SOUTHERN CALIFORNIA GAS COMPANY SUMMER 2024 TECHNICAL ASSESSMENT

April 1, 2024

Executive Summary

Southern California Gas Company (SoCalGas) has prepared this technical assessment to provide a forecasted outlook of system reliability during the coming summer season (April 1, 2024 through October 31, 2024), assess the preparedness of the system for the following winter season, and analyze the associated risks to energy reliability during these periods. For this assessment, SoCalGas analyzed the following: (1) pipeline capacity available to bring gas into the system, (2) the forecasted summer demand, (3) available system capacity to serve demand, and (4) the forecasted storage inventory for the following winter season. In performing this analysis, this assessment takes into consideration the various existing and potential outages and the operating restrictions on gas transmission and storage assets.

SoCalGas finds that it has sufficient capacity to serve the hybrid[1] forecasted summer peak demand of 3.269 billion cubic feet per day (BCFD), assuming customers utilize the available receipt capacity to deliver supply to the SoCalGas system and no further infrastructure outages occur than those considered in this assessment.

SoCalGas also performed a preliminary analysis of projected storage injection and resulting inventory through the summer to prepare for the 2024-25 winter season. Using a hybrid of demand forecast data prepared for the 2020 and 2022 California Gas Report (CGR), the projected SoCalGas capacity to receive pipeline supplies, and an estimate of storage field inventory levels on April 1, SoCalGas finds that the current maximum authorized system storage inventory level of 118.8 billion cubic feet (BCF)[2] can be reached by November 1. As such, SoCalGas does not foresee difficulty meeting the November total month-end minimum storage inventory level needed to maintain reliable service to core and critical noncore customers during the following winter season as specified in the SoCalGas Winter 2023-24 Technical Assessment.

[1] The 2024 California Gas Report (CGR) is still in development, and expected to be available during the summer season. During a heat wave in 2022, electric generation (EG) demand significantly exceeded the 2022 CGR high summer day demand forecast for several consecutive days, and were more comparable to the 2020 CGR forecast. For these reasons, SoCalGas has elected to use the 2020 CGR EG summer demand forecast combined with the 2022 CGR core and non-EG noncore summer demand forecasts, creating a hybrid between the two CGRs.

[2] This total capacity is currently authorized by the CPUC, but may be unachievable due to operational and/or other regulatory requirements.

System Reliability Assessment of Summer Months

SoCalGas does not have a summer design standard. This is partly because the SoCalGas system is a winter peaking system and service to the core customers is not at risk in the summer season. Although noncore customers are fully interruptible pursuant to the CPUC-approved SoCalGas Tariff Rule No. 23 and San Diego Gas & Electric Company (SDG&E) Gas Rule No. 14, the CPUC and SoCalGas/SDG&E have recognized that supply and operating constraints placed upon the electric grid balancing authorities[3] in the utilities' service territory can place electric reliability at risk, and understand the importance of working to maintain service to local electric generation (EG) plants in Southern California.

In assessing reliability for the upcoming summer months, SoCalGas analyzed the supply outlook for the system and the peak demand forecast, which are addressed in turn, below.

Supply Outlook, Available Flowing Pipeline Supplies and Storage Withdrawal Capacities

The SoCalGas/SDG&E gas transmission system has a current capability to receive up to 3.775 BCFD of flowing supply on a firm basis. This means if customers deliver that much supply to the SoCalGas system, and there is sufficient customer demand, SoCalGas can redeliver that gas supply to customers.[4] Supplies delivered to the SoCalGas/SDG&E system, however, do not reach these available receipt levels for a variety of reasons, including that customers may choose to use SoCalGas's balancing service rather than deliver supplies, California production has declined over time, system demand frequently does not require maximum delivery of supply, or flowing supplies may not be available due to weather patterns or maintenance impacting the interstate pipelines upstream of the SoCalGas system. Additionally, planned and unplanned pipeline outages on the SoCalGas/SDG&E system can further reduce available receipt capacity.

