DOCKETED

Docket Number:	15-IEPR-01
Project Title:	General/Scope
TN #:	206582
Document Title:	Sempra Energy Utilities, et al. Comments: to Draft 2015 Integrated Energy Policy Report
Description:	N/A
Filer:	System
Organization:	Sempra Energy Utilities/Tamara Rasberry
Submitter Role:	Public
Submission Date:	11/10/2015 5:35:37 PM
Docketed Date:	11/11/2015

Comment Received From: Tamara Rasberry
Submitted On: 11/10/2015
Docket Number: 15-IEPR-01

Sempra Utilities Comments to Draft 2015 IEPR Report

Attached are comments filed on behalf of the Sempra Energy Utilities, Southern California Gas Company and San Diego Gas and Electric.

Additional submitted attachment is included below.

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California Energy Commission
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1516 Ninth Street
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November 10, 2015

RE: SoCalGas and SDG&E Comments on the Draft 2015 Integrated Energy Policy Report, Docket No. 15-IEPR-01

Dear Commissioners:

The Southern California Gas Company (SoCalGas) and San Diego Gas and Electric (SDG&E), collectively the Sempra Utilities, welcome the opportunity to comment on the Draft 2015 Integrated Energy Policy Report (IEPR). The Sempra Utilities commend the extensive efforts of the California Energy Commission (CEC or Commission) and its staff and offers specific comments in order to stress the importance of addressing the following topics in the Final 2015 IEPR. Most importantly, the Sempra Utilities request that the Commission explore renewable natural gas opportunities to support the development of biogas and power-to-gas (P2G) technologies and consider including these opportunities in the Final IEPR or in the next IEPR.

Chapter 1: Energy Efficiency

The Sempra Utilities support the new federal definition of Zero Net Energy ("ZNE"). The Sempra Utilities support California's ambitious goals to achieve ZNE for all new residential construction by 2020, and for existing residential and all new commercial construction by 2030. We strongly support the use of accurate methods to measure the true cost and environmental impacts of energy use. The Sempra Utilities also support the development and use of accurate methods for calculating lifecycle cost and total greenhouse gas emissions (GHGs) that would result from the generation and consumption of electricity which would be based upon the U.S. Department of Energy ("DOE") definition of ZNE. The source of electrical power generation must be included in ZNE calculations to accurately assess the lifecycle cost, efficiency, and carbon footprint of a given unit of energy.

The Sempra Utilities recommend that the CEC also focus on the potential for renewable natural gas or biogas utilization and not just on advances in cleaner electricity.[1] Natural gas can help move California toward total- building-efficiency and ZNE while providing the comfort and convenience our customer's expect. Mandates to electrify end-uses would disadvantage low income customers and neglects customer preferences for natural gas, the cost effectiveness of natural gas, and efficiencies gas technologies in the home can offer.[2,3]

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[1] Energy + Environmental Economics (E3), *Decarbonizing Pipeline Gas to Help Meet California's 2050 Greenhouse Gas Reduction* Goal, November 2014. Study included as Appendix B-5 of SoCalGas' Draft AB 1257 Comments: http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-04/TN206350-1_20151014T112608_Appendix_B_B1B3_B5B8_to_SoCal_Gas_Comments_to_AB_1257_Draft_Rep.pdf.

[2] Navigant Consulting, Strategy and Impact Evaluation of ZNE Regulations on Gas-Fired Appliances Phase I Technology Report, March 2015

Comprehensive appliance standards should be established to address growing electrical plug loads. This will provide improved awareness and accountability for the energy efficiency performance of consumer electronics, and is also appropriate in the effort to more accurately account for energy consumption across all customer end-uses. The Sempra Utilities support the use of appropriate energy technologies that are technically feasible, economically justified, and safe for our customers to use. As such, current and near term natural gas technologies, including gas water and space heating are already proven safe, are technologically and economically feasible now, and are deserving of continued research and development of energy efficiency investments. The Sempra Utilities agree with the Draft IEPR that California should not assume electrification is the best pathway without extensive analysis of continued improvements in the efficiency of natural gas end-uses.

