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EDF Written Comments on IEPR Gas Demand Forecasts

Additional submitted attachment is included below.

May 2, 2023

Integrated Energy Policy Report Team
California Energy Commission

SUBJECT: Written Comments of Environmental Defense Fund Regarding IEPR Natural Gas Preliminary Price Projections (Docket # 23-IEPR-03)

FROM: Joon Hun Seong, Energy Decarbonization Analyst
Michael Colvin, Director, California Energy Program

Environmental Defense Fund (EDF) appreciates the California Energy Commission's (CEC) efforts to provide forward looking projections of natural gas prices; and the opportunity to comment on the preliminary models proposed by the CEC Integrated Energy Policy Report team. EDF believes accurate projections of natural gas prices are critical to understanding the impacts of California's energy transition to statewide ratepayers and consumers.

When it comes to natural gas prices, there are two critical components: the price of the deregulated commodity itself and the associated utility infrastructure costs. In general, when considering the natural gas pipeline infrastructure, a majority of the costs as are associated with service to residential customers. This is logical, since more pipe is required to serve that customer segment. However, a majority of the gas molecules themselves are consumed by electric generators and large industrial customers. These customers almost always by the gas commodity themselves on the open market and pay for their infrastructure costs separately. So as the CEC is forecasting natural gas prices, EDF encourages to first consider whether it is a bundled purchase or an unbundled purchase. Since a large portion of the overall gas utility bill is not the actual commodity but the pipeline service, understanding this dynamic is essential.

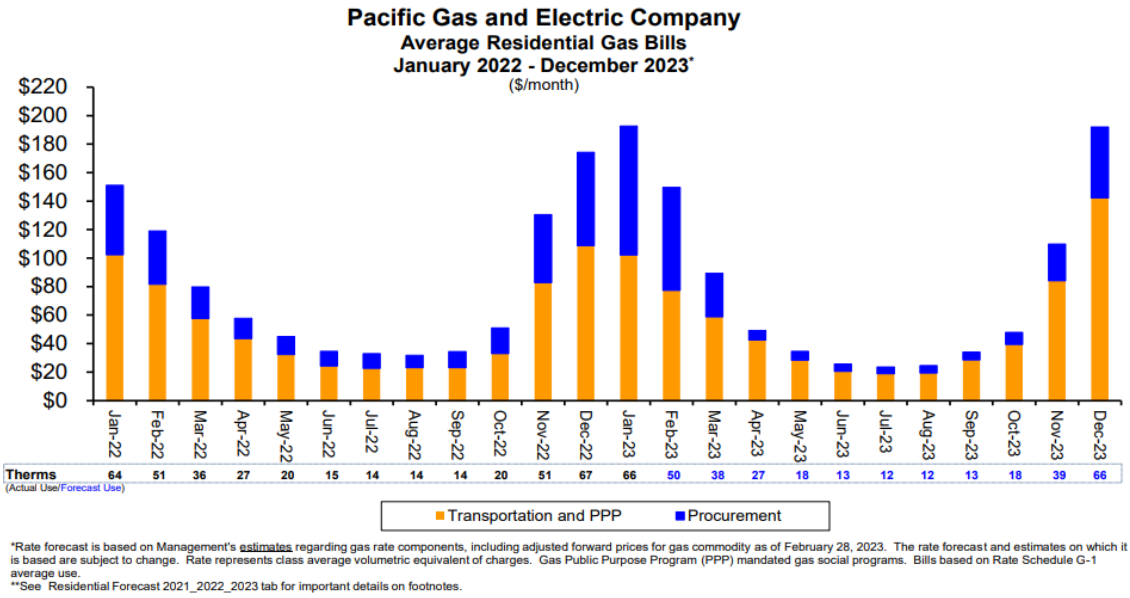
Specifically, EDF focuses on the gas demand projections that underpin the gas rate calculations performed in the IEPR preliminary model. EDF is concerned that the preliminary model provided by the CEC staff does not accurately account for projected declines in gas demand—and as a result, will

