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SoCalGas Comments on Midterm Reliability Analysis Workshop

Additional submitted attachment is included below.

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September 7, 2021

Commissioner Siva Gunda
California Energy Commission
Docket Unit, MS-4
Docket No. 21-ESR-01
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: Comments on Midterm Reliability Analysis and Natural Gas Power Plant Upgrades

Dear Commissioner Gunda:

Southern California Gas Company (SoCalGas) appreciates the opportunity to provide comments on the California Energy Commission (CEC) Workshop on Midterm Reliability Analysis and Incremental Efficiency Improvements to Natural Gas Power Plants held on August 30, 2021. The reliability of the State's electric system is critical to California's economic vitality and the well-being of the public. As incidence of severe weather and other threats to the electric system increase, it is important for the CEC to analyze midterm reliability and explore hypothetical resource portfolios. We recognize and appreciate the magnitude of analytical efforts and resources the CEC Staff has undertaken to assess midterm reliability and, in an effort to advance the analysis, we offer comments on the following topics: (1) factoring an appropriate outage rate for the gas portfolio to ensure accurate results of the midterm reliability analysis; (2) utilizing a local capacity area assessment tool to help mitigate uncertainties; and (3) additional topics for consideration.

1. Factoring An Appropriate Outage Rate For The Gas Portfolio To Ensure Accurate Results Of The Midterm Reliability Analysis

The CEC's takeaway that the hypothetical gas scenario (used for comparison against the preferred resource portfolios) is less reliable than the preferred resource portfolios appear to be inaccurate. The CEC's conclusion is founded on inconsistent approaches to developing the respective portfolios. Specifically, the CEC used a discounted nameplate capacity rubric, Effective Load Carrying Capacity (ELCC) values for renewables and net qualifying capacity (NQC) for battery storage to develop the preferred resource portfolios, which is not the same methodology used to develop the gas portfolio. For the hypothetical gas scenario, the CEC used nameplate capacity which treats gas resources as outputting 100 percent of facilities' installed capacity, not

factoring in the forced outage rate of approximately 7.5 percent. Unlike the preferred resource portfolios, using such an approach results in a gas portfolio that was underbuilt, which led to an inaccurate conclusion that the gas portfolio is less reliable than the preferred resource portfolios. We suggest that the CEC Staff to use the Equivalent Forced Outage Rate demand (EFORd) as indicated on slide 22 for an accurate analysis of the gas portfolio which can better reflect the needed build out of the system when accounting for outages, making it more consistent with the approach used in the preferred resource portfolios.

2. Utilizing A Local Capacity Area Assessment Tool to Help Manage Uncertainties

For the preferred system plan (PSP) and procurement scenarios, it appears the majority of the NQC is credited to energy storage (4-hour and 8-hour) and not necessarily a result of solar and wind additions. For example, on slide 30, the NQC capacity need for the 2026a scenario is 13 GW and the energy storage capacity looks to be about 12.5 GW (with about 0.5 GW of geothermal to make up the remaining need). According to U.S. Energy Information Administration (EIA), there is currently about 500 MW of battery storage connected to California balancing authorities;[1] thus in order to meet system reliability of the PSP or procurement scenarios, there must be an average of 2,500 MW or five times the current total capacity of battery storage built every single year for the next five years.[2] This level of build has not been previously achieved in practice and thus utilization of a tool like the local capacity area assessment tool (LCAAT) would assist in determining if the construction is on target and whether to trigger mitigation measures.

