BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Application of Southern California Gas Company (U904G) and San Diego Gas & Electric Company (U902G) for Low Operational Flow Order and Emergency Flow Order Requirements.	Application 14-06-021 (Filed June 27, 2014)
Triennial Cost Allocation Proceeding Phase I Application of Southern California Gas Company (U904G) and San Diego Gas & Electric Company (U902G) for Authority to Revise their Natural Gas Rates Effective January 1, 2016.	Application 14-12-017 (Filed December 18, 2014)

RESPONSE TO JOINT PETITION FOR MODIFICATION OF THE DEPARTMENT OF MARKET MONITORING OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

The Department of Market Monitoring (DMM) of the California Independent System Operator Corporation (CAISO) submits these comments in response to the joint petition for modification (PFM) filed on August 15, 2018 by Southern California Edison Company (SCE) and Southern California Generation Coalition (SCGC) for modification of Decisions (D.) 15-06-004 and 16-06-039 as modified by D.16-12-016.

I. INTRODUCTION

SCE and SCGC seek action by the Commission to address the impact of extremely high spikes in SoCal Citygate gas prices on end-use electricity costs that appear to be driven by potential Operational Flow Order (OFO) noncompliance charges under SoCalGas Tariff Rule 30.G. SCE and SCGC request that the Commission temporarily cap the $25/dth noncompliance charge component of a Stage 4 and Stage 5 OFO at the $5/dth level currently applicable for Stage 3 OFOs.

II. DISCUSSION

DMM shares the concerns of SCE and SCGC about the impact of the relatively high level of potential OFO noncompliance under Stage 4 and Stage 5 OFOs on gas and electricity prices and costs. As noted in the joint PFM, since OFOs are generally declared after most gas market trading and scheduling is completed, low OFOs can have the effect of increasing the wholesale gas price without significantly affecting the amount of gas flowing into the SoCalGas/SDG&E gas system. DMM agrees with the assessment in the joint PFM that the abnormally high wholesale gas prices that have been recently experienced at the SoCal Citygate are the result of market participants' expectation that SoCalGas could issue low OFOs at Stage 4 or 5 after the Cycle 1 (and possibly the evening day-ahead gas nomination cycle) gas transaction window has closed. The increase in gas prices is in turn been having a direct impact on wholesale CAISO electricity prices, creating an amplified cost increase impact for end-use electric consumers that cannot be readily addressed through "better" gas scheduling.[1]

Impact of Recent OFOs on Gas Prices

The impact of the $25/dth noncompliance charge triggered during a Stage 4 or Stage 5 OFO has been clearly reflected in recent next day gas prices in the SoCalGas system. Figure 1 shows the difference between next day gas prices for SoCal Citygate versus SoCal border (shown by the yellow line) along with potential noncompliance charges on days when OFOs were declared (shown as blue dots).

[1] Joint Petition for Modification at p. 8-9.

Figure 1. Impact of Potential OFO Noncompliance Charges on Next Day SoCal Citygate Prices