severely underestimate future gas rates. To be clear – gas demand is going down and that decline will continue to accelerate as more homes electrify and more renewables are brought onto the system displacing natural gas fired electric generation. Existing projections of gas demand from the California Air Resources Board (CARB) Scoping Plan as well as those from California's major investment-owned gas utilities for their respective throughputs predict consistent and significant declines based on ambitious climate goals set by state and local authorities, the preliminary IEPR model does not project commensurate levels of gas demand decline. EDF recognizes that the CEC in other aspects of the IEPR docket recognize the increase in electrification of buildings and the increase of renewables, both motivating a decrease in natural gas demand. Gas throughput levels directly impact both gas transportation rates and overall gas prices because fixed costs are allocated over that throughput. A higher throughput implies a lower rate, all else constant. As a result, if accurate and reasonable gas throughput assumptions are not used, the overall value of natural gas price projections made using the IEPR model will be undermined.

Natural Gas Prices Directly Depend on Gas Throughput Levels

As described in the 2023 Preliminary Natural Gas Cost Projects slides presented on April 18, 2023, delivered cost of natural gas by end-use can be largely broken down into commodity costs (e.g., the price of natural gas itself) and transportation rates (e.g., the cost of gas delivery including infrastructure costs). Historically, transportation rates have made up a significant portion of gas rates; even during the recent historical spikes in gas costs, this has been the case, as shown in data provided by Pacific Gas and Electric Company (PG&E).[1]

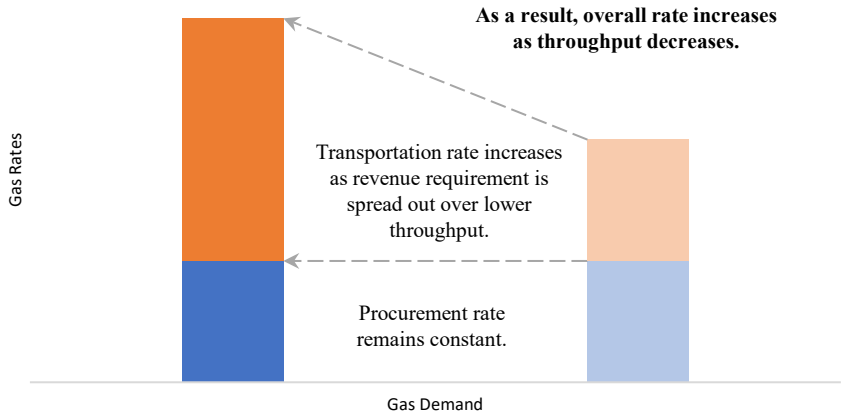
Figure 1



Transportation rates are calculated by dividing the revenue requirement (or portion of the revenue requirement assigned to the specific end-use sector) by corresponding throughput. The IEPR preliminary model assumes linear revenue requirement growth at a 4% annual rate; and holds the revenue spread among different customer classes (residential, commercial, industrial, and electric generation) constant. As a result, this means that fluctuations in gas throughput levels will directly inform natural gas prices, all other aspects being held equal. Reduced gas throughput over the same amount of revenue requirements—or in this case, *increasing* revenue requirements—will result in higher transportation rates and gas prices overall.