The energy efficiency goals established by SB 350 are aggressive and the Sempra Utilities urge the CEC to complete sector saturation studies as soon as possible. This data is necessary for an updated energy efficiency potential study that would provide more accurate information on cost effective energy efficiency opportunities available to meet these aggressive goals. In addition, this research should also provide for a better understanding of locational energy efficiency opportunities. The Sempra Utilities support Assembly Bill 802 (AB 802) in conjunction with Senate Bill 350 (SB 350) to ensure energy efficiency targets and other policy changes outlined in SB 350 are achievable. It is also imperative that all legitimate energy savings be allowed to be incentivized and counted by the California Public Utilities Commission (CPUC) to meet the intent of both AB 802 and SB 350. If implemented properly, these bills will take a noteworthy step toward achieving long-term energy savings, meeting climate change emission reduction goals, and actualizing the co-benefits of criteria pollutant curtailment, such as nitrogen oxides (NOx) reductions.

The CEC should conduct two surveys every four years, as required by CPUC code[4]: 1) a residential appliance saturation survey (RASS) and 2) a commercial end-use survey (CEUS). According to the schedule set forth in the regulations, both of these survey efforts are behind schedule. If completed thoroughly, results from both surveys could provide much of the information needed to support end-use forecasting.

The CEC should work closely with investor-owned utilities (IOUs) in customer data related endeavors. The Sempra Utilities request that the CEC work closely with the IOUs early in the process of developing energy data access infrastructure. This will ensure customers have easy access to the appropriate data to make informed energy-saving decisions, while maintaining customer confidentiality and the protection of sensitive information.

Chapter 2: Decarbonizing the Electricity Sector

The Sempra Utilities strongly support in-state job growth and the associated economic benefits. The Draft IEPR recites overarching strategies from *Renewable Power in California: Status and Issues*.[5] One strategy is to "Promote incentives for renewables that create in-state jobs and economic benefits." It is important to recognize, however, that the California economy is best served when the most cost-effective options for meeting Renewable Portfolio Standard (RPS) requirements and GHG reduction goals are selected. These options should not be limited to only California. Decision-makers should take a broader approach, one which objectively considers all renewable resource development options across the entire western interconnection.

Chapter 3: Strategic Transmission Investment Planning

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[3] Results from SoCalGas' 2014 Visions Home Preference Survey was included as Appendix B-1 of SoCalGas' Draft AB 1257 Comments: http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-04/TN206350-1_20151014T112608_Appendix_B_B1B3_B5B8_to_SoCal_Gas_Comments_to_AB_1257_Draft_Rep.pdf

[4] Cal. Admin. Code, Title 20, section 1343

[5] Draft 2015 IEPR, at pp. 67 and 93.

The report indicates that "under a 40 percent RPS there are times when net load becomes negative. This means that the California ISO system would not be able to accommodate all of the renewable generation during that period."[6] This leaves the impression that there is an inability of load within the California Independent System Operator (CAISO) Balancing Authority to absorb all of the must-take generation will result in renewable curtailment, which is not necessarily the case. Exporting power to other balancing authorities is not only possible, but also increases the overall efficiency of the electric system to the ultimate benefit of all consumers. Importantly, GHGs are reduced regardless of whether power is being imported in to or exported from California.

SDG&E believes resource diversification and regional diversification should play an expanded role with higher RPS requirements and GHG reduction targets. [7,8] To this point, aggregated wind generation becomes more predictable and less variable as installation increases across large geographic areas. Wind turbine output aggregated over successively larger areas allows for a decrease in the number of occurrences of very high and very low hourly outputs, among other benefits.[9] A sudden and simultaneous loss of all wind power in a large system is not a credible event and will seldom be the single largest first contingency event for planning purposes.[10]
The Draft 2015 IEPR also notes that "the Energy Commission collaborated with the CPUC to develop the environmental scoring metric that has been an input to the RPS Calculator for developing scenarios of renewable generation projects."[11] SDG&E recently submitted comments to the CPUC on the RPS Calculator model that recommend future versions include a similar approach for incorporating environmental information into the development of RPS portfolios.[12]

SDG&E recommends the Commission equally evaluate the environmental impacts of all renewable resources and transmission expansion options, including those that are out-of-state. The RPS Calculator model should apply a scoring methodology to all options that recognize the relative environmental advantages of renewable resource and transmission expansion development in contrast to other locations. The methodology should combine economic and environmental measures to produce a single metric for each renewable resource option available. This single metric could be used to create accurate supply curves and then preferred RPS portfolios. All things being equal, renewable development on salt-affected, idled farmland for example would tend to have the best metrics and would likely be selected by the RPS Calculator model.[13]

SDG&E cautions CEC against supporting or adopting RPS policies that impose different burdens on various load serving entities. When it comes to compliance with RPS requirements and greenhouse gas reduction goals, there should be a level playing field.