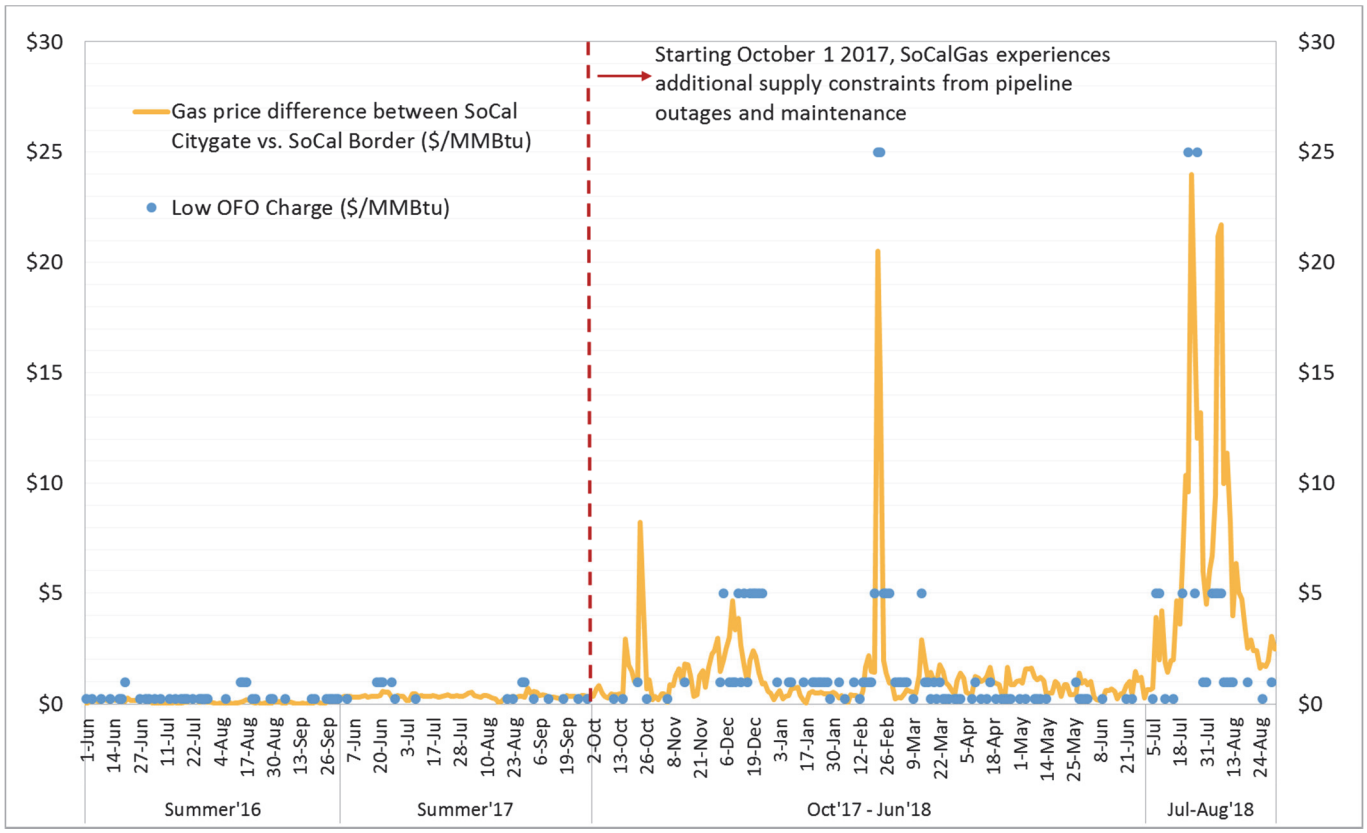


Table 1. Difference in Next Day Gas Prices at SoCal Citygate vs SoCal Border

Time period	*Difference between gas price at SoCal Citygate versus SoCal Border ($/MMBtu)*		
	Min/Max	**Average**	**Percent**
Summer '16 (June - Sept)	-$.05 - $.29	$0.10	+4%
Summer '17 (June - Sept)	$.09 - $.73	$0.36	+13%
Oct 2017 - June 2018	$.05 - $20.50	$1.21	+45%
July - August 2018	$.65 - $24.00	$6.17	+190%

As shown in Figure 1, gas prices at SoCal Citygate in the next day market clearly increased following days when OFOs are declared. The magnitude of these gas price increases is clearly correlated with the level of potential noncompliance charges associated with the OFO. High gas prices often continue to persist for a significant period after OFOs are declared. As shown in Figure 1, the magnitude and persistence of high gas prices triggered by the high $25/dth noncompliance charges under Stage 4 and Stage 5 OFOs have become particularly significant in recent months.

Table 1 shows a statistical summary of the difference in next day gas prices at SoCal Citygate versus SoCal border for the various periods of time included in Figure 1. During summer 2016 (when limitations on the Aliso Canyon gas storage facility were first in effect), average next day prices at SoCal Citygate were only $.10/MMBtu (4%) higher than prices at SoCal border. During summer 2017, this price difference increased to $.36/MMBtu (13%). In October 2017, additional limitations on the SoCalGas system began due to pipeline outages and maintenance. From October 2017 to June 2018, this price difference increased to $1.21/MMBtu (45%). During July and August 2018, average next day prices at SoCal Citygate were $6.17/MMBtu (190%) higher than prices at SoCal border.

