DOCKETED	
Docket Number:	25-IEPR-03
Project Title:	Electricity and Gas Demand Forecast
TN #:	265930
Document Title:	Load Modifier Scenario Updates
Description:	N/A
Filer:	System
Organization:	Southern California Gas Company
Submitter Role:	Public
Submission Date:	9/9/2025 2:12:21 PM
Docketed Date:	9/9/2025

Comment Received From: Southern California Gas Company
Submitted On: 9/9/2025
Docket Number: 25-IEPR-03

SoCalGas Comments on Load Modifier Scenario Updates

Additional submitted attachment is included below.

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September 9, 2025

Vice Chair Siva Gunda
California Energy Commission
Docket Unit, MS-4
Docket No. 25-IEPR-03
715 P Street
Sacramento, California 95814-5512

Subject: Comments on the IEPR Commissioner Workshop on Energy Demand Forecast Load Modifier Scenario Updates

Dear Vice Chair Gunda,

Southern California Gas Company (SoCalGas) appreciates the opportunity to provide comments on the California Energy Commission's (CEC) Integrated Energy Policy Report (IEPR) Commissioner Workshop on Energy Demand Forecast Load Modifier Scenario Updates (Workshop) held on August 26, 2025. The CEC's demand forecast plays a role in shaping California's energy planning efforts. By incorporating scenarios that account for a wide range of uncertainties and possibilities, the State enhances its capacity to strategically prepare for a reliable, affordable, and resilient energy future for the interconnected and interdependent electricity and gas systems. Uncertainty regarding demand forecasting has exponentially increased over the past decade. There is a vast spectrum of potential outcomes in overall energy demand that are influenced by the level of self-generation, retail prices for electricity and natural gas, fuel substitution, and climate change.

In the CEC's development of scenarios for its energy demand forecast, it is imperative that the scenarios capture the entire range of possible outcomes rather than project many scenarios which converge on a similar end result. The convergence of multiple scenarios on similar end results risks giving the public a false impression that these scenarios have a greater likelihood of coming to fruition, which is not necessarily grounded in the reality of California's energy transition as it currently unfolds.

Our comments focus on the following topics: 1) The CEC's Additional Achievable Fuel Substitution (AAFS) scenarios should include six distinct scenarios which result in outcomes that capture the full range of possibilities instead of five of the six scenarios converging on a similar outcome, 2) CEC should consider caveating the uncertainties in its retail rate forecast and caution against its use as a sole or primary input in any regulatory proceeding or business decisions, 3) The interdependence between electric and natural gas will increase as peak electric risk evolves and will require increased coordination between the two systems for statewide energy system safety and reliability, and 4) SoCalGas supports CEC's efforts on tracking heat pump adoption and the impact on energy use.

1) **The CEC's Additional Achievable Fuel Substitution (AAFS) scenarios should include six distinct scenarios which result in outcomes that capture the full range of possibilities instead of five of the six scenarios converging on a similar outcome.**

The CEC's AAFS scenarios should include six very distinct scenarios. CEC staff explained that there are a lot of uncertainties due to shifting federal and state policies and therefore it is important to capture the uncertainties through scenarios that lead to a wide array of outcomes. However, for the AAFS scenario, CEC staff presented five out of six scenarios that use the singular assumption outcome of 100 percent replace-on-burnout for space and water heating appliances. They also noted the "Statewide EB[1]" which represents statewide zero emission appliance replacements have the largest impact among the various AAFS scenarios. However, statewide zero emission appliance standards have not been adopted in the State and the California Air Resources Board (CARB) zero-NOx emission space and water heater rulemaking that began in 2024 is currently on hold for 2025. It would be premature to assume the outcome of that rulemaking process and apply it to the majority of the AAFS scenarios. In fact, previous AAFS scenarios included impacts from the South Coast Air Quality Management District's (South Coast AQMD) proposed amendments to Rule 1111 and Rule 1121 (zero emission space and water heating), which were not approved after more than 18 months of rule development.[2]

Since there is so much uncertainty and there is expected to be extensive impacts from the AAFS scenarios on California's energy planning, it is in the public interest to choose a range of six scenarios that fully capture the spectrum of outcomes that could be possible instead of multiple scenarios that converge on similar end points. Ideally, each scenario should be sufficiently differentiated from one another.