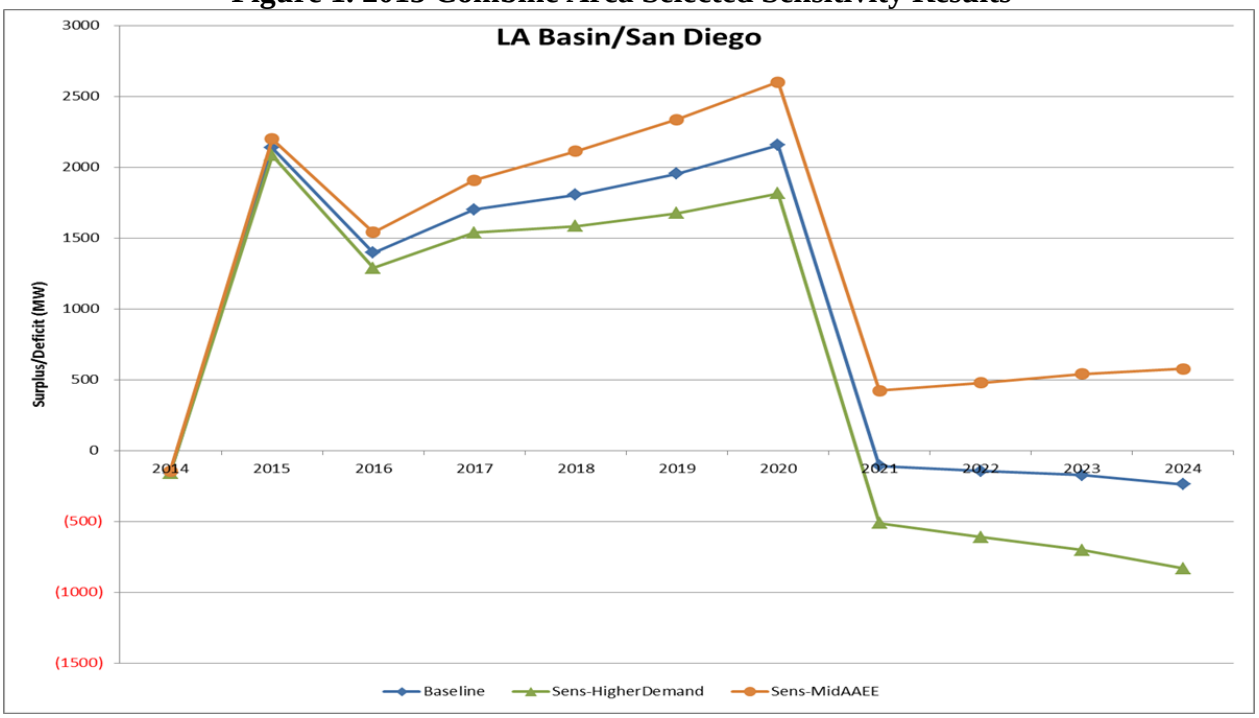
Transparency of the process is foundational for any system reliability effort. In fact, the 2017 Integrated Energy Policy Report (IEPR) summarized the LCAAT as the following: "*… [it] provides an integrated assessment of whether resources in five regions of Southern California are expected to meet or exceed capacity requirements for each local area. Projected shortfalls indicate a looming reliability problem."*[3] The simplistic format of this spreadsheet tool makes it easier for CEC Staff to assemble and/or modify data and assess a new set of assumptions.[4] Additionally, "[i]*f the assessment of the LCAAT is confirmed by in-depth power flow and stability studies by the [CAISO], then contingency mitigation measures would be considered."*[5] For example, in the 2016 IEPR, the LCAAT showed a projected shortfall in 2018 due to a delay in construction of the Carlsbad power plant (replacement project for Encina), which prompted the CAISO to conduct power flow and stability analyses.[6] The LCAAT served as a valuable visual tool in understanding the ability to maintain the local electric reliability in the face of planning uncertainties. The 2017

[1] U.S. Energy Information Administration, "Battery Storage in the United States: An Update on Market Trends," August 2021. Available at https://www.eia.gov/todayinenergy/detail.php?id=49236.
[2] *See* CEC Presentation on Midterm Reliability, 30 August 2021, at slide 29. Available at https://efiling.energy.ca.gov/GetDocument.aspx?tn=239554&DocumentContentId=72991.
[3] *See* CEC 2017 Integrated Energy Policy Report, February 2018, at 337. Available at https://efiling.energy.ca.gov/getdocument.aspx?tn=223205.
[4] Mike Jaske and Lana Wong, CEC 2015 Integrated Energy Policy Report Presentation on Projection Tool to Support Contingency Mitigation Decisions, 17 August 2015, at slide 7. Available at https://efiling.energy.ca.gov/GetDocument.aspx?tn=205726&DocumentContentId=21727.
[5] *See* CEC 2017 Integrated Energy Policy Report, February 2018, at 337.
[6] *Id.*

IEPR further stated that the "LCAAT is expected to be useful on an ongoing basis to help manage uncertainties."[7]

In a presentation from CEC staff Mike Jaske and Lana Wong, they express the purpose of the LCAAT as: to develop annual projections of resources versus local capacity requirement for Southern California; provide an analytic basis for understanding the timing and nature of a shortfall in a local capacity area and/or subarea in Southern California; and issues surfaced by LCAAT, confirmed by a power flow study, could lead to a recommendation to trigger mitigation measures or other actions. Figure 1 (below) shows an example of how the tool is used to highlight potential deficits. In two of the sensitivities run for the combined Los Angeles Basin and San Diego area, it shows a deficit starting in 2021.