Power-to Gas (P2G) technology offers an opportunity to balance the grid through long-term energy storage. The creation of renewable natural gas (RNG) from electrolysis, known as Power-to-Gas (P2G), should be considered by the CEC and included in the Final IEPR and in the next IEPR. Please review SoCalGas' detailed comments on the Draft AB 1257 Report regarding the need for and opportunity to use P2G to manage grid reliability and energy storage.[14]

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[6] Draft 2015 IEPR, at pp. 74 and 107.
[7] Draft 2015 IEPR, at p. 86: "Different renewable technologies provide different benefits and services to the grid. The procurement process should avoid overreliance on cost alone, rather considering the range of benefits renewables can provide individually and in aggregate."
[8] Draft 2015 IEPR, at pp. 81-82: "Mr. Pettingill stated that the CPUC's LTPP analysis showed that a regional grid would eliminate curtailment and reduce GHG …"
[9] 20% Wind Energy by 2030: Increasing Wind Energy's Contribution to U.S. Electricity Supply at page 90.
[10] *Ibid.*
[11] Draft 2015 IEPR, at p. 92.
[12] SDGE Comments on the (CPUC) Energy Division's Staff Paper Regarding the RPS Calculator at page 5-10.
[13] *Ibid.*
[14] SoCalGas' Draft AB 1257 Comments, p.13, are available at: http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-04/TN206274_20151002T155341_Tamara_Rasberry_Comments_Comments_from_Southern_California_Gas.pdf

Chapter 4: Transportation

The state can achieve GHG and NOx reductions through medium- and heavy-duty on- and off-road vehicles powered by near-zero emission natural gas engines. The Sempra Utilities urge the Commission to adjust pages 133 and 153 in the Final 2015 IEPR to reflect the Final AB 1257 Report[15] which includes information on the California Air Resources Board (ARB) recent certification of a Cummins Westport 8.9 liter natural gas engine at the 0.01 gram NOx standard or 95% lower than the prevailing standard of 0.86.[16] Additionally, we request that the Commission, under *Recommendations* (p.152), include near-term natural gas truck technology development for immediate NOx and GHG reductions as well as incentives for near-zero emission truck engines for heavy-duty vehicles.

Converting heavy-duty vehicle fleets from diesel to natural gas would provide a viable technology pathway to meet California's GHG and NOx goals. Similarly in *Appendix-A, Recommendation 8* of the Draft 2015 IEPR, the Commission should not only focus on examining electric alternatives, but also should include renewable natural gas opportunities in transportation.

Chapter 5: Electricity Demand Forecast

The Sempra Utilities believe there is a strong need to return, at least in part, to end-use forecasting methodology. Prior to 1998, the dominant demand forecasting methodology was end-use forecasting. The process was very engineering oriented, with specific appliance population estimates and annual energy use estimates for each appliance which would be found in a typical home or business. When the electric generation business deregulated shortly after 1998, econometric forecasting models, which do not require much end-use detail, were favored over end-use modeling.

Legislation such as SB 350, points to the need for more detailed forecasts. Models should be focused on the end-use level but before forecasters can build new parameter-driven models, studies must be carried out to gather and analyze detailed end-use data. As recommended in our comments on Chapter 1 above, sector saturation studies need to be carried out as soon as possible to benefit the 2017 IEPR demand forecasting effort.

Chapter 6: Natural Gas

The Commission should consider incorporating additional information into the AB 1257 section in the Final 2015 IEPR. The Final 2015 IEPR should incorporate information from the Navigant Consulting study, titled: *Strategy and Impact Evaluation of ZNE Regulations on Gas-Fired Appliances Phase I Technology Report*[17] which was included as Appendix B-4 in SoCalGas' comments to the Draft AB 1257 Report.[18] Furthermore, in Appendix A, Strategy Recommendation 3 of the Draft 2015 IEPR, the Sempra Utilities suggest that as part of planning beyond 2020, the Commission consider including strategies presented in the Navigant Consulting study.

The Sempra Utilities stress the importance of providing a clear definition of "end-use" in the Final 2015 IEPR. During the November 3, 2015 workshop, one presenter noted that "end-use" gas demand

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[15] Final AB 1257 Report, at p. 42 and 51.

