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SCE Comments on IEPR Workshop on Preliminary Natural Gas Price Forecast and Outlook

Additional submitted attachment is included below.

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Catherine Hackney
Director, Regulatory Affairs

May 6, 2019

California Energy Commission
Docket Office, MS-4
Re: Docket No. 19-IEPR-08
1516 Ninth Street
Sacramento, CA 95814-5512
docket@energy.ca.gov

Re: Southern California Edison Company's Comments on the California Energy Commission Docket No. 19-IEPR-08: IEPR Workshop on Preliminary Natural Gas Price Forecast and Outlook

Dear Commissioners:

On April 22, 2019, the California Energy Commission (CEC) held the *IEPR Commissioner Workshop on Preliminary Natural Gas Price Forecast and Outlook* (Workshop) as part of the CEC's 2019 Integrated Energy Policy Report (IEPR) Proceeding. The Workshop participants discussed the proposed scope of the *2019 Natural Gas Outlook*, natural gas price forecasts and trends, production cost modeling results, and renewable natural gas issues. Southern California Edison (SCE) is pleased to offer the following comments on the Workshop for the CEC's consideration.

I. Considering Natural Gas Price Spikes in Southern California

The CEC should reassess whether it is necessary to incorporate expected natural gas penalty costs into IEPR forecasting, given that Southern California has experienced unprecedented extremes in natural gas price since October 2017. On July 23rd, 2018, SoCal Citygate gas prices near $40 were a significant contributing factor that drove day-ahead power prices to $1000/MWh, costing SCE's electric ratepayers $150 million during the week of July 23rd, 2018.[1] SCE presented to this Commission and the California Public Utilities Commission (CPUC) about the causes and policy options for ameliorating these extremes on January 11th, 2019.

SCE considers the IEPR Common Cases gas price forecast, which uses fundamental costs of natural gas plus published intra-state transportation rates, to be a reasonable approach. Historical conditions were less vulnerable to penalties, making those costs a negligible aspect of

[1] Decision Granting in Part and Denying in Part the Petition for Modification Filed by Southern California Edison Company and Southern California Generation Coalition of Commission Decisions (D.) 15-06-004 and 16-06-039 as Modified by D.16-12-016 Adoption in Part and Rejection in Part of the Settlement Agreement Filed by the Settling Parties, page 17.

long-term forecasts. However, the assumption of zero penalty prices implies that gas delivery will be unconstrained.

The increase in SoCal Citygate gas price volatility since October 2017 is known to have a variety of contributing factors, including pipeline outages, restricted operation of Aliso Canyon, and the scheduling order of gas flows versus electric generation. Volatility and scheduling uncertainty increase the probability of gas flow deviation penalties, which substantially impact average gas prices. Although the greatest penalty charges may occur infrequently, they substantially impact the items that the CEC forecasts. For example, a single day with average daily throughput and where gas price settles at $40 adds $0.11 to the annual average gas price,[2] which explains nearly all the forecast errors between Staff's 2017 SoCal Border forecast against actuals.[3] While the CPUC is considering temporary relief of those pricing conditions for the summer of 2019, the long-term IEPR outlook is an opportunity to deeply consider the likely scenarios for the future of gas pricing in the state. For example, it has become unclear whether SoCalGas can meet its pipeline maintenance needs along reasonable timelines. The recent behavior suggests that the Commission could expect future gas system issues to create substantial costs for electric ratepayers by the time the pipelines are repaired. In fact, due to ongoing gas system constraints, gas storage and other cost-effective balancing options are no longer available to electric generators. To address this issue, SCE has requested that a proceeding be opened to consider allowing electric generators to purchase full requirements service from the natural gas utilities.

Given the importance of natural gas prices to the energy planning activities of the State, whether and to what extent the gas system incentives and constraints are reformed will have long-range implications on resources. How those risks and costs are reflected in the 2019 IEPR is more important than ever.

II. North American Gas Early 2020's Price Lull Expectation

Compared to the IEPR Mid Demand Case, which escalates year-on-year, SCE expects that strong associated gas production will drive Henry Hub gas prices lower for the next 3-4 years. This view is supported both by the recent price history (Figure 1) and SCE's gas fundamentals outlooks published by IHS Markit.[4] Furthermore, the expected price "lull" at Henry Hub is visible in EIA's Annual Energy Outlook, where the annual average gas price to electric generators decreases from 2018-2019 as well as 2020-2021.[5] Henry Hub prices may not reach the $3/Mcf mark in real 2018$ terms until 2025.

[2] $40 / 365 days per year = $0.109.
[3] From 'March_2019_Model_CEC-200-2014-008.xlsx', sheet Mid-Demand_Annual_3-9-2018, Hub: US-Ehrenberg forecasts, cell DW2, price of $2.917 forecasted compared to $2.85 annual average calculated from Gas Daily.
[4] IHS Markit, North American Natural Gas Long-Term Outlook: Lower for Longer, February 28th, 2019, page 16.
[5] EIA Annual Energy Outlook 2019, Table: Energy Prices by Sector and Source, Electric Power: Natural Gas.