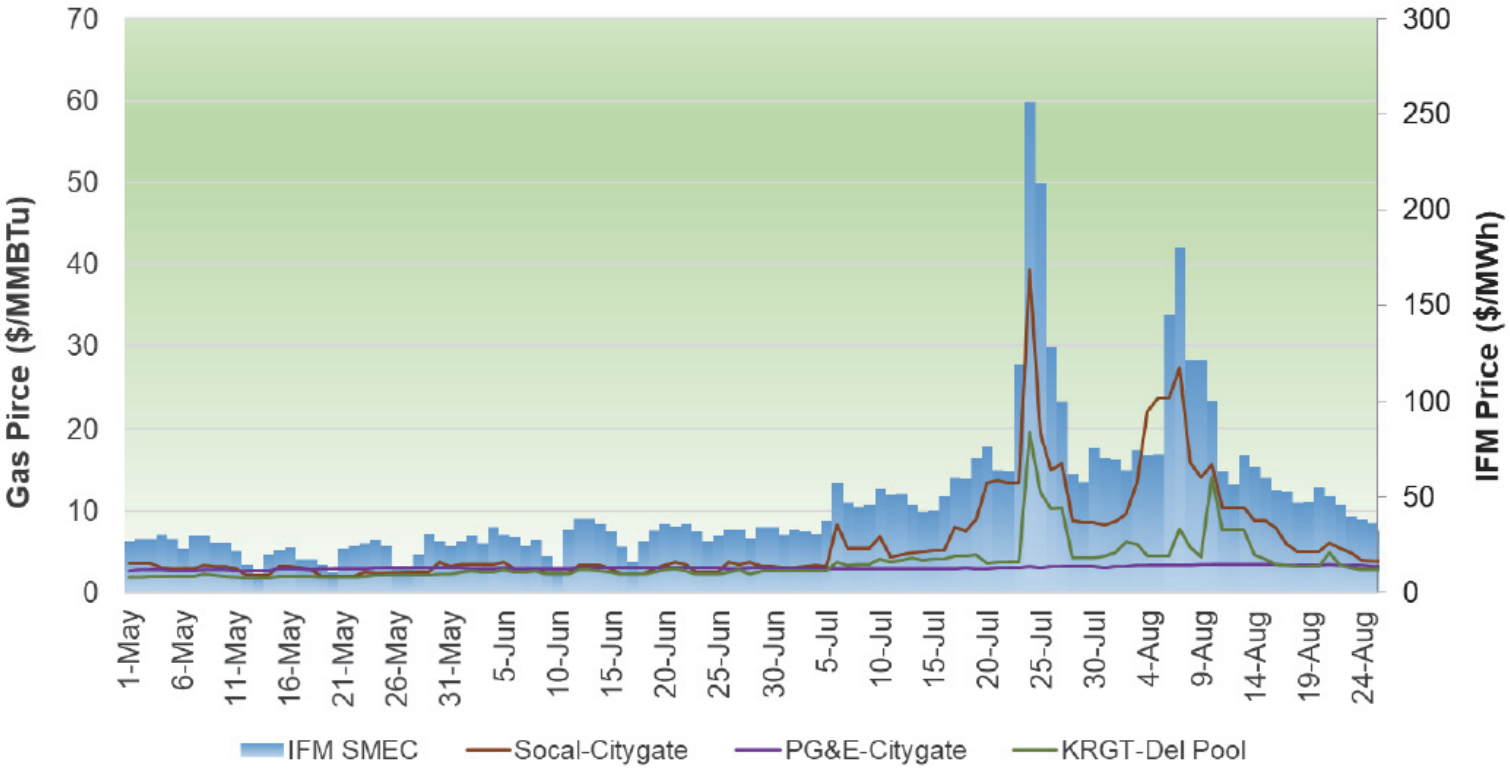
Impact of High Gas Prices on Electricity Prices

As explained in the joint PFM, high gas prices and simply the *potential* for high OFO noncompliance charges in the SoCalGas system can have an amplified impact on electric bid and prices throughout the CAISO's entire electricity market.[2] During many

[2] Joint Petition for Modification at p.14-15 (including Footnote 16, p.15)

periods over the last two months, prices throughout the entire CAISO system have been driven by high gas prices in the SoCalGas system. The overall impact of high gas prices in the SoCalGas system on day-ahead electric prices in the overall CAISO system is illustrated in Figure 2.