These recommended changes would provide a much wider range of outcomes of electric demand increases if certain rules and regulations do come to fruition and also outcomes of natural gas demand changes if these regulations do not. Developing a broader spectrum of scenarios would provide the ability for the CEC to choose a scenario set for electric statewide and local planning as well as scenarios that would provide valuable information for gas system planning and inform

[1] Existing buildings (EB).
[2] SCAQMD, Proposed Amended Rules (PAR) 1111 and 1121, available at: https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-1111-and-rule-1121

the next California Gas Report. A broad spectrum of scenarios would provide a greater likelihood that future actual gas and electric demands will fall within the spectrum. Please see Figure 1 below for potential AAFS scenarios SoCalGas is proposing.

Figure 1: Potential AAFS Scenarios Proposed by SoCalGas

AAFS FSSAT Factors	**AAFS 1**	**AAFS 2**	**AAFS 3**	**AAFS 4**	**AAFS 5**	**AAFS 6**
End Uses	SH & WH	SH & WH	SH & WH	SH & WH	SH, WH, C, CD	SH, WH, C, CD
Substituted Fuel Types	Gas	Gas	Gas	Gas	Gas	Gas & RP
NC (Beyond PiCS T24)[3]				80% in 2029	90% in 2029	100% in 2029
Statewide EB[4]		GT 25% by 2040	GT 50% by 2040	GT 100% by 2040	CARB SP 100% Targets	SIP linear to 100% by 2030
Bay Area PAR 9-4 & 9-6[4]				Included	Included	Included
South Coast PAR 1146.2[4]				Included	Included	Included

* For definitions of the abbreviations, see CEC's original table for AAFS scenarios[5]

For NC (New Construction), the Ninth Circuit decision in the Berkeley lawsuit was clear that building codes could not eliminate natural gas as an option for builders.[6] As a result, we believe it would not be reasonable to consider three scenarios that assume 100% all-electric buildings for new construction.

[3] The Ninth Circuit's decision in the *Berkeley* lawsuit was clear that "an ordinance that effectively eliminates the 'use' of an energy source" is preempted by EPCA. *Cal. Rest. Ass'n v. City of Berkeley*, 89 F.4th 1094, 1102 (9th Cir. 2024). The court held that "EPCA would no doubt preempt" a regulation "that directly prohibits the use of covered natural gas appliances in new buildings," and that Berkeley could not do indirectly (by banning gas piping) what it could not do directly. *Id.* at 1107. However, we understand the CEC has a desire to model a scenario that assumes 100% electrification. In acknowledgement of that, we recommend that the CEC only include one scenario that includes 100% all-electric buildings in new construction. We firmly believe this scenario is unrealistic as it would require 100% electrification due to consumer choice.

[4] The validity of South Coast AQMD's Rule 1146.2 is currently being appealed to the Ninth Circuit Court of Appeals. Based on the Court's reasoning in *Berkeley,* we believe the Court will find this regulation is preempted by EPCA. If the Court determines the rule is preempted by EPCA, the decision would have similar ramifications for BAAQMD's 9-4 and 9-6 as well as any statewide zero-emission regulation that would occur at CARB. While we understand that the CEC plans to run scenarios that includes these regulations, given the pending litigation, we recommend that the CEC limits the number of scenarios included.

[5] CEC, Slide 20, "2025 IEPR Draft AAFS Scenario Characterizations – Zero-Emission Modeling," available at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=265764&DocumentContentId=102614

[6] In *Berkeley,* the Court held that EPCA preempts all regulations "that relate to 'the quantity of [natural gas] directly consumed by' certain consumer appliances at the place where those products are used." Id. at 1101. "[A] regulation on 'energy use' fairly encompasses an ordinance that effectively eliminates the 'use' of an energy source." *Id.* at 1102.