[16] ARB Executive Order A-021-0630. http://www.arb.ca.gov/msprog/onroad/cert/mdehdehdv/2016/cummins_mhdd_a0210630_8d9_0d20-0d01_ng.pdf.

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[18] Navigant Consulting, *Strategy and Impact Evaluation of ZNE Regulations on Gas-Fired Appliances Phase I Technology Report*, March 2015 was included as Appendix B-4 of SoCalGas' Draft AB 1257 Comments: http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-04/TN206350-2_20151014T112610_Appendix_B_B4_to_SoCal_Gas_Comments_to_AB_1257_Draft_Report.pdf

includes everything except gas electric generation. The "end-use" distinction would be a valuable addition to the Final 2015 IEPR. Compared to the 2014 California Gas Report (CGR), the IEPR "Mid-demand" (reference case) gas price forecast is very similar to the 2014 CGR forecast. The IEPR "Mid-demand" statewide gas demand forecast declines slightly faster (dropping an average of 0.6% per year from 2015 to 2026) than the 2014 CGR's projected 0.4% annual decline (from 2014 to 2025). Additionally, the Sempra Utilities request the Commission provide a thorough explanation in the next IEPR of how the specific heating-degree-day forecast values are developed in each scenario.

Chapter 7: Updates from 2013 IEPR and 2014 IEPR Update

Background information provided in Chapter 7, Electricity Infrastructure in Southern California, is inaccurate.[19] SDG&E was recognized, by PA Consulting Group, with the 2015 ReliabilityOne™ Award for Outstanding Reliability Performance among utilities in the western states and Canada for the 10th year in a row. SDG&E remains focused on providing adequate infrastructure and reliable, safe service for its customers. However, the background description in Chapter 7 implies otherwise and suggests that reliability in the San Diego area is lacking, when in fact, the opposite is true. Footnote 253, which references two events in Southern California which resulted in customer outages, implies the outages were due to inadequate infrastructure. Analysis of those events, however, showed that the major causes were operational issues and not infrastructure related. Thus, SDG&E does not believe it is appropriate to include these as examples of issues being addressed regarding Southern California reliability. The report should provide a more balanced assessment of southern California reliability and infrastructure needs.

CAISO should review local capacity requirements in Southern California as part of the 2016 Long Term Procurement Plan (LTPP). With regard to capacity, SDG&E appreciates the CEC staff's efforts to look at local capacity needs. The model used is similar to analysis SDG&E has been conducting for close to 15 years. SDG&E has learned that these tools are useful to identify directional trends but lake the precision and accuracy required for making decisions. There is no substitute for detailed transmission modeling since the overall capability of the transmission system changes based on many factors beyond the quantity of capacity and include location. SDG&E supports the IEPR recommendation that CAISO complete a detailed review of local capacity requirements in Southern California as part of the 2016 LTPP.

Chapter 9: Climate Change Research

The Sempra Utilities recommend the Commission continue to support diversifying the state's energy portfolio to manage risk, to support energy infrastructure resiliency, and to adapt to climate change. The Sempra Utilities appreciate the discussion on *The Vulnerability of California's Energy Sector.*[20] As weather becomes more extreme from droughts, hurricanes and El Nino events, there have been too many lessons in the state's history and across the country that over reliance on one single energy source can create avoidable and unnecessary risks for the economy and public safety. The aggressive move to develop microgrids, which can operate separately from the grid for a limited timeframe, is further evidence that there is a need for a new, more dynamic model of the electric grid.

Additionally, in the section *Improve Methods to Estimate GHG Emissions from the Energy System,*[21] the Sempra Utilities recommend that the latest research on natural gas distribution system methane losses conducted by Washington State University (WSU) be included in the Final IEPR. This is the most robust study to date and relied on extensive sampling and methods superior to the studies of 20 years ago that resulted in the emission factors used in mandatory reporting programs under ARB and the Environmental

[19] Draft 2015 IEPR, at p. 193.
[20] Draft 2015 IEPR, at p. 270.
[21] Draft 2015 IEPR, at p. 288.

Protection Agency (EPA). The estimated emission losses using real leak data and these new factors are consistent with internal engineering lost and unaccounted for gas studies and reflect the modernization of the distribution systems over the last two decades. Other studies by the Gas Technology Institute (GTI) show similar results falling within the uncertainty ranges of the measurements.

We appreciate the opportunity to provide comments and input on the Draft 2015 IEPR. Please do not hesitate to reach out for more information.

Respectfully submitted,

Tamara Rasberry