Figure 2. Impact of High SoCal Citygate Gas Prices on CAISO System Prices for Electricity



Source: California ISO, Market Performance and Planning Forum, August 29, 2018, p. 16. http://www.caiso.com/Documents/Presentation-MarketandPerformancePlanningForum-Aug292018.pdf

As shown in Figure 2, next day gas prices at PG&E Citygate have remained very stable in 2018, while price at SoCal Citygate have spiked sharply on many days in July and August. System marginal energy prices in the ISO day-ahead market (shown by the shaded blue bars in Figure 2) have tended to be highly correlated with prices for

next day gas in the SoCalGas area.[3] This reflects the fact that during many hours over the last two months, prices throughout the entire CAISO system have been driven by high gas prices in the SoCalGas system.

Impact of Lower Noncompliance Charges

DMM agrees that temporarily capping the noncompliance charge component of a Stage 4 and Stage 5 OFO appears to be an easy-to-implement solution to help mitigate gas price spikes that are causing substantial cost increases to gas and retail electric consumers. SCE and SDGC note that the cap on Stage 4 and 5 noncompliance charge proposed in the joint PFM should not negatively impact gas and electric system reliability because the noncompliance charge of $5/dth is still sufficiently high to incent appropriate behavior by noncore customers.[4]

During times of very constrained gas supplies in the SoCalGas area, DMM and the CAISO have both previously noted the importance of avoiding the dispatch of gas-fired generating units within the SoCalGas system in order to meet generation requirements that could be met by other resources.[5] The CAISO has sought to ensure this scenario does not occur by obtaining authority to apply special scalars to increase the SoCal Citygate gas prices that are used to set bidding limits for generating units in

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[3] System marginal energy prices are represented in Figure 2 as the *system marginal energy component* (SMEC) of locational marginal prices in the CAISO. The SMEC represents prices at each location in the CAISO excluding congestion and losses.

[4] Joint Motion at pp. 4-5.

[5] *Tariff Amendment to Enhance Gas-Electric Coordination to Address Risks Posed by Limited Operability of Aliso Canyon Natural Gas Storage Facility*, California Independent System Operator Corporation Docket No. ER16- ___-, May 9, 2016, pp.14-20. http://www.caiso.com/Documents/May9_2016_TariffAmendment_EnhanceGas-ElectricCoordination_LimitedOperation_AlisoCanyonNaturalGasStorageFacility_ER16-1649.pdf

the SoCalGas area. These *gas price scalars* can be used to ensure that bid limits for gas-fired units in Southern California are significantly higher than bid limits for gas-fired resources served by other gas systems (e.g. PG&E).[6]

As shown in Figure 2, when tight conditions exist in the SoCalGas area next day gas prices at SoCal Citygate have consistently risen significantly above gas prices for other major gas pipeline delivery points in the CAISO even without the special gas price scalars which the CAISIO is authorized to apply when setting bid limits. As shown in Figure 2, the maximum $5/dth noncompliance charge proposed by SCE and SDGC is still sufficiently high to allow gas prices in the SoCalGas region to rise well above gas prices for other parts of the CAISO system.

Analysis by DMM and the CAISO has indicated that setting the gas price scalar used to set limits for bids for committing gas-fired units so that SoCal~~Gas~~ Citygate prices are increased by 75% provides a high level of assurance that resources in the Southern California will be high enough in the economic merit order of CAISO supply resources to ensure these resources are dispatched only for local electric reliability needs rather than for electric demand in other parts of the CAISO system.[7] By comparison, the $5/dth noncompliance charge proposed in the Joint Motion equals 145% of the highest next day gas price for PG&E Citygate since May 2018 ($3.48/MMBtu). Thus, a $5/dth noncompliance charge appears sufficient to allow gas price premiums in SoCalGas system to rise to levels that would cause resources in the

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[6] Ibid.

[7] *Filing to Extend Temporary Measures to Address Limited Operability of Aliso Canyon Facility and to Make Permanent and Modify Other Measures to Address Potential Gas Limitations*. California Independent System Operator Corporation Docket No. ER17- ___- ,September 29, 2017, pp.22-24. http://www.caiso.com/Documents/Sep29_2017_TariffAmendment-AlisoCanyonElectric-GasCoordinationEnhancementsPhase3_ER17-2568.pdf

SoCalGas system to be dispatched by the CAISO only for local electric reliability needs rather than for electric demand in other parts of the CAISO system.

