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2023 Preliminary Gas Price Projections

Additional submitted attachment is included below.



May 2, 2023

Solar Energy Industries Association

Comments on the April 18, 2023, *Natural Gas Preliminary Price Projections Webinar* for the 2023 *Integrated Energy Policy Report*

The Solar Energy Industries Association (SEIA) appreciates the opportunity to provide these written comments on the Commission's (CEC) draft natural gas price forecast for the 2023 *Integrated Energy Policy Report* (2023 IEPR). We understand that the Commission intends to finalize this forecast this summer. A SEIA representative attended the April 18, 2023 workshop discussing the draft gas price forecast. Our focus is on the forecast of natural gas burner tip prices for Electric Generation (EG) gas customers, as this forecast is used in a variety of important state planning activities for the electric sector, including for Integrated Resource Planning (IRP) at the California Public Utilities Commission (CPUC). In general, we commend the CEC staff for its work in preparing the forecast and hope that these comments will further improve this important projection of the burner tip costs of the marginal fuel for electric generation in California in many hours of the year.

1. SEIA's Recommendations

SEIA's comments make the following recommendations for revisions to the CEC's draft forecast:

1. Clarify that greenhouse gas (GHG) costs are not included in intrastate rates and the CEC's EG burner tip forecast. To the extent the CEC revises this approach, it should identify specifically what GHG costs are included the forecast.
2. Use a single type of pricing hub for the natural gas commodity portion of the burner tip forecasts, either California border prices or Citygate prices, but not both. For example, on the PG&E system, it is our understanding that gas-fired power plant operators mostly purchase their gas supplies at the PG&E Citygate, regardless of whether their power plants are served directly from the backbone pipeline system (EG BB customers) or are attached to the PG&E local transmission system (EG D/T customers). For this reason, and to avoid inconsistencies or confusion in which intra-state transportation rate components are included in the burner tip forecast, it would make sense to model all

power plants as purchasing gas at the same location in each half of the state. We thus recommend calculating all burner tip prices, based on either: (a) PG&E and SoCalGas Citygate prices, or (b) California border prices (Malin/Topock for northern California; Topock for southern California).

3. If Citygate prices are used to determine burner tip prices, the CEC should use the full intrastate backbone rates in NAMGas, and should escalate these rates at the CEC's 4% per year assumption for other intrastate transportation rates. By escalating the full backbone rates in NAMGas, the CEC's Citygate price forecasts would be consistent with the CEC's escalation assumptions for other intrastate rates. In addition, the use of the full PG&E and SoCalGas backbone rates in NAMGas would correctly reflect the fact that, over time, the difference between California border and citygate prices has reflected the full cost of the PG&E and SoCalGas backbone transportation services that connect the border and citygate markets.
4. Revisit the starting point for the EG burner tip price forecast. The CEC may be able to make use of more up-to-date information regarding near-term rates that have been adopted by the CPUC. For example, we are hopeful that the adopted gas rates from the PG&E 2022 Cost Allocation and Rate Design proceeding (CARD, A. 21-09-018) and General Rate Case (GRC, A. 21-06-021) cases will be available before the CEC finalizes its forecast this summer. This is important because PG&E's gas rates and revenue requirements are expected to increase significantly in these cases, compared to those in effect on January 1, 2023, and used in the preliminary forecast.
5. Include municipal surcharges in the EG burner tip forecasts. These are small, statutorily mandated costs that utility customers who buy their own gas supplies (i.e., all EG customers) must pay to cover the utility franchise fees associated with their gas supplies.
6. Consider revising the CEC's annual interpolation and monthly shaping to preserve NAMGas's annual average prices.