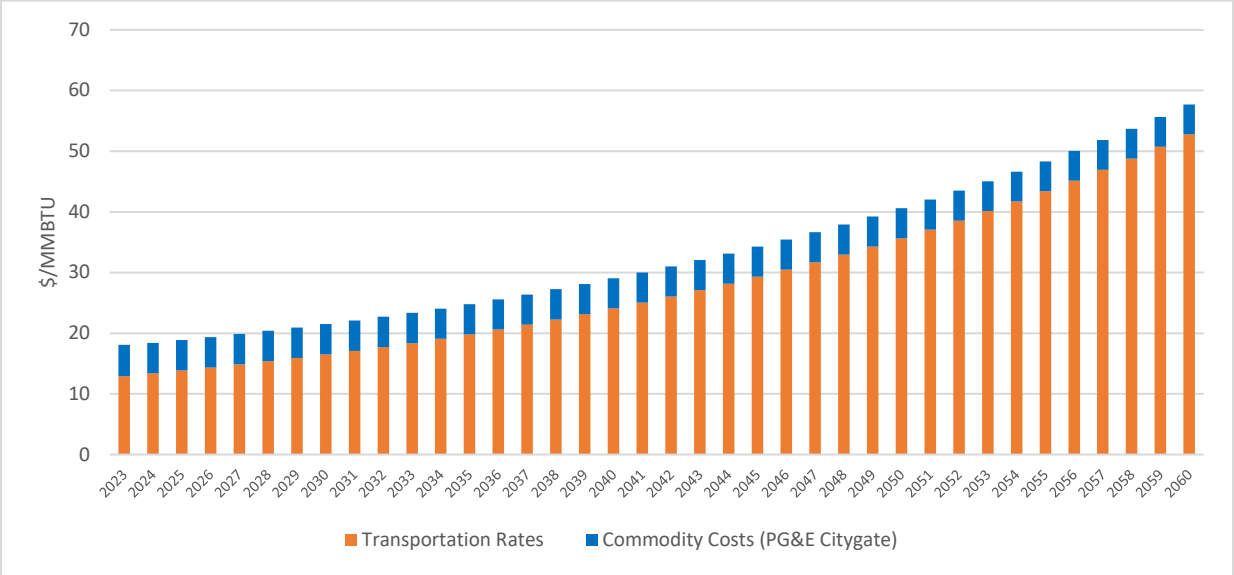
[1] https://www.pge.com/tariffs/Residential.pdf

Figure 2: Impact of Gas Demand Decline on Rates (Illustrative)



The IEPR preliminary model projects similar breakdown of future gas prices, in particular for residential and commercial customers. For example, the model assumes that PG&E Citygate natural gas prices will remain relatively steady around $5.05/MMBTU (in 2022$) through 2060, but projects residential transportation rates to rise from $12.91/MMBTU to $52.79/MMTU during the same time period. Simply put, the model projects transportation rates will account for almost all of the predicted increases in gas prices.[2]

Figure 3: PG&E Residential Rate Breakdown (IEPR Preliminary Model)