To calculate this season's capacity of the system to serve customer demand, assumptions must be made regarding the available supply. The peak summer demand period is expected to occur after July. During this timeframe, Line 4000 is assumed to be out of service for strength testing and Line 3000 is assumed to be out of service for remediation, resulting in a Northern Zone receipt capacity of 955 million cubic feet per day (MMcfd). Since no pipeline outages are anticipated in the Southern Zone, it is assumed the full capacity of 1,210 MMcfd is available. Lastly, Wheeler Zone capacity is assumed to have its full capacity of 765 MMcfd since no outages are anticipated on Line 225.

In addition to the outages and restrictions discussed above, SoCalGas's analysis took into consideration that customers do not typically fully balance their supply with their demand given SoCalGas's balancing rules. Reviewing scheduled deliveries shows that customers have historically used on average 85% of available interstate receipt capacity. In situations with significant infrastructure outages and limited storage supply, however, SoCalGas would require tighter balancing and expect to see higher capacity utilization as a result.

[3] California Independent System Operator (CAISO), Los Angeles Department of Water and Power (LADWP), and Imperial Irrigation District (IID).

[4] Customer demand may also be required to be in a specific location, such as on the Southern System in order to receive the full receipt capacity of 1,210 MMcfd at Blythe and Otay Mesa.

Given these considerations, and the infrastructure outages in the Northern Zone, for the purpose of this peak day capacity calculation, SoCalGas has adopted a peak day utilization assumption of 90% for all supplies except for local California production, which is assumed at the current production rate.

Using the scenario information outlined above, the resulting receipt capacities during the peak summer period are detailed below in Table 1.

Table 1. Available Flowing Pipeline Supplies

Receipt Point	**Capacity/Supply (MMCFD)**	**Details**
North Needles	660	Northern Zone capacity limited to 955 MMcfd due to Line 4000 hydrotest. No receipt capacity from Topock due to Line 3000 remediation. Line 3000 remediation does not further impact zone capacity.
Topock	0	
Kramer Junction	295	
Blythe	1,210	
Otay Mesa	0	
Wheeler Ridge & Kern River Station	765	
California Production	70	Current level of local California production.
Total	**3,000**	90% utilization except at California Production.
Assume 90% pipeline utilization	**2,707**	

While SoCalGas has factored in the anticipated operating restrictions on its transmission pipelines, unexpected outages on the transmission system, such as those resulting from third-party damage and safety-related conditions, may still occur throughout the summer season, further reducing available receipt capacity beyond the levels projected in this assessment.

For this assessment, based on current storage field withdrawal capacities, the supplies assumed in Table 1, and the resultant inventory levels expected during the peak summer demand period, SoCalGas assumed that 2.6 BCFD of storage withdrawal capacity would be available during the peak summer season. These capacities are dependent on having sufficient inventory levels in storage to sustain these withdrawal rates.

Peak Summer Demand Forecast and System Capacity Calculation
For the upcoming summer season, the forecasted level of total system demand is approximately 3.269 BCFD as shown in Table 2, itemized by customer type as:

Table 2. Summer 2024 Forecasted Customer Demand

Customer Type	Summer Demand (BCFD)
Core*	0.758
Noncore, Non-EG*	0.759
Noncore, EG**	1.752
Total	3.269

* 2022 California Gas Report forecast for summer 2024.

** 2020 California Gas Report forecast for summer 2024 + legacy OTC demand for summer 2023.

Using the values reflected in Table 2, SoCalGas analyzed how much of this forecasted demand the system can sustain using hydraulic simulations of its gas transmission and storage system under the pipeline supply scenario described in Table 1.

Based on the hybrid forecasted summer 2024 demand and system capacity, SoCalGas would be able to meet the peak day demand. SoCalGas does not have a detailed demand forecast for the summer season greater than the hybrid peak day demand of 3.269 BCFD, and the location and level of EG demand impacts the system capacity. However, given the level of available pipeline and withdrawal capacity, SoCalGas has capacity to serve a higher level of EG demand than shown in Table 2, should it develop.[5]

Note that the system capacity is typically less than the sum of the available pipeline and storage supplies as a result of system hydraulics. Customer demand is not constant over the course of the day, and gas supplies from interstate pipelines travel slowly across the pipeline network at a constant rate. During those times of the day when demand exceeds the pipeline supply, SoCalGas would use supplies from its storage fields to make up the difference. When customer demand drops off, SoCalGas would reduce the amount of supply withdrawn from its storage fields or even inject excess supply into them if system conditions permit. Because storage supplies are not used at a constant rate for the entire day, the system capacity is typically less than the sum of the available pipeline and storage supplies. Additionally, the increasing ramping needs of the EG demand pattern represented by the “duck curve” presents operational challenges with gas supply and may impact the need and frequency of supplies from our storage fields.