2. GHG Costs

We understand that the CEC's EG burner tip forecasts for PG&E, SoCalGas, and SDG&E exclude all GHG-related costs.¹ We recommend clarifying that point in the forecast documentation, so that it is well understood that the CEC has not included any GHG-related

¹ In response to a question about whether GHG costs are included or excluded in the forecast, CEC staff responded via email that the preliminary model does not include AB 32 cap-and-trade costs in the rates.

costs in the forecast of intrastate rates. To the extent the CEC decides to include GHG costs in future versions of the model, the GHG component of rates should be clearly identified. We believe that most EG plants in California are directly regulated by the California Air Resources Board (CARB) as “covered entities” that pay GHG-related costs directly through their participation in the cap & trade market. In addition, CPUC’s IRP modeling includes its own forecasts of GHG-related costs, which is combined with CEC’s gas price forecasts. For these reasons, we support and agree with the CEC’s choice to exclude GHG costs from the EG rate forecast. The following list shows the CEC’s 2023 burner tip rates for EG customers for transportation from the PG&E and SoCalGas Citygates, which we understand to exclude any GHG-related costs.

- PG&E EG LT customer rate = \$1.466 per Dth (LT = served from local transmission pipelines)
- PG&E EG BB customer rate = \$0.081 per Dth (BB = served from backbone pipelines)
- SoCalGas EG customer rate = \$0.693 per Dth
- SDG&E EG customer rate = \$0.689 per Dth

3. PG&E End Use Rate Escalation

The CEC’s forecast of PG&E EG burner tip rates appears to be accurate based on the January 1, 2023 revenue requirement. However, PG&E’s April 2023 forecast of end-use EG rates in 2023, shown below in **Table 1**, indicates that the EG D/T rate for covered entities may increase significantly this year (by as much as 50%), due to the CPUC’s anticipated adoption of new rates resulting from the PG&E CARD and GRC cases. Thus, we recommend that the CEC should see if it can incorporate new CPUC-adopted rates and revenue requirements for the remainder of 2023 from the final decision in the CARD and GRC cases, as a more accurate starting point for the CEC’s forecast for PG&E. Such rate cases occur only once every four years, so they set an important benchmark for each gas utility’s rates.

Table 1: *PG&E April 2023 Electric Generation Rate Forecast (\$/Dth)*

EG Rate	Cost Component	January to July 2023	August 2023	September to December 2023
EG D/T	Covered Entities	1.38	1.49	2.28
	GHG Adder	1.19	1.19	1.19
	Non-Covered Entities	2.57	2.68	3.47
EG BB	Covered Entities	0.03	0.06	0.10
	GHG Adder	1.19	1.19	1.19
	Non-Covered Entities	1.22	1.25	1.29

Source: <https://www.pge.com/tariffs/EG.pdf> and https://www.pge.com/tariffs/EG_Backbone.pdf

4. PG&E Backbone Rate and Market Value

The CEC uses a backbone system rate (California border to PG&E Citygate) solely for the calculation of EG BB customer burner tip costs:

- EG D/T customers are assumed to buy gas at the PG&E Citygate and pay the EG D/T end-use rate to transport gas from the PG&E Citygate to the EG D/T customer's burner tip over the PG&E local transmission (LT) system.
- EG BB customers are assumed to buy gas at the California border (67% Malin, 33% Topock), pay the backbone rate to transport gas from the border to the PG&E Citygate, and pay the EG BB end-use rate to transport gas from the PG&E Citygate to the EG BB customer burner tip.

There does not appear to be any reason for the CEC's assumption that the two types of PG&E EG customers buy gas in different locations. We note the term "backbone" may have led to this choice because, although all PG&E EG customers (D/T and BB) use PG&E's backbone system to move gas from the California border to the PG&E Citygate, only EG D/T customers use PG&E's local transmission system, while "backbone-only" EG BB customers do not.

We also note that EG customers that purchase gas at the PG&E Citygate pay for backbone transportation from the California border to the PG&E Citygate indirectly, because the cost of gas transportation over the PG&E backbone system is embedded in the Citygate commodity price. The NAMGas model shows a Citygate vs. California border (Redwood/Baja path) price differential equal to about \$0.25 per Dth, which is about 22% to 31% of the underlying full PG&E backbone rate. See **Table 2** below. The backbone rate escalates by 4% per year, whereas the Citygate basis² does not change, which explains the increasing level of the "market" discount assumed in NAMGas.