Figure 1. 2015 Combine Area Selected Sensitivity Results[8]



In short, tools like this presented in the public space for stakeholder review provide a transparent and straightforward approach for everyone to see all procurement decisions of generation, storage and energy efficiency, and load forecasts in one place and quickly identify progress to plans. If this tool had continued to be used as recommended in the 2017 IEPR, it could potentially have identified the shortfalls in energy in the 2020 and after time frames. This may have provided more time for energy planners to fill those gaps with cleaner alternatives in contrast to emergency procurement decisions that exempt environmental protections. It similarly had the potential to assist in avoiding emergency resource deployment and permitting that forego the environmental process which the CEC's Application for Certification robust procedure helps to ensure. California

[7] *Id.*
[8] Mike Jaske and Lana Wong, CEC 2015 Integrated Energy Policy Report Presentation on Projection Tool to Support Contingency Mitigation Decisions, 17 August 2015, at slide 27.

Current reported in August 2021 that "reversing years of clean power priorities, the California Energy Commission is waiving air quality protections and rushing permits for new diesel-burning generators and gas-fired power plants in a desperate push to get more generation online by the end of October."[9] The LCAAT could be expanded to a statewide basis and we recommend bringing it back and utilizing it as part of a transparent process for mid- and long-term planning of reliability as stakeholders would be able to easily see the timeline of procurement and progress to those timelines.

3. Additional Topics for Consideration

In review of the CEC's excellent power point presentation, SoCalGas has a few additional topics for your consideration:

- Regarding import capacity limitations (slide 15), we recommend the CEC run a sensitivity that takes the average of the 10 most constrained days between May and October in the last five-year period. As climate change continues to affect large regions of the United States and globally, Westside heat storms may become more common, which would limit the availability of imports on the days of greatest need. Regarding Slide 21, how do the import capacity limits stack up to the 10 most constrained days in the last 5 years?

- Could the CEC clarify the exact assumptions for wind and solar in the final version of the midterm reliability (MTR) assessment? Slide 15 indicates the MTR used seven years of historic CAISO wind and solar generation and the supply stack used anticipated 2022 NQC values for wind and average projected solar shapes by month for solar. Slide 20 then states that wind and solar were modeled as full capacity, with the profiles, not ELCC or NQC values. It is unclear whether that is consistent or inconsistent with what is described in slide 15. Clarification of this would be beneficial. Further, on slide 29, it states that offshore wind was rolled into onshore wind. Most if not all California onshore wind resource regions already have existing turbines. Unless the CEC is assuming repowering some of those older wind farms, any new wind resource capacity additions will have much fewer capacity factors than existing resources. This limiting factor should be taken into consideration for the PSP and procurement scenarios.

- With regards to slide 26, why were combined cycle resources included in the scenarios as new gas capacity instead of gas turbines? Flexible capacity is the greatest need for the electricity system, rather than pure baseload generation (kWh); therefore, gas turbines would appear to be the optimal choice for all new gas capacity going forward. They offer the cheapest, most flexible option, can be coupled with battery storage to offer spinning reserves and can meet the need to run at Pmin to be ready for ramping requirements.

- There may be an error on slide 28; the legend includes a blue indicator that states "nameplate (MW)" with about 1,000 MW included in the resource capacities.

[9] Elizabeth McCarthy, "CEC Waives Air Pollution Rules in a Rush for New Diesel and Natural Gas Power," *California Current*, 17 August 2021. Available at https://cacurrent.com/cec-waives-air-pollution-rules-in-a-rush-for-new-diesel-and-natural-gas-power/.

- Since the CEC is the statewide planning and permitting energy agency, we recommend the CEC conduct a similar analysis for the other balancing authorities in California.

Conclusion

We appreciate the opportunity to provide insights and engage with the CEC so we may collectively advance the next generation of grid reliability-enhancing management approaches. To that end, we are open to and look forward to further engagement and perspectives on determining if additional thermal capacity beyond current procurement orders is needed to meet the standard loss of load expectation. Should you have any questions or wish to discuss these matters, please reach out to me or my engaged colleagues.

Respectfully,

/s/ N. Jonathan Peress

N. Jonathan Peress
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