

DOCKETED

Docket Number:	17-IEPR-06
Project Title:	Doubling Energy Efficiency Savings
TN #:	221292
Document Title:	SoCalGas Comments on SB 350 Energy Efficiency Savings Doubling Targets Draft Commission Paper
Description:	N/A
Filer:	System
Organization:	Jennifer Morris
Submitter Role:	Public
Submission Date:	9/21/2017 5:22:37 PM
Docketed Date:	9/21/2017

Comment Received From: Jennifer Morris

Submitted On: 9/21/2017

Docket Number: 17-IEPR-06

SoCalGas Comments on SB 350 Energy Efficiency Savings Doubling Targets Draft Commission Paper

Additional submitted attachment is included below.



A  Sempra Energy utility

Tim Carmichael
Agency Relations Manager
State Government Affairs

925 L Street, Suite 650
Sacramento, CA 95814

September 21, 2017

Tel: 916-492-4248

TCarmichael@semprautilities.com

California Energy Commission
Dockets Office, MS-4
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: Comments on CEC Draft Commission Report on SB 350: Doubling Energy Efficiency Savings by 2030, Docket #17-IEPR-06

Dear Commissioners:

Southern California Gas Company (SoCalGas) appreciates the opportunity to provide feedback on the Draft Commission Report, titled *Senate Bill 350: Doubling Energy Efficiency Savings by 2030*. SoCalGas supports the State's ambitious efforts to increase energy efficiency (EE) and reduce greenhouse gas (GHG) emissions. The Draft Commission Report still indicates, on an mmbtu basis, a shortfall in the SB 350 EE target and potential EE savings in 2030. As the State develops innovative new approaches to achieve deeper EE savings, SoCalGas encourages the CEC to consider impacts to feasibility and energy affordability when evaluating proposals and measures such as fuel substitution. These comments are focused on the fuel substitution issues raised in the Draft Commission Report.

1. Site versus source energy

The Draft Commission Report states that the energy savings requirement for fuel substitution is based on site energy. This is an incomplete approach that fully disregards the substantial additional energy needed to generate and deliver electricity to the site versus gas. It also does not account for the variability of electricity cost to utilities or customers, electricity demand, load building,¹ or grid harmonization issues.² "Attachment A SB 350 Energy Savings Potential Development Plan" goes on to state that electric resistance technologies meet the site energy requirement for fuel substitution programs.³ However, those technologies are much worse by any source energy metric and are heavily restricted in California's Building Energy Efficiency

¹ CPUC. "Energy Efficiency Policy Manual, Version 5." July 2013.

² http://docketpublic.energy.ca.gov/publicdocuments/17-bstd-01/tn220876_20170824t105443_82217_zne_strategy_presentation.pdf

³ CEC. NORESO. "Attachment A SB 350 Energy Savings Potential Development Plan", p. 111. September 14, 2017.

Standards (i.e., Title 24, Part 6).⁴ This alone reveals the unreasonableness of site energy comparisons.

As stated in prior comments,⁵ SoCalGas recommends that the Energy Commission instead adopt the well-established and more logical metric of source energy, and more specifically, the latest Time Dependent Valuation (TDV) metric developed by Energy and Environmental Economics, Inc. (E3) for the Energy Commission.⁶ That would be consistent with Title 24, Part 6 energy modeling; the Participant Test in the California Standard Practice Manual;⁷ the Total Resource Cost (TRC) requirement in the three-prong test;⁸ and the source-BTU requirement of the three-prong test. The last of those states: “[p]roponents of fuel substitution programs should calculate the source-BTU impacts using the current CEC-established heat rate.”