For Statewide EB (Existing Buildings), the Ninth Circuit decision in *Berkeley* also would arguably prohibit building codes that eliminate natural gas as an option for builders. Moreover, there is currently no active regulation in development to require all space and water heating appliances to be replaced with electric upon burnout. Therefore, we recommend AAFS 1-3 to include no Statewide EB, 25% upon 2040, and 50% upon 2040, respectively, to help make sure long-term gas forecasting does not prematurely reduce core gas throughput without any indication that regulation will be adopted and enforceable.

Regarding SCAQMD Rule 1146.2, Rinnai et al. filed an appeal in August 2025 which will now be decided by the Ninth Circuit Court of Appeals.[7] We believe the Ninth Circuit Court of Appeals will come to a similar conclusion as it did in the *Berkeley* lawsuit and find that the rule is preempted. We recognize the CEC would like to include this rule because it is currently adopted, and therefore recommend that the CEC only include Rule 1146.2 in AAFS 4-6. For detailed discussion of the proposed scenarios, please see Appendix 1.

2) **The CEC should consider caveating the uncertainties in its retail rate forecast and caution against its use as a sole or primary input in any regulatory proceeding or business decisions.**

Retail rate forecasts are extremely complex, yet any forecast that is released publicly carries significant weight in influencing public policy and business decisions. The CEC's forecast is no exception. Given this, if the CEC includes a retail rate forecast, it should carefully caveat the uncertainties and caution against its use as a sole or primary input in any regulatory proceeding or business decisions.

Regarding the uncertainties and their magnitude of impact, the uncertainties slide from the Retail Electricity Rate Forecast presentation during the Workshop acknowledge the limitations, however, it does not provide the public with an understanding of the magnitude of each component's impact on outcome.[8] For example, one of the utilities showed a roughly 10 cents per kWh decrease due to a change in transmission costs (close to a 30 percent drop in residential rates).[9] The slide also noted that the data center impact could reduce Pacific Gas and Electric Company (PG&E's) system average rate by 1.25 cents per kWh.[10] Meanwhile, historical prices displayed in the slide indicate a 30-60 percent increase in residential retail price of electricity over the last 5-10 years.[11]

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[7] See Plaintiffs' Notice of Appeal, *Rinnai America Corp. v. South Coast Air Quality Management District*, 2:24-cv-10482-PA-PD, in which ten parties allege the South Coast AQMD's rule is preempted by the Energy Policy Conservation Act (EPCA).

[8] CEC, Slide 14, "Retail Electricity Rate Forecast," available at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=265766&DocumentContentId=102612.

[9] CEC, Slide 12, "Retail Electricity Rate Forecast," available at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=265766&DocumentContentId=102612.

[10] CEC, Slide 5, "Retail Electricity Rate Forecast," available at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=265766&DocumentContentId=102612.

[11] CEC, Slide 9, "Retail Electricity Rate Forecast," available at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=265766&DocumentContentId=102612.

Among various uncertainties, the amount of wildfire mitigation costs that are included in rates are unknown. However, if wildfire mitigation costs included in rates stay consistent with the last couple of years or significantly increase, the price forecast currently does not reflect these additional possibilities. In addition, the rate forecast does not reflect the possibility of data centers choosing onsite generation rather than interconnection to the grid and the possibility that over $30 billion of additional transmission may be needed based on California Independent System Operation (CAISO's) 2024 20-Year Transmission Outlook.[12]

Additionally, when forecasting electric rates, the CEC used revenue projections provided by the electric utilities and did not fully account for the significant increase of both electric revenue and rates in the last decade. In contrast, when projecting natural gas rates, the CEC used only historical data, resulting in a significantly high natural gas price in the forecasting horizon. The methodologies used when forecasting electric and natural gas rates were inconsistent, markedly different, and thus the end results are not comparable (and risk creating the perception they are). We encourage the CEC to use consistent calculation methods to increase the accuracy of both electric and natural gas price forecasts and to enhance the comparability of forecasted electric and natural gas prices. To the extent inconsistent methodologies are used, these disparate approaches should be clearly noted and explained to increase transparency in the forecasting process.