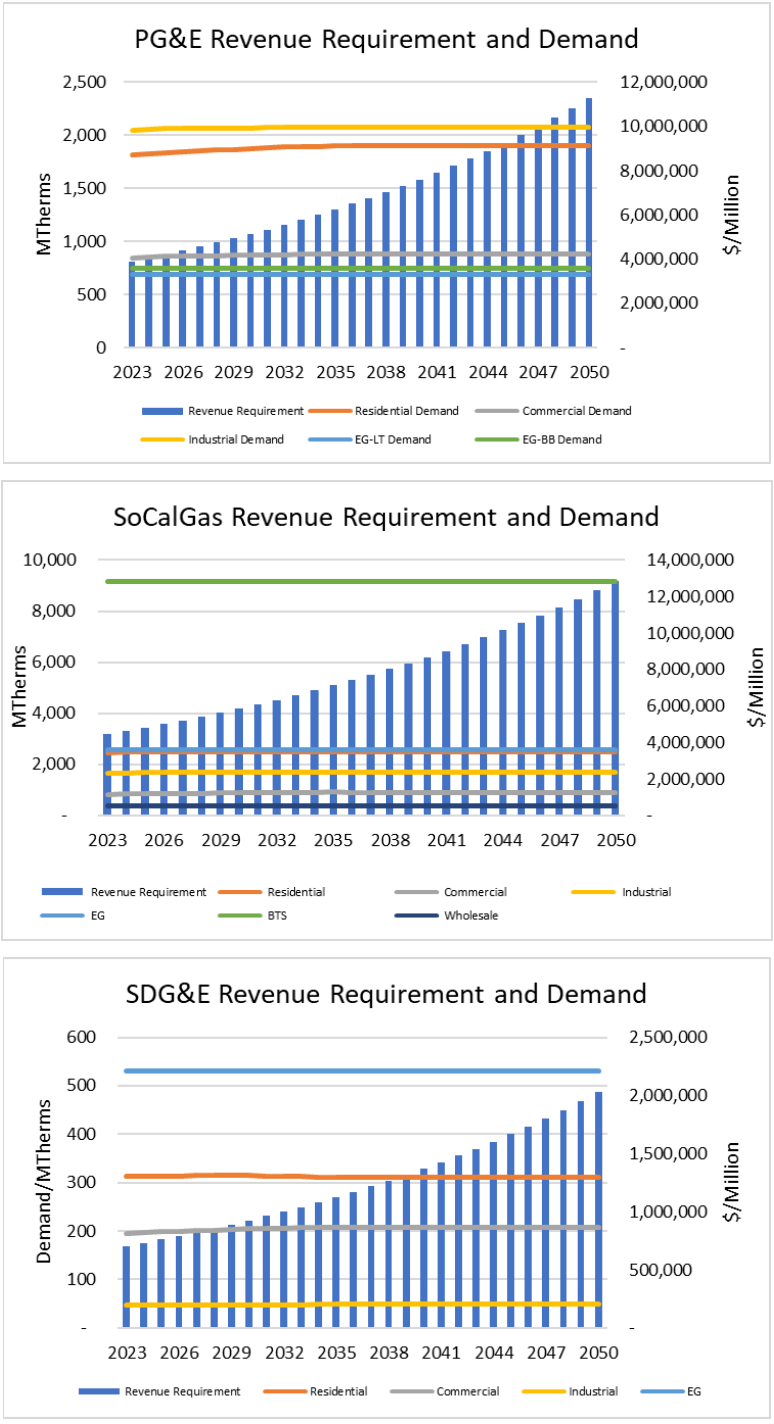


[2] Transportation Rates from 2023 IEPR Preliminary Electric Generation Price Model; Commodity Costs for PG&E Citygate supply from Preliminary NAMGas Commodity Prices Model.

IEPR Preliminary Model Does Not Project Declining Gas Demand

Currently, the IEPR preliminary model projects stable future gas demand. In the April 18, 2023 presentation, CEC staff indicated that demand was held *constant* for 2036 onwards due to a lack of "accurate" projections. This is not a valid assumption and should be updated accordingly.

Figure 4: IEPR Preliminary Model Projections by IOU



EDF highlights two concerns around these projections. First, stable gas demand is at odds with California's climate policies aimed at reducing fossil fuel use—including natural gas demand. These state policies include the Senate Bill 32 targets of reducing California's greenhouse gas emissions by 40% below 1990 levels by 2030, the Assembly Bill 1279 target of reaching net zero by 2045, the California Air Resources Board (CARB) 2022 Scoping plan targets of reducing total fossil fuel consumption by 86% below 2022 levels by 2045, the California Public Utilities Commission (CPUC) decision to eliminate gas extension subsidies, and various local ordinances on gas appliances.[3] With the large rate increases requested by the large investor owned gas utilities, including Southern California Gas Company, San Diego Gas & Electric Company and Pacific Gas and Electric Company, customers who are able to afford to fuel switch away from gas to electricity will do so.

Second, EDF contends that it is unreasonable to assume constant demand beyond a future point in time simply because no existing projections are available. It is true that no future projection can be made with 100% confidence and accuracy; and that confidence will decline further out into the future the projection is made. However, the entire IEPR process has uncertainty of projections baked in, and holding this one element constant is not worthy of the IEPR process. To project *no change* and assume constant future gas demand beyond a certain point, however, would be to overlook existing market trends of electrification and various state policies. The impacts of California's climate policies will not suddenly disappear after 2035—and constant gas demand after that point despite the continued implementation of such policies cannot be reasonably assumed.