[5] The highest summer EG demand in the last ten years was 1.87 BCFD and occurred on September 9, 2015.

System Reliability Assessment for 2024-2025 Winter

While the summer season is a peak EG demand period, it is also when SoCalGas prepares for the upcoming winter season by injecting gas supply into storage for the following winter season.[6]

Using the public demand forecast data published in the 2020 CGR workpapers (for the EG market segment) and the 2022 CGR workpapers (for all other market segments) for the summer season (April through October 2024, average temperature with base hydro condition), a projection of the expected storage inventory levels on April 1 (95 BCF), and estimates for injection capacity at each field, SoCalGas performed a mass balance for the summer season examining the ability to fill storage.

The available pipeline supply used in the mass balance reflects foreseeable outages due to in-line inspections, hydrotests, and other maintenance and compliance work over the summer months. These supply assumptions consider the most reasonable outage for potential summer impacts and are assumed to further reduce receipt capacity and available supplies due to extended outage periods or pressure reductions.

The mass balance assessments assumed receipt point utilizations depending upon which assets are expected to be in service. SoCalGas analyzed different levels of receipt point utilization depending on the forecasted available supply. These utilization factors differ from those used in assessing the peak day capacities because the mass balance is a seasonal assessment, spanning all 214 days of the summer season. SoCalGas performed a mass balance using the hybrid 2020 and 2022 CGR demand forecast under an average temperature condition with base hydro where supplies are at 85% utilization if the total receipt capacity is over 3 BCFD for that month, and at 90% utilization if the total receipt capacity is under 3 BCFD for that month. Storage injection (INJ) and excess supply values are positive and storage withdrawal (WD) and supply shortfall values are negative. However, as system-wide injection capacity is diminished, it may become increasingly difficult to receive high levels of pipeline supply consistently through the summer season. This mass balance is presented below in Table 3.

[6] SoCalGas Operations does not purchase and store any gas supply for the use of any customer. SoCalGas's Gas Acquisition department purchases supplies for storage only for the SoCalGas retail core and the SDG&E wholesale core market segment, excluding those core customers served by Core Transport Agents as part of a Core Aggregation Transportation program (CAT) and other wholesale providers.

Table 3. Monthly Storage Injection Assessment (CGR Average Temperature with Base Hydro) (MMCF)

	2023						
	APR	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**
Supply Utilization	85%	85%	90%	85%	85%	85%	85%
CGR Demand	63,040	55,243	51,899	66,046	74,810	69,279	66,389
Pipeline Supply	77,198	79,771	76,350	79,376	79,376	76,815	79,376
Storage INJ (+) / WD (-)	10,727	1,890	1,483	0	0	0	0
Excess (+) / Short (-)	3,431	22,638	22,968	13,330	4,566	7,536	12,987
Month End Inv.(BCF)	105.83	107.72	109.20	109.20	109.20	109.20	109.20

SoCalGas expects to have sufficient capacity and supply to fill its storage fields by the end of the summer season, and store more than the minimum level of 41.8 BCF required for core reliability specified in the SoCalGas Winter 2023-24 Technical Assessment. Moreover, this calculation shows excess pipeline supply of approximately 87 BCF over the summer season, some of which could potentially be stored but for current operational and/or regulatory limitations. The mass balance assessment assumes that supplies at Otay Mesa are unavailable as, historically, little capacity is available to SoCalGas from the pipelines that supply Otay Mesa given the Mexican EG demand in the summer season.

Conclusion

This technical assessment provides forecasts of the upcoming summer and winter seasons. For the upcoming summer season, SoCalGas estimates that it would be able to meet the hybrid forecasted peak day demand. SoCalGas also expects to be able to fill its storage inventory in preparation for the winter 2024-25 season.