2. Cost and feasibility barriers to electrifying space and water heating

SB 350 calls for a cumulative doubling of energy efficiency savings in electricity and natural gas final end-uses by 2030, to the extent doing so is *cost effective*, feasible, and does not adversely impact public health and safety. Attachment A of the Draft Commission Report cites electric heat pump technologies replacing natural gas technologies as a fuel substitution strategy in the residential sector. However, there are currently several economic and technical barriers to implementing electric heat pumps. The “Palo Alto Electrification Final Report,” referenced in A-59 of the Draft Commission Report, concludes that heat pump water heating and heat pump packages are not cost-effective in existing buildings, primarily due to the costly electrical upgrades required.⁹ As the majority of housing in California was built before 1980, most residential electrification projects would therefore not be cost-effective. Further, the report notes that building types included in the analyses did not include high-rise residential or large multi-family buildings, which have much higher water and space heating loads. As 31% of California households reside in multifamily homes, the feasibility and costs of electric heat pumps in that particular housing type must be evaluated. An additional cost impact of heat pump water heaters is the requirement to install condensate drain lines in older buildings, which would cost thousands of dollars for a multi-family home.¹⁰

Households in electrified single family homes, using the 2,100 square foot single family prototype building, will pay an additional \$15 to \$71 per month in utility bills than mixed-fuel homes, according to an E3 electrification analysis (also cited in the Palo Alto Report).¹¹ As

⁴ CEC. “2016 Building Energy Efficiency Standards”. Section 140.4(g), Table 150.1(A), and Section 150.1(c)8.

⁵ SoCalGas. “SoCalGas Comments on SB 350 Energy Efficiency Savings Doubling Targets Staff Papers.” August 3, 2017.

⁶ Energy and Environmental Economics, Inc. “2019 TDV Methodology Report 2-15-17.” February 16, 2017.

⁷ CPUC. “California Standard Practice Manual: Economic Analysis of Demand-Side Programs and Projects.” October 2001.

⁸ CPUC. “Energy Efficiency Policy Manual, Version 5.” July 2013.

⁹ City of Palo Alto. TRC Energy Services. “Palo Alto Electrification Final Report.” November 16, 2016. <http://www.cityofpaloalto.org/civicax/filebank/documents/55069>. Pages 15-16.

¹⁰ Ibid p. 13

¹¹ Electrification Analysis, report completed by Energy & Environmental Economics in July 2016.

electric heat pump measures are not cost-effective in existing homes, and require costly infrastructure additions, electrification could exacerbate housing affordability issues. Cost-effectiveness concerns for all-electric homes are further 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).¹²

As SB 350 also calls for improving the economic conditions in disadvantaged communities,¹³ the CEC must consider electrification impacts to the affordability of energy and housing for the 43% of California households that are lower income,¹⁴ including over one-third of SoCalGas customers—or 1.5 million households—that receive bill assistance each month.

The “Palo Alto Electrification Final Report” also claims that federal preemption is not a concern if electrification ordinances or incentive programs are designed appropriately. In a footnote on page 8, they rightfully state, “[f]ederal preemption occurs when a state or city mandates that a higher efficiency appliance be installed than the minimum efficiency required by the DOE.” The federal minimum efficiency for residential heat pump water heaters at or below 55 gallons is “0.960 - (0.0003 × Rated Storage Volume in gallons)”, and the minimum above 55 gallons is an energy factor of “2.057 - (0.00113 × Rated Storage Volume in gallons).”¹⁵ The report states that all the energy factors used in the analyses were above these minimum efficiencies. Therefore, none of the heat pump water heater scenarios studied there could be mandated in California, and can only potentially be included in programs that are optional to customers.

3. Balanced Energy Approach

With California’s aggressive GHG reduction goals, some have asserted that the best path to achieve those goals is through widespread electrification of all end-uses. However, when appropriate analyses are conducted, concerns arise around grid reliability and harmonization. This issue has been recognized through what is commonly known in California as “the duck curve,” 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.^{16,17,18}

SoCalGas urges 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 California’s energy policies. SoCalGas participates in multiple research and demonstration projects that showcase the feasibility and success of a balanced energy approach. For example, SoCalGas partnered with

http://docketpublic.energy.ca.gov/PublicDocuments/16-BSTD-06/TN212680_20160808T161828_Electrification_Analysis.pdf. Page 33