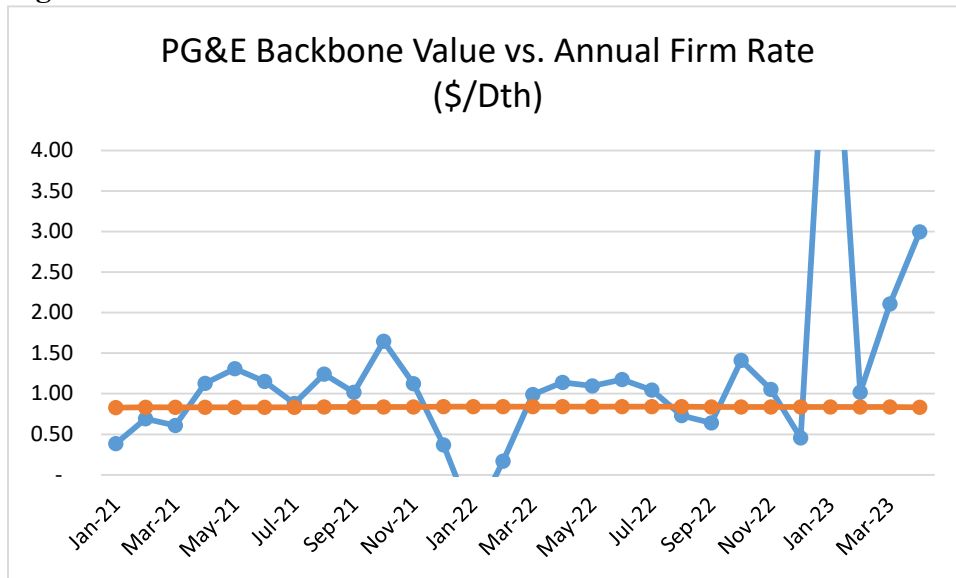
Table 2: *Backbone System Rate vs. Basis Differential (\$/Dth)*

Year	CEC Calculated Backbone System Rate	NAMGas Basis Border to Citygate	Market Rate / Full Rate %
2024	0.84	0.26	31%
2025	0.87	0.25	29%
2026	0.91	0.25	28%
2027	0.94	0.25	27%
2028	0.98	0.25	26%
2029	1.02	0.25	25%
2030	1.06	0.25	24%
2031	1.10	0.25	23%
2032	1.15	0.25	22%

² The "basis" is the difference in prices between two locations on the natural gas pipeline system.

The problems with the use of this “market rate” for backbone transportation on the PG&E system are (1) historically the basis difference between border and citygate prices on the PG&E system has been close to the full cost of backbone transportation on the PG&E system and (2) the lack of any escalation over time in this market rate, even though the underlying backbone rates will increase. For example, **Figure 1** below shows that the difference between PG&E Citygate prices and California border prices in 2021-2023 (the PG&E Backbone Value) has fluctuated above and below the average PG&E Annual Firm backbone rate, with the average PG&E Backbone Value being at least as high as the Annual Firm backbone rate.³

Figure 1: *PG&E Backbone Value less PG&E Annual Firm Backbone Rate*



We recommend two alternatives for the CEC to consider: either (1) use Citygate prices for all forecasts, or (2) use California border prices for all forecasts. The current modeling approach for PG&E uses a mix: PG&E Citygate prices for the EG D/T forecast and California border prices for the EG BB forecast. This is confusing and does not reflect our understanding that most EG customers purchase their gas supplies at the PG&E Citygate. If the CEC uses PG&E Citygate prices for both EG D/T and EG BB burner tip costs, it should revise the NAMGas modeling of PG&E Citygate prices to include the use of the full PG&E backbone rate, with 4% annual backbone rate escalation. This would reflect the fact that the difference between border and citygate prices on the PG&E system historically has reflected the full cost of backbone transportation, as illustrated in Figure 1. If, on the other hand, the CEC uses border prices (e.g., 67% Malin, 33% Topock), then the full backbone rate (with 4% annual escalation) should be added to the weighted average border price to yield the PG&E Citygate price.

³ The border and citygate prices used in Figure 1 are monthly bidweek values, and are sourced from PG&E’s monthly avoided cost posting. The large upward spike in the PG&E Backbone Value at the end of 2022 and in early 2023 was the result of constraints on the pipeline and storage infrastructure that deliver gas to northern California.