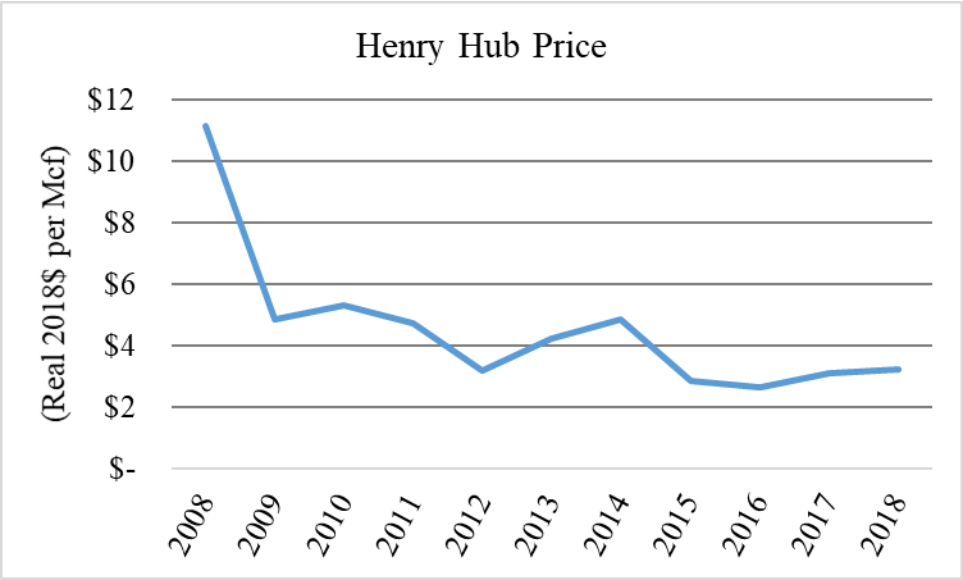

Figure 1. Historic Henry Hub Annual Average Price, 2008-2018. Data from Gas Daily, series "GD-HENRY/HUB-DAILY"

North American natural gas production grew by more than 33% between 2008 and 2018.[6] Techniques of hydraulic fracturing and horizontal drilling made new reserves available in Texas, Louisiana, and Appalachia. Subsequently, entirely new, low-cost gas fields such as Marcellus and Utica were brought on line while, in other locations, gas has been offered at negative prices.[7] Since associated gas is a byproduct of oil production, an incremental unit of associated gas has an even stronger negative impact on price than other non-associated gas supplies. Producers of associated gas need not be as responsive to natural gas prices when their profits come from oil. The ratio of associated gas production to total production has steadily risen since 2011 and is expected to strengthen until leveling off around 38% in 2026 (Figure 2).

[6] IHS Markit, North American Natural Gas Long-Term Outlook: Lower for Longer, February 28th, 2019.
[7] Reuters, Debroop Roy, April 23, 2019; Apache Delays Production of Permian Natural Gas After Weak Prices, https://www.reuters.com/article/us-apache-natural-gas-permian/apache-delays-production-of-permian-natural-gas-after-weak-prices-idUSKCN1RZ0ZO.

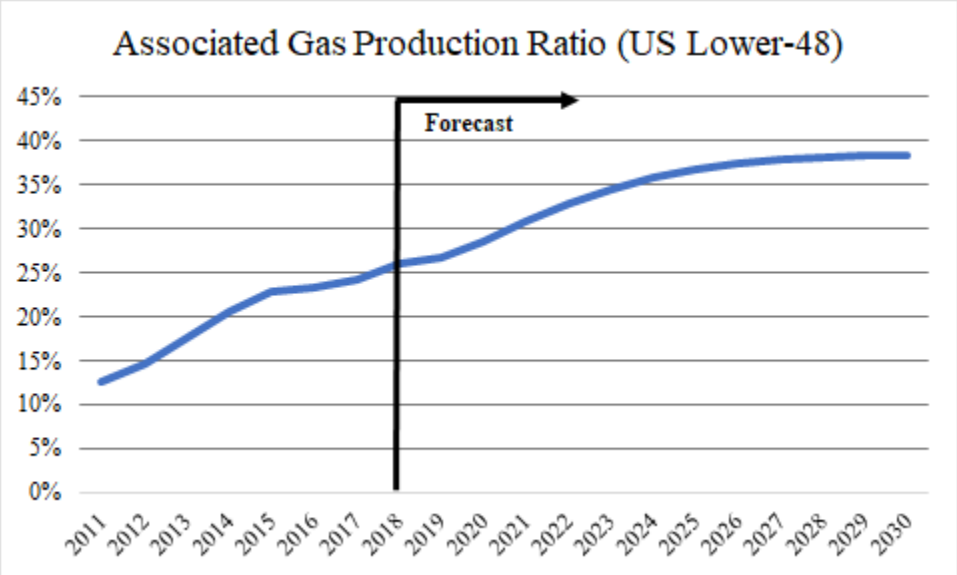

Figure 2. Historic and Forecasted Associated Gas Production as Percent of Total Gas Production. Data from IHS Markit Long Term Outlook, February 28th, 2019. See Footnote 6.