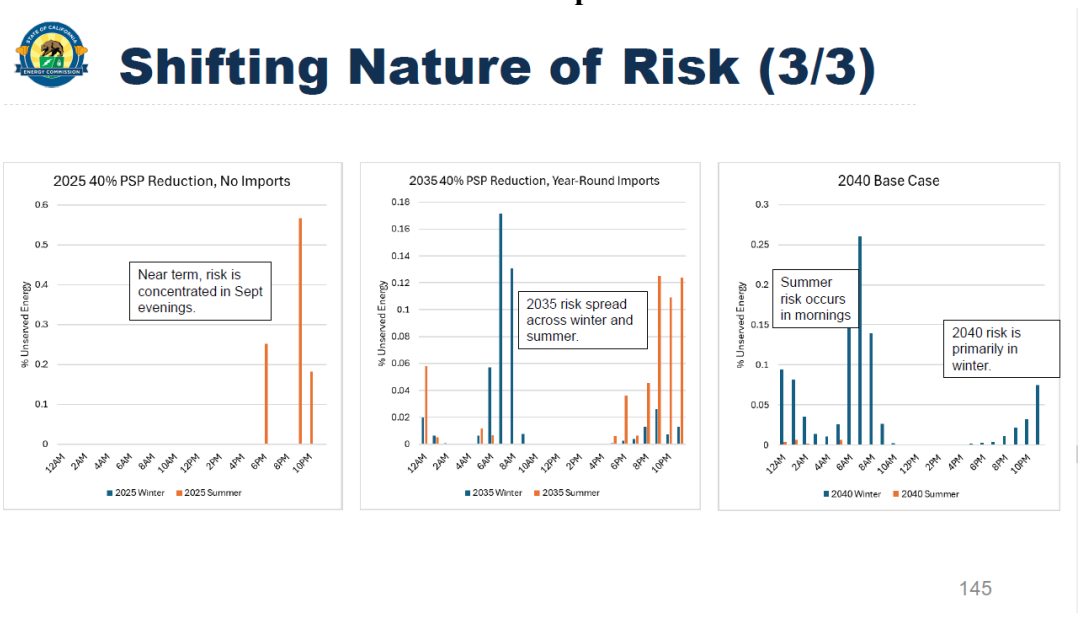
3) **The interdependence between electric and natural gas will increase as peak electric risk evolves and will require increased coordination between the two systems for statewide energy system safety and reliability.**

As the State electrifies end uses between now until 2040, new peak hour risk will arise in the winter season and become primarily concentrated in the early winter morning. By 2040, the primary electricity risk is expected to be in the winter. (See Figure 2 below for the CEC's characterization of the shifting nature of risk.) There is little to no solar power available in the early winter morning, unlike during the summer peak which occurs in the afternoon or earlier evening. In addition, battery storage will likely be unavailable during an early winter morning after having been discharged to meet significant space heating demand during a long winter night.

At least in the medium term, the electricity demand will continue to rely on natural gas-fired generation to meet this shifting peak demand. This will require both electric and natural gas utilities to work closely together to maintain the reliability of both systems during wintertime as well as in summer.

[12] CAISO, "2024 20-Year Transmission Outlook," available at: https://www.caiso.com/documents/2024-20-year-transmission-outlook-jul-31-2024.pdf.

Figure 2: Shifting Nature of Risk from the CEC's 2025 Summer Energy Reliability Workshop[13]



4) SoCalGas supports the CEC's efforts on tracking heat pump adoption and the impact on energy use.

SoCalGas strongly supports the CEC's effort to track residential heat pump adoption. Housing permit data published in the Housing Element Annual Progress Report[14] on the State's Open Data Portal by the California Housing and Community Development Department (HCD) has the potential to be an invaluable public source of actual heat pump installation data as part of residential renovation projects. Currently, information on permit applications that indicate installation of heat pumps is made public only through reporting by a few municipalities in California. Increased heat pump installation reporting compliance by all municipalities would result in a comprehensive and granular data set of heat pump installations that would allow for the analysis of changes in gas and electricity usage before and after installation. The CEC can play a key role in encouraging municipalities to share more detailed permit information.

[13] CEC, Slide 145, "CEC 2025-40 Probabilistic Reliability Analysis," available here: https://efiling.energy.ca.gov/GetDocument.aspx?tn=262897&DocumentContentId=99547.