Like the end-use rates for transportation downstream of the PG&E Citygate, PG&E's backbone rates will change with the CPUC's final orders in 2023 in PG&E's CARD and GRC cases. We recommend reviewing the 2023 backbone rates adopted in these cases, if available later this year in time for the final forecast, to determine how to update the 2023 starting points for the PG&E transportation rate forecasts.

5. SoCalGas Backbone Rate and Market Value

The CEC's NAMGas forecast of the Topock to SoCalGas Citygate basis declines from \$0.31 per Dth in 2022 to \$0.27 per Dth in 2025 and beyond. We suspect that the CEC does not include its 4% annual backbone rate escalation within NAMGas, which would explain the declining or flat basis forecast. The following **Table 3** shows the flat \$0.27 per Dth result for 2025-2032 from the preliminary modeling. Like our recommendation for PG&E burnertip costs, we recommend that, if the CEC sticks with its choice to use the SoCalGas Citygate price from NAMGas, rather than using a California border price at Topock, the full SoCalGas Backbone Transmission Service (BTS) rate (with 4% annual rate escalation) should be included in the NAMGas modeling of SoCalGas Citygate prices.

Table 3: *SoCalGas Backbone Transmission Market Value (\$/Dth)*

Year	SoCalGas Citygate	Topock California/Arizona	Difference (Backbone Market Value)
2023	5.21	5.52	0.31
2024	5.17	5.46	0.29
2025	5.19	5.46	0.27
2026	5.19	5.46	0.27
2027	5.19	5.46	0.27
2028	5.18	5.45	0.27
2029	5.18	5.45	0.27
2030	5.18	5.44	0.27
2031	5.17	5.44	0.27
2032	5.17	5.44	0.27

The SoCalGas and SDG&E BTS rate, for transportation from the California Border at Topock, Arizona to the SoCalGas Citygate, is about \$0.55 per Dth today. This is what it costs today to transport gas from the California border to the SoCalGas Citygate. Escalation at 4% per year results in a 2032 SoCalGas Citygate price that is \$0.78 per Dth above the border price, as shown in **Table 4**, rather than the \$0.27 per Dth modeled in NAMGas. It appears that NAMGas is essentially predicting that purchases at the SoCalGas Citygate will result in over a 50% discount to the actual cost of transportation, which appears to be the result of a too-low BTS rate assumption in NAMGas.

Table 4: *SoCalGas and SDG&E BTS Rates in 2023 plus 4% Annual Escalation (\$/Dth)*

	SoCalGas G-BTS	SDG&E G-BTS1	Average BTS Rate Plus 4% Escalation
2023	0.54908	0.5491	0.55
2024			0.57
2025			0.59
2026			0.62
2027			0.64
2028			0.67
2029			0.69
2030			0.72
2031			0.75
2032			0.78

We have the same recommendation here that we do for the PG&E rates: the CEC should either (1) use a SoCalGas Citygate price in its price forecast, modified to reflect the use of the full and escalating SoCalGas backbone rates in the NAMGas model, or (2) use of a Topock border price and include an escalating BTS rate, as well as escalating end-use rates downstream of the SoCalGas Citygate, in its burner tip price forecast. This choice should be consistent with the similar choice made for the PG&E system.

6. Franchise Fee Surcharges

A minor omission, which we recommend that the CEC should correct, is the omission of the franchise fee surcharge paid by most EG customers.⁴ These “municipal surcharges” should be included in the final EG burner tip price forecast. PG&E EG customers pay PG&E’s G-SUR tariff (e.g. \$0.0303 per Dth in April 2023). On the SoCalGas system, it is the G-MSUR tariff; for SDG&E it is the GP-SUR tariff. Similar to GHG costs, these components should be identified explicitly when they are included.

