
Goals and Policies	1990 GHG Level (AB 32)	40% below 1990 GHG Level (SB 32)	80% below 1990 GHG Level (E.O. B-30-15)

Achieving 2030 goals will serve as the stepping-stone for reaching 2050 goals. Focusing on all goals and milestones is very important, with 2030 being a critical intermediate indicator and 2050 being the primary goal, for the following reasons:

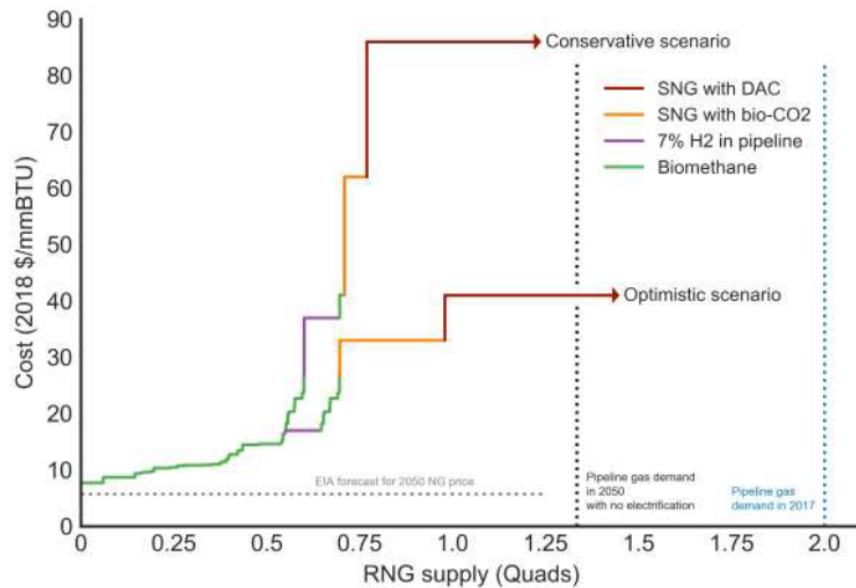
- Reduce GHG emissions in residential and commercial building stock by at least 40% below 1990 levels by 2030 (AB 3232)
- 40% reduction of methane below 2013 levels by 2030 (Decision 17-06-015)
- Double the energy efficiency goals by 2030 (SB 350)
- Displace 30% of petroleum use with alternative fuels by 2030 (AB 1007)
- 5 million zero emission vehicles in California by 2030 (Executive Order B-48-18)
- 100% clean electricity by 2045 (SB 100)
- Building Energy Efficiency Standards (Title 24, Part 6) to “move to a more GHG-based metric that promotes electrification”¹

¹ CEC 2019 Building Energy Efficiency Standards Adoption Hearing, May 9, 2018

The reason for focusing data metrics and strategies towards 2030 and the longer-term 2050 goals in parallel is that the least-cost approach for 40% reduction by 2030 may not align with the least-cost approach for 80% reduction by 2050. For example, the recent CEC Low Carbon Future study² shows that the renewable natural gas (RNG) supply curve dramatically increases in order to achieve the volume of RNG needed to achieve the 2050 target relative to the smaller 2030 target. See Figure 8 from the study below for the large “hockey stick” in \$/MMBTU prices for multiple RNG sources, and then Figure 14 from the same study showing the overall economy-wide net costs those scenarios result in.

² The Challenge of Retail Gas in California’s Low-Carbon Future: Technology Options, Customer Costs, and Public Health Benefits of Reducing Natural Gas Use; April 2020; CEC; <https://ww2.energy.ca.gov/2019publications/CEC-500-2019-055/CEC-500-2019-055-F.pdf>

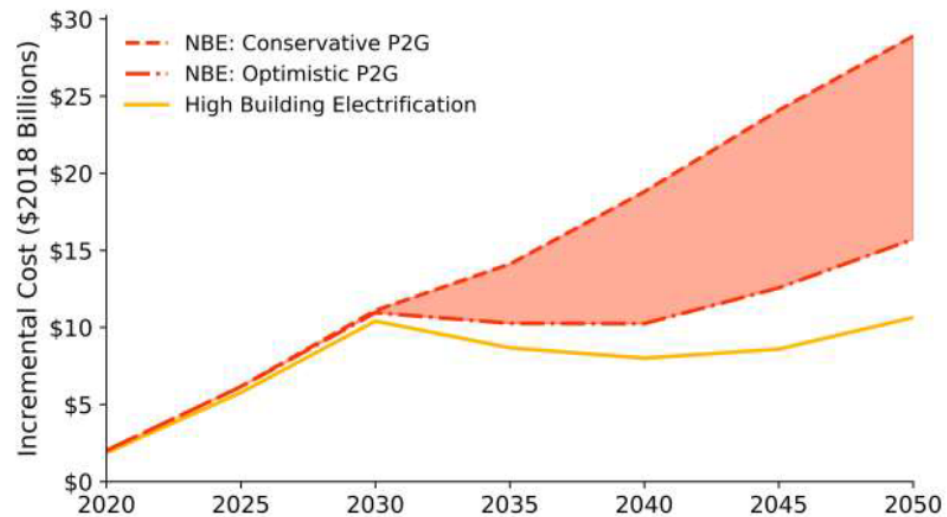
Figure 8: California RNG Technical Potential Supply Curve in 2050, Assuming All Biomass Is Directed to RNG



The biomethane supply curve segments (green) are based on allocating California's population-weighted share of United States waste and residue biomass entirely to biomethane. In the PATHWAYS scenarios, much of the biomass is used for liquid fuels to displace petroleum consumption in transportation and industry.