[14] California Open Data Portal, "Housing Element Annual Progress Report (APR) Data by Jurisdiction and Year - Dataset" available at: https://data.ca.gov/dataset/housing-element-annual-progress-report-apr-data-by-jurisdiction-and-year.

Similarly, information regarding heat pump installations recorded in electric utility time-of-use (TOU) tariffs like San Diego Gas & Electric Company (SDG&E's) TOU-ELEC[15], provides additional data on heat pump installations and allows for the subsequent analysis of changes in gas and electricity usage. The CEC should work with state agencies like HCD and gas and electric utilities to develop and harness these data sources as part of its heat pump adoption data tracking and demand analysis efforts.

Conclusion

SoCalGas appreciates the opportunity to provide feedback on the CEC's demand forecast and scenario planning efforts. While the IEPR provides important context for consideration in energy system planning, SoCalGas has identified several potential deficiencies with the current approach that may unnecessarily introduce reliability and other risks to the natural gas system if the scenarios are used inappropriately for gas system planning. These deficiencies include a lack of gas demand for electric generation and scenarios that include moderate fuel substitution based on historical adoption rates. Additionally, SoCalGas notes that the IEPR does not model potential changes in number of customers supported by each energy system, focusing rather only on energy demand, which could significantly change the retail rate forecasts if something like an enhanced fixed charge were to occur.

As California navigates an increasingly complex energy landscape, it is essential that the CEC's modeling efforts reflect the full range of uncertainties and possible outcomes—from fuel substitution and retail rate forecasts to seasonal peak risks and heat pump adoption. By refining its assumptions and expanding its data inputs, the CEC can enhance the accuracy, transparency, and usefulness of its demand forecast to better serve California's energy future.

Respectfully,

/s/ Kevin Barker

Kevin Barker
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Energy and Environmental Policy

[15] SDG&E, "Schedule TOU-Elec," available at: https://tariffsprd.sdge.com/view/tariff/?utilId=SDGE&bookId=ELEC&tarfKey=1065.

Appendix 1: Detailed Explanation for Potential AAFS Scenarios Proposed by SoCalGas

Figure 1: Potential AAFS Scenarios Proposed by SoCalGas

AAFS FSSAT Factors	AAFS 1	AAFS 2	AAFS 3	AAFS 4	AAFS 5	AAFS 6
End Uses	SH & WH	SH & WH	SH & WH	SH & WH	SH, WH, C, CD	SH, WH, C, CD
Substituted Fuel Types	Gas	Gas	Gas	Gas	Gas	Gas & RP
NC (Beyond PiCS T24)				80% in 2029	90% in 2029	100% in 2029
Statewide EB		GT 25% by 2040	GT 50% by 2040	GT 100% by 2040	CARB SP 100% Targets	SIP linear to 100% by 2030
Bay Area PAR 9-4 & 9-6				Included	Included	Included
South Coast PAR 1146.2				Included	Included	Included

New Construction (Beyond PiCS T24): The Ninth Circuit decision in the Berkeley lawsuit was clear that building codes could not eliminate natural gas as an option for builders.[16] Therefore, any assumption that 100% of new construction would be electric would be premised on incentives, not because electrification would be legally required in standards. Therefore, including three scenarios underpinned by incentive assumptions rather than legal mandates does not offer a sufficiently robust range of options that are both legally viable and realistically implementable. Title 24 codes have included additional costs associated with electrified homes and therefore driving new construction toward full electrification. Because of this, it would be reasonable to have at least three scenarios that do not include any standards above current building code for AAFS 1-3. AAFS 4-6 should include an additional scenario that includes 80% fully electrified homes, one scenario that includes 90% fully electrified homes, and an extreme case that includes 100% fully electrified homes, even though it isn't consistent with existing law, to cover the most aggressive scenario.[17]

[16] See *California Restaurant Association v. City of Berkeley*, 89 F.4th 1094 (9th Cir. 2024) the Court held that EPCA preempts all regulations "that relate to 'the quantity of [natural gas] directly consumed by' certain consumer appliances at the place where those products are used." *Id.* at 1101. "[A] regulation on 'energy use' fairly encompasses an ordinance that effectively eliminates the 'use' of an energy source." *Id.* at 1102.