CARB demand projections, specifically, show in Figure 5 state-wide natural gas demand declining by almost 25% even in a business-as-usual (BAU) scenario out to 2045.[4] California's investor-owned gas utilities themselves, too, in their biannual California Gas Report (CGR) updates project declining gas demand—by as much as 22% from 2022 to 2035 as shown in Figure 6.[5]

[3] *SB-32 California Global Warming Solutions Act of 2006: Emissions Limit* (SB-32), available at: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32; *AB-1279 The California Climate Crisis Act* (AB-1279), available at: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB1279; CARB, *2022 Scoping Plan For Achieving Carbon Neutrality* (CARB Scoping Plan), "AB 32 GHG Inventory Sectors Modeling Data Spreadsheet," available at: https://ww2.arb.ca.gov/sites/default/files/2022-11/2022-sp-PATHWAYS-data-E3, November 16, 2022; CPUC, *Phase III Decision Eliminating Gas Line Extension Allowances, Ten-Year Refundable Payment Option, And Fifty Percent Discount Payment Option Under Gas Line Extension Rules* (D.22-09-026), issued September 20, 2022; Building Decarbonization Coalition, "Zero Emission Building Ordinances," available at: https://buildingdecarb.org/zeb-ordinances, retrieved March 2023.

[4] CARB, "AB 32 GHG Inventory Sectors Modeling Data Spreadsheet"; statewide demand covers final energy categories and electric generation fossil fuel demand.

[5] *2022 California Gas Report, Prepared in Compliance with California Public Utilities' Commission Decision D.95-01-039* (2022 CGR) at 104-105, 185-186, and 223-224, available at: https://www.socalgas.com/sites/default/files/Joint_Utility_Biennial_Comprehensive_California_Gas_Report_2022.pdf