Source: E3

Figure 14: Economywide Annual Net Costs, Relative to Current Policy Reference Scenario



NBE is short for "no building electrification" scenario. The high building electrification scenario does not assume any retirements of natural gas distribution infrastructure. Transfer payments such as cap-and-trade and LCFS policies do not affect the total costs to the California economy shown here.

As a result, SCE recommends that the CPUC track metrics for different strategies for 2030 and 2050 goal achievement. For example, the CPUC could track RNG prices, the cost and emissions of using RNG on-site vs. injecting it into the pipeline and transporting it to buildings, clean electricity prices, and cost of electrification equipment annually, forecasted costs by 2030, and forecasted costs by 2050. This monitoring of the current portfolio of decarbonization activities and their future supply curve impacts will help avoid setting the state up for higher 2050 GHG reduction net costs relative to other strategies.

2. SCE recommends that the CPUC also consider initiating work to improve how data can be collected, along with requesting specific data points.

For example, for electric customers to share their usage data, there is a simplified “Green Button” process for streamlining sharing and permissions. SCE believes that there is no similar simplified data sharing process for natural gas therm usage, which creates a barrier to customer-specific bill impact analysis from building decarbonization. Directing the creation of a similar data access vehicle as “Green Button” will improve and expediate access to important gas usage data.

3. Induction cooktops are an important part of building decarbonization, specifically in avoiding unnecessary gas lines in residential new construction. Additionally, science-based data shows gas stoves expose residents to harmful levels of indoor air pollution.

On comments submitted on June 17, 2020, SoCalGas indicated that induction cooktops are relatively new to the market, and they might pose a risk to pregnant women who use them by quoting a 2007 Swiss study. SoCalGas stated that there has not been much research on potential exposure impacts of electromagnetic fields (EMFs) leakage from an induction cooktop.

Since the CPUC requested parties provide comments on data needs in support of the BUILD and TECH programs, SCE wants to take this opportunity to offer relevant science-based data on induction cooking as future data needs are contemplated. Although first introduced in the 1930s, modern induction stoves have been manufactured since 1970. As with all household electric appliances, induction cooktops produce a very small EMF and have been thoroughly tested to prove safety for all end-users. The 2007 study mentioned by SoCal Gas shows some of the appliances tested had EMF levels exceeding 6.25 micro-Tesla (μT) at very close measuring distances (i.e., within 15 cm). None of the appliances tested exceeded that level beyond 15 cm of measuring distance. The exposure limit of 6.25 μT was based on the International Commission on the Non-Ionizing Radiation Protection (ICNIRP) 1998 standard. SoCalGas’ comments did not show that ICNIRP revised the standard in 2010, with the much higher reference levels of magnetic field for the general public ranging from 27 to 2,000 μT .³

Furthermore, ICNIRP published a statement in 2020 saying that there is no evidence that exposure to extremely low frequency (ELF) magnetic fields, which usually refers to frequency range from 3 Hz to 3 kHz, has adverse effects on pregnancy or reproduction.

³ ICNIRP Guidelines for Limiting Exposure to Time-Varying Electric & Magnetic Fields (1 Hz – 100 kHz), Health Physics, vol. 99, no. 6, pp. 818-836, Table 4, 2010.

Subsequent studies do not support the hypothesis that ELF-MFs are related to adverse pregnancy outcomes, and the older laboratory studies did not find an association between ELF-MFs and reproduction and/or development.⁴ Induction waves are non-ionizing, meaning they do not interact with non-ferrous materials (e.g. pregnant women). Rather, they are low-energy radio waves and are as safe as the radio waves that transmit commercial radio signals.

Conversely, recent studies by the Rocky Mountain Institute⁵ and UCLA's Fielding School of Public Health⁶ conclude that gas cooking and other gas appliances emit dangerous levels of pollutants including nitrogen dioxide (NO₂) and carbon monoxide. Furthermore, the U.S. Environmental Protection Agency concludes that strong evidence exists for a relationship between long-term exposure to NO₂ and the development of asthma in children.

In conclusion, there is no established evidence that exposure to ELF EMF has adverse health effects, even after more than 40 years and thousands of research studies from around the globe.

⁴ ICNIPR Statement: Gaps in Knowledge Relevant to the "Guidelines for Limiting Exposure to Time-Varying Electric & Magnetic Fields (1 Hz – 100 kHz), Health Physics, vol. 118, no. 5, pp. 533-542, 2020.

⁵ Health Effects from Gas Stove Pollution, Rocky Mountain Institute. (2020)

⁶ Effects of Residential Gas Appliances on Indoor and Outdoor Air Quality and Public Health in California, UCLA, Fielding School of Public Health. (2020)