In recent years, the negative impact of production on prices has surpassed expectations. Between 2008 and 2018, the 33% increase in production translated to 70% lower prices.[8] Yearly analysis shows that prices declined half the time year on year – often by double digit percentages. Much of these price cuts occurred while demand was growing as fast as supply (Figure 3) – underscoring the outsized impact of associated gas on price. In the years ahead, current estimates indicate that at least 200 Tcf of associated gas is available at negative prices. Demand increases have a long way to go before reversing the downward price trend. Even unprecedented installations of gas generation and LNG export facilities cannot match oil-driven associated gas strength.

[8] $11.18/Mcf in 2008 and $3.23/Mcf in 2018 calculated in real 2018$ from Gas Daily assuming 2% annual inflation.

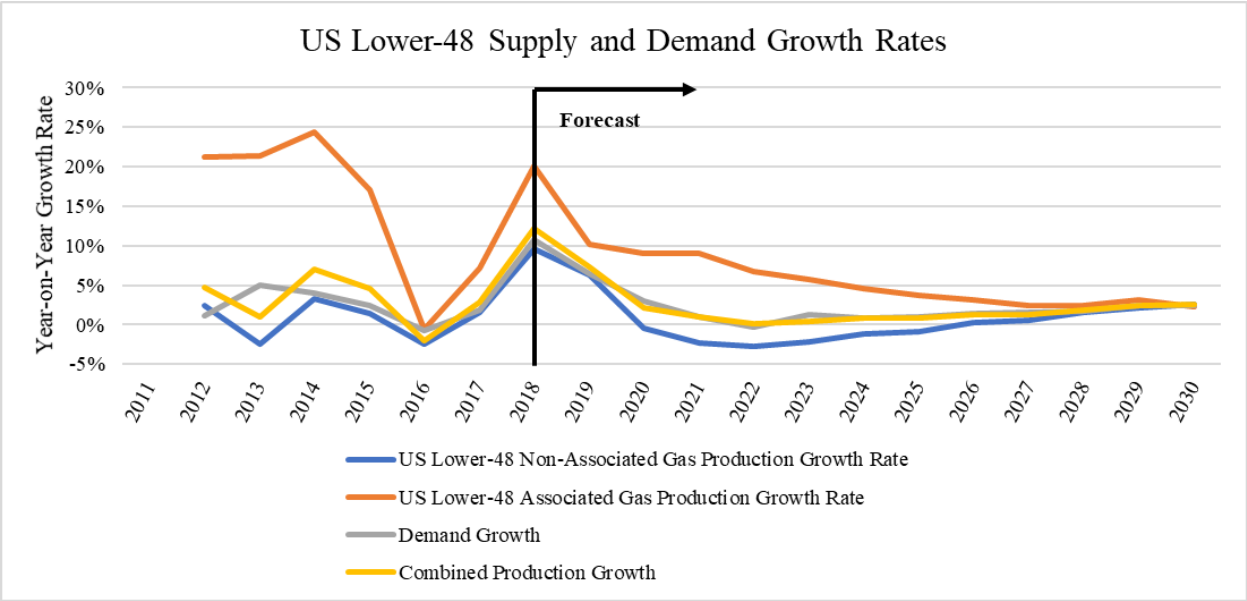

Figure 3. Historic and Forecasted Year-On-Year Growth Rates. US Lower-48 natural gas demand and supply. Data from IHS Markit Long Term Outlook, February 28th, 2019. See Footnote 6.

SCE's expectation supports a blend of Staff's High Demand/Low Price case for the medium-run (1-5 years) with the Mid Demand Case being consistent with an expected $4/Mcf in 2030 (real 2018$ terms). As noted by Staff at the workshop, the ratio of associated gas production to total production is increasing, contributes to lower production costs, and reduces market prices.[9] SCE welcomes the opportunity to compare data, assumptions, and modeling results with Staff to publish scenarios that will assist the State to achieve its climate policy goals at the lowest possible customer costs.

III. Conclusion

SCE thanks the CEC for consideration of the above comments and looks forward to its continued partnership with stakeholders in the development of the 2019 IEPR. Please do not hesitate to contact me at (916) 441-3979 with any questions or concerns you may have. I am available to discuss these matters further at your convenience.

Very truly yours,

/s/

Catherine Hackney

[9] North American Market Gas-trade (NAMGas) Model – Preliminary Results, Slide 13, https://efiling.energy.ca.gov/GetDocument.aspx?tn=227782&DocumentContentId=59138