Figure 5: CARB State-wide Gas Demand Projections

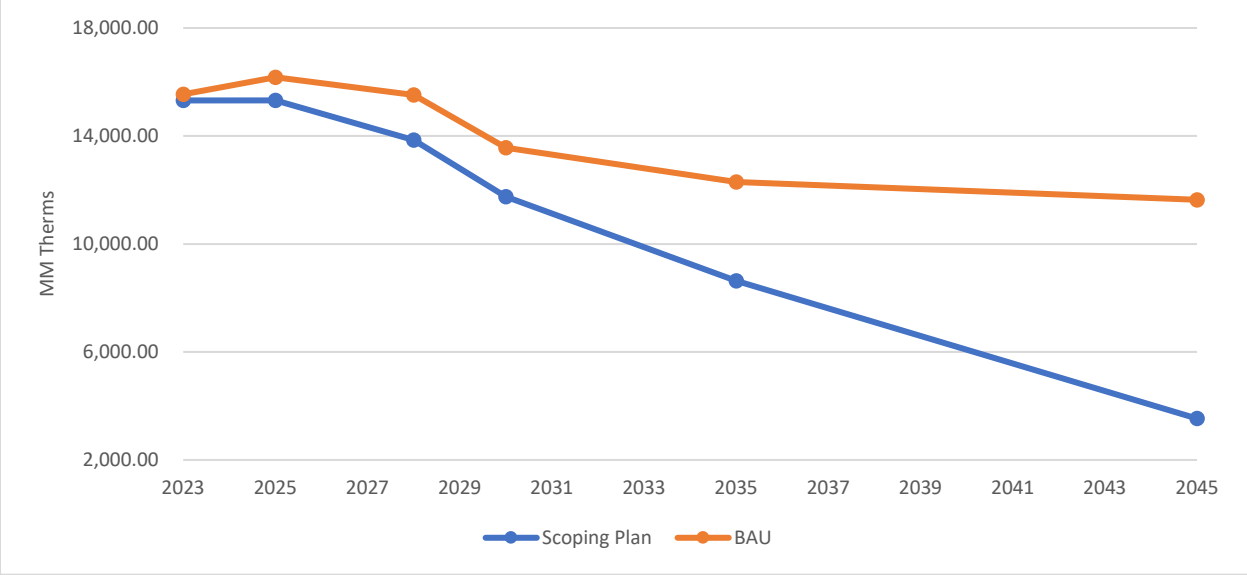
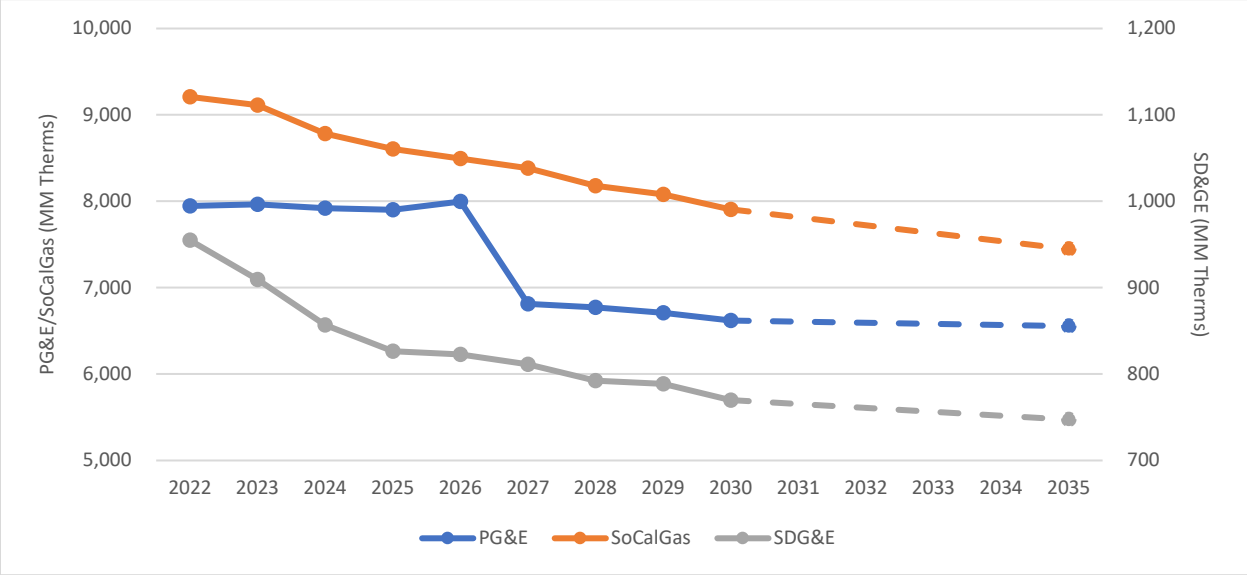


Figure 6: California Gas Report Gas Throughput Projections[6]