7. Annual Interpolation and Monthly Shaping

Another minor issue is the CEC’s monthly interpolation of NAMGas annual prices. We assume that the CEC has run NAMGas to produce annual average, rather than monthly average prices.⁵ The CEC then calculates monthly prices that include an increasing amount, during each

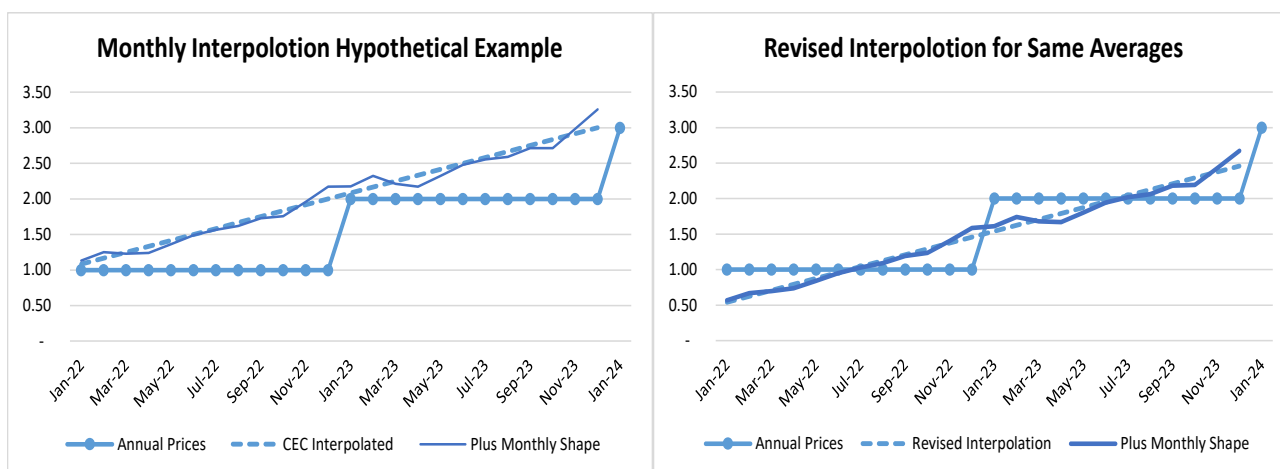
⁴ As described in PG&E’s G-SUR tariff, at https://www.pge.com/tariffs/assets/pdf/tariffbook/GAS_SCHEDS_G-SUR.pdf, gas volumes procured by customers from third-party entities and transported by PG&E must pay a franchise fee surcharge pursuant to California Senate Bill No. 278 and P.U. Code Sections 6350-6354. The same law also applies to SoCalGas and SDG&E.

⁵ If NAMGas calculated gas commodity prices for the month of January each year, then the CEC’s annual interpolation approach would be correct and the comments in this section could be ignored.

month of the year, of the change in the annual NAMGas price forecast from that year to the next year. Thus, (1/12) of the annual price change is added to the price in January, (2/12) is added in February, and so on, until the full (12/12) price change is added in December. While this allows monthly prices in the year to ramp up to the level of prices in the next year, it changes the annual average price forecast. These comments propose a way to eliminate any changes to the annual average gas price. By changing the interpolation addend, from having the same sign in each month of the year, to addends with opposite signs in each half of the year, the CEC can avoid changes to the annual average prices:

- Current Addend = annual price change x [month #] / 12
- Proposed Addend = annual price change x [month # - 6.5] / 12

The following two figures provide a purely hypothetical example (2022 = \$1.00/Dth, 2023 = \$2.00/Dth, and 2024 = \$3.00/Dth), simply to illustrate the issue; the first figure shows the CEC's current approach, and the second figure shows a similar approach that does not alter the annual averages.

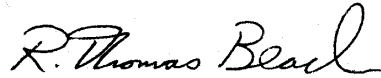


The figures above also include the Henry Hub (January 2009 to February 2023) average monthly price shapes. The CEC also should make a final minor correction to the monthly price shapes used in the draft forecast, so that the monthly shapes average to 1.0 annually. This small correction is that a single set of price shape factors should be calculated based on average monthly prices over the multi-year period (2009-2023), rather than averaging the price shape factors for each individual year of that period. Also, it appears that the 2017 shapes used a 2016 average price in the denominator – but this issue would be corrected with the above recommendation to compute average monthly prices over the multi-year period prior to calculating the monthly price shape.

However, we understand from the CEC's presentation at the workshop that NAMGas is calculating annual average prices.

We appreciate the attention of the CEC to these comments. Please do not hesitate to contact us with any questions or clarifications regarding these comments.

Respectfully submitted,

A handwritten signature in black ink that reads "R. Thomas Beach". The signature is written in a cursive, flowing style.

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