[17] The Ninth Circuit's decision in the *Berkeley* lawsuit was clear that building codes that effectively eliminate natural gas as a fuel option is preempted by EPCA. However, we understand the CEC has a desire to model a scenario that does 100% electrification. In acknowledgement of that, we recommend that the CEC only include one scenario that includes 100% all-electric buildings in new. We firmly believe this scenario is unrealistic as it would require 100% electrification due to consumer choice.

Statewide Existing Buildings:[18] There is currently no active regulation in development to require all space and water heating appliances to be replaced with electric upon burnout. Including five scenarios that include 100% replacement on burnout is premature and does not take into account the legal issues concerning such a regulation. However, if the CEC is set on including some scenarios that include 100% electrification of appliances on burnout at different time intervals, then we recommend AAFS 4-6 to include 100% electrification beginning in 2040, the staged approach from the Scoping Plan, and 100% electrification from the State Implementation Plan (SIP), respectively. These scenarios could still be helpful for electricity planning purposes. Conversely, there should be at least one scenario that does not include any additional replace-on-burnout other than what is included in programmatic fuel substitution. Further, there could be additional scenarios that ramp up replace-on-burnout if consumer choice in the future does shift to replacing gas appliances with electric appliances in greater numbers. SoCalGas recommends AAFS 1-3 to include no Statewide EB, 25% upon 2040, and 50% upon 2040, respectively. This would help to make sure long-term gas forecasting does not prematurely reduce core gas throughput.

Bay Area 9-4 and 9-6:[18] In early 2025, CARB withdrew Bay Area Air Quality Management District (BAAQMD's)'s Rules 9-4 and 9-6 from the SIP and therefore the BAAQMD will not receive any SIP credit associated with these rules. Also, BAAQMD is currently considering revisions to Rule 9-6. Because of the uncertainty regarding both of these rules, it would be prudent to reduce the number of AAFS scenarios that include Rules 9-4 and 9-6. Therefore, we recommend AAFS scenarios 1-3 should not include Rules 9-4 and 9-6 because they have been withdrawn from submittal into the SIP.

SCAQMD Rule 1146.2:[18] Similar to BAAQMD's rules, SCAQMD's Rule 1146.2 is not currently included in the SIP and has not been submitted to the United States Environmental Protection Agency (U.S. EPA) for inclusion in the SIP. It is unclear if CARB plans to submit it for SIP approval, but if recent history provides any evidence of the future, it is unlikely that CARB will submit it for SIP approval. Moreover, the status of Rule 1146.2 is uncertain given pending litigation. Rinnai et al. filed a lawsuit in December 2024 arguing that the rules do not comport with federal Energy Policy and Conservation Act (EPCA). In July 2025, a federal district court judge upheld the rule.[19] However, in August 2025, Rinnai et al. filed an appeal which will now be decided by the Ninth Circuit Court of Appeals.[20] Because of the uncertainty of enforceability of Rule 1146.2, the AAFS scenarios should not include Rule 1146.2 in five of the six scenarios.

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[18] South Coast AQMD's Rule 1146.2 is currently being appealed to the Ninth Circuit Court of Appeals. Based on the Court's reasoning in *Berkeley,* we believe the Court will find this regulation is preempted by EPCA. Such an option would have similar ramifications for BAAQMD's 9-4 and 9-6 as well as any statewide zero-emission regulation that would occur at CARB. While we understand that the CEC plans to run scenarios that includes these regulations, given the pending litigation, we recommend that the CEC limits the number of scenarios included.

[19] See US District Court, Central District of California decision, https://caanet.org/u/2025/07/079-2025-07-18-Minutes-Civil-Order-Granting-Def-MSJ.pdf

[20] See Plaintiffs' Notice of Appeal, *Rinnai America Corp. v. South Coast Air Quality Management District*, 2:24-cv-10482-PA-PD, in which ten parties allege the South Coast AQMD's rule is preempted by the Energy Policy Conservation Act (EPCA).