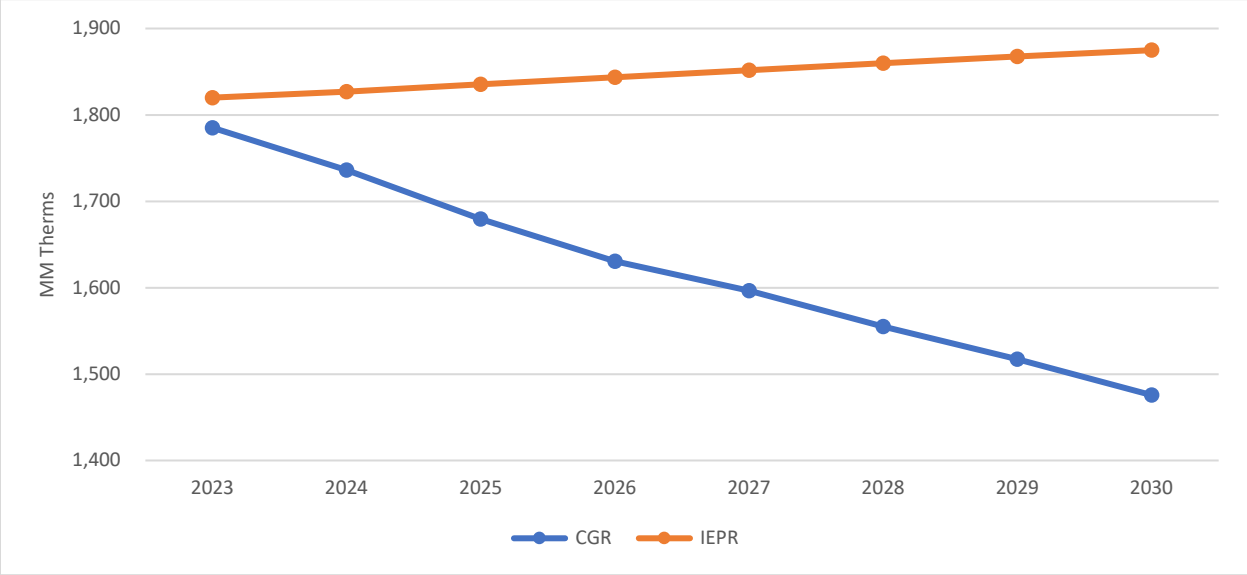


Examining specific categories where direct comparison is possible further reveals that the demand assumptions underlying the IEPR preliminary models is inconsistent with comparable demand projections. Specifically, residential gas demand for PG&E throughput projected in the CGR show declining gas demand—which would be consistent with newly introduced federal incentives for electrification, local air quality management districts (AQMDs) regulations on gas appliances, and the

[6] Note that the CGR does not provide projections for 2031-2034.

CEC's strengthened Title 24 building code requirements.[7] And yet, the preliminary model shows residential gas demand *rising* in the same period.

Figure 7: PG&E Residential Gas Demand Projections - CGR vs. IEPR



EDF does not endorse a specific existing demand projection to be used for the purposes of the IEPR—and acknowledges discrepancies may exist between analogous projections. However, EDF expresses concerns around the fact that the preliminary model uses assumptions around gas demand that are significantly and fundamentally divergent from existing projections, as well as California's climate policies that underpin them. EDF encourages that at minimum the CEC do some scenario analysis on this point. While specific numbers may be different, all projections must take into account of the same regulatory and policy realities. As discussed earlier in these comments, gas throughput is an important determinant factor of both gas transportation and overall rates. Using accurate and reasonable projections of gas demand, therefore, will be crucial to making accurate and reasonable projections of future gas prices.

EDF thanks the CEC staff for their hard work on this emergent topic and looks forward to collaborating with staff further to ensure that the IEPR accurately reflects the market trends of natural gas cost increases and corresponding decrease in overall demand.

[7] *H.R.5376 - Inflation Reduction Act of 2022* (Inflation Reduction Act) at 136 Stat. 2038, available at: https://www.congress.gov/bill/117th-congress/house-bill/5376/text; BAAQMD, *Regulation 9 Rule 4: Nitrogen Oxides from Fan Type Residential Central Furnaces - 2023 Amendment (Current),* adopted March 15, 2023, available at: https://www.baaqmd.gov/rules-and-compliance/rules/reg-9-rule-4-nitrogen-oxides-from-fan-type-residential-central-furnaces?rule_version=2021%20Amendment; California Energy Commission, *2022 Building Energy Efficiency Standards for Residential and Nonresidential Buildings*, Title 24, Part 6, August 2022, available at: https://www.energy.ca.gov/sites/default/files/2022-12/CEC-400-2022-010_CMF.pdf.