¹² http://aceee.org/sites/default/files/pdf/conferences/hwf/2017/Howlett_Session3B_HWF17_2.27.17.pdf

¹³ <http://www.cpuc.ca.gov/General.aspx?id=6442453417>

¹⁴ <http://www.hcd.ca.gov/policy-research/plans-reports/docs/California's-Housing-Future-Main-Draft.pdf>

¹⁵ <https://www.regulations.gov/document?D=EERE-2006-STD-0129-0005>

¹⁶ <https://www.eia.gov/todayinenergy/detail.php?id=32172>

¹⁷ http://www.scottmadden.com/wp-content/uploads/2016/10/Revisiting-the-Duck-Curve_Article.pdf

¹⁸ <http://www.nrel.gov/docs/fy16osti/65023.pdf>

LINC Housing Corporation, Southern California Edison, and others to implement deep, near-zero energy retrofits at The Village at Beechwood, a 100-unit low-income multifamily property in Lancaster. Residents of low-income housing in California often carry the brunt of the State's energy burden, allotting a higher proportion of their income to utility costs compared to other income groups. This is primarily because owners of low-income multifamily housing lack the ability to raise rents and reinvest in a property's energy efficiency. This project at The Village at Beechwood has demonstrated and reported cost-effective Very Efficient Retrofits (VERs) packages and the integration of solar technologies in a low-income multifamily project, reducing annual electricity use by 92%, and natural gas by 50%.¹⁹

SoCalGas will continue to support the CEC in defining and executing similar projects in the future.

4. Inter-utility Departing Load/Gaining Load Considerations

To ensure appropriate performance standards are used, the three-prong test required by the California Public Utilities Commission (CPUC) compares the technologies offered by a program/measure/project with the industry standard practice same-fuel substitute technologies available to prospective participants that would have Total Resource Cost (TRC) and Program Administration Cost (PAC) benefit-cost ratio of 1.0 or greater.²⁰ When projects pass the three-prong test, EE credit (and ultimately SB 350 EE target compliance) go to the utility of departing load. The CEC should align with the CPUC's rules in these regards.

Further, the Draft Commission Report states that "unlike traditional energy efficiency programs, fuel substitution causes electric load to increase." In the case of substituting electricity for natural gas, the gas utility would receive the savings credit, as the reduction in natural gas usage results in net energy savings.

5. Fuel Substitution Working Group

As part of developing an approach to fuel substitution, the Draft Commission Report recommends convening a "working group to review SB 1383 and CARB's Short-Lived Climate Reduction Pollutant Reduction Strategy and provide recommendations about complementary or competing roles of substituting electricity for natural gas and replacing natural gas with renewable gas as strategies for reducing GHG emissions." SoCalGas agrees that this is an important step in ensuring that electrification of natural gas end-uses does not preclude adoption of other lower carbon energy sources and decelerate achievement of the State's climate goals. SoCalGas would like to be included in this working group, and can provide input on utilizing renewable gas in the residential sector. As stated in previous comment letters, renewable gas can be used for all existing natural gas end-uses to lower net life-cycle GHG emissions by at least 40%.²¹

¹⁹ http://aceee.org/files/proceedings/2016/data/papers/1_468.pdf

²⁰ Energy Efficiency Policy Manual, Version 5, July 2013 at 24.

²¹ https://www.arb.ca.gov/fuels/lcfs/121409lcfs_lutables.pdf

Conclusion

SoCalGas strongly believes that a diverse energy portfolio that includes multiple fuels and technologies is necessary to meet California's energy needs and environmental policies in a cost-effective and feasible manner.

SoCalGas appreciates the CEC's consideration of these comments on the Draft Commission Report and looks forward to continuing to work on advancing California's energy policy goals and objectives.

Sincerely,

/s/ Tim Carmichael

Tim Carmichael
Agency Relations Manager
Southern California Gas Company