In addition, DMM notes that gas and electric price premiums within Southern California resulting from the potential for $5/dth noncompliance charges would also typically be sufficient to ensure that imports from outside of the CAISO system on interties into Southern California would be highly economic relative to gas fired generation within the SoCalGas system.

Other Mechanisms for Ensuring Gas and Electric System Reliability

DMM recognizes the critical importance of ensuring the reliability of the state's gas and electric systems in the face of gas supply limitations. Over the last two and a half years the CAISO and SoCalGas have developed a variety of other tools to manage limited gas supplies due to restricted operations at the Aliso Canyon Natural Gas Storage Facility and current reductions in SoCalGas' pipeline capacity. When gas limitation conditions occur in the SoCalGas service territory, CAISO staff follow a CAISO procedure addressing gas-electric operations coordination under such conditions.[8] If the potential for a gas curtailment exists, CAISO can manage the electric system by using gas usage constraints in the CAISO market software, adjusting internal transfer capability, or issuing exceptional dispatch instructions to generating resources.[9] The CAISO has indicated that these tools – combined with "exceptional gas-electric

[8] SoCalGas Service Area Limitations or Outages Procedure 4120C, http://www.caiso.com/Documents/4120C.pdf.

[9] *Filing to Extend Temporary Measures to Address Limited Operability of Aliso Canyon Facility and to Make Permanent and Modify Other Measures to Address Potential Gas Limitations, September 29, 2017,* Attachment C, p. 4, http://www.caiso.com/Documents/Sep29_2017_TariffAmendment-AlisoCanyonElectric-GasCoordinationEnhancementsPhase3_ER17-2568.pdf

coordination and advanced electric planning" – have been very effective in limiting positive imbalances in prior peak summer periods.[10]

As summarized in the CAISO's most recent report to the Federal Energy Regulatory Commission (FERC) on natural gas and electric coordination:

> Over the last several years, the CAISO has refined its operational practices to ensure coordinated operation of electric and gas systems and it has proposed additional measures to address ongoing gas constraints at the Aliso Canyon Gas Storage facility (Aliso Canyon) … This coordination includes seasonal planning, outage coordination, sharing of information about expected gas burns, and real-time communications between electric and gas operators. Recent experience has provided more insight with respect to how gas system limitations intersect with electric system operations. For example, during 2017, the CAISO and Southern California Gas Company (SoCalGas) coordinated on a regular basis to ensure that dispatch of electric generation does not create or acerbate [sic] pressure issues on SoCalGas' system. The CAISO also enhanced its tools to provide more granular gas burn information to pipeline operators, including providing gas burn information during operating day based on the results of its fifteen-minute market. In some instances, the CAISO utilized a maximum gas constraint as part of clearing the day-ahead electric market to recognize pressure constraints on SoCalGas' system.[11]

As described above, the various mechanisms for enhanced natural gas and electric coordination which have been developed by the CAISO and SoCalGas, along with the tools which the CAISO has to directly manage gas usage by electric generating units, provide a strong framework for ensuring the reliability of the natural gas and electric system under tight supply conditions in Southern California.

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[10] Ibid, p. 8.

[11] *Report of the California Independent System Operator Corporation on Natural Gas and Electric Coordination*, FERC Docket No. EL14-22, December 17, 2017, pp 2-3. *http://www.caiso.com/Documents/Dec14_2017_InformationalReport-NaturalGas_ElectricCoordination_EL14-22.pdf*

III. CONCLUSION

DMM shares the concerns of SCE and SCGC about the impact of $25/dth noncompliance charge under Stage 4 and Stage 5 OFOs on gas and electricity prices and costs. Given the various other mechanisms for enhanced natural gas and electric coordination available to the CAISO and SoCalGas, along with the tools which the CAISO has to directly manage gas usage by electric generating resources, DMM also questions the additional reliability benefits of the extremely high $25/dth noncompliance charges in terms of any improvement in gas scheduling and usage. The proposal to temporarily cap the noncompliance charges at the $5/dth level appears to provide a reasonable means for mitigating the financial impact of gas price spikes on consumers.

DMM respectfully requests the Commission give these comments due consideration in this proceeding.

Respectfully submitted,

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