

September 3, 2015

The Honorable Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

**Re: California Independent System Operator Corporation  
Docket No. EL14-22  
Errata to Motion to File Answer and Answer to Comments and  
Protest**

Dear Secretary Bose:

On September 2, 2015, the California Independent System Operator (CAISO), submitted its Motion to File Answer and Answer to Comments and Protest in the above captioned docket. The CAISO is submitting this errata to remove the second sentence of the second paragraph on page 4 which reads, *"This approach will enable the CAISO to exceptionally dispatch resources down when they face gas curtailments"*.

Respectfully submitted,

**By: /s/ Andrew Ulmer**

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**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

California Independent System  
Operator Corporation

Docket No. EL14-22

**ERRATA TO MOTION TO FILE ANSWER  
AND ANSWER TO COMMENTS AND PROTEST OF THE  
CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION**

**I. INTRODUCTION**

The California Independent System Operator Corporation (CAISO) hereby files this motion for leave to answer, and its answer to, the comments on and protests of the CAISO's July 23, 2015 filing in response to the Commission's Section 206 Order<sup>1</sup> regarding the timing of the CAISO's day-ahead market close and publication of day-ahead market results.<sup>2</sup> In its filing, the CAISO explained that its current day-ahead scheduling process provides sufficient opportunity for gas-fired resources to secure natural gas and pipeline transportation services. In addition, the CAISO explained that maintaining the current timing for day-ahead market close and publication of market

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<sup>1</sup> *California Independent System Operator Corp., et al*, order initiating investigation into ISO/RTO scheduling practices and establishing paper hearing procedures, 146 FERC ¶ 61,202 (2014) (Section 206 Order). See also *Coordination of the Scheduling Processes of Interstate Natural Gas Pipelines and Public Utilities*, 151 FERC ¶ 61,049 (Order No. 809) (2015).

<sup>2</sup> The CAISO submits this answer pursuant to Rules 212 and 213 of the Commission's Rules of Practice and Procedure, 18 C.F.R. §§ 385.212, 385.213 (2010). The CAISO requests waiver of Rule 213(a)(2), 18 C.F.R. § 385.213(a)(2), to permit it to answer the comments and protest filed in this proceeding. Good cause for this waiver exists here because the answer will aid the Commission in understanding the issues in the proceeding, provide additional information to assist the Commission in the decision-making process, and help to ensure a complete and accurate record in this case. See, e.g., *Equitrans, L.P.*, 134 FERC ¶ 61,250, at P 6 (2011); *California Indep. Sys. Operator Corp.*, 132 FERC ¶ 61,023, at P 16 (2010); *Xcel Energy Services, Inc.*, 124 FERC ¶ 61,011, at P 20 (2008).

results constitutes a more reliable, more efficient, and less disruptive approach than the alternative of moving the timing of this process to earlier in the day.

Multiple parties filed comments on the CAISO's response.<sup>3</sup> Of these parties, Six Cities, SDG&E, PacifiCorp, CDWR, NCPA, and PG&E support the CAISO's proposal. NGSA, WPTF and EPSA do not oppose the CAISO's proposal but raise concerns regarding natural gas and electric coordination. While these concerns exceed the scope the Commission's Section 206 order, the CAISO remains committed to exploring means to enhancing coordination between its electricity market and natural gas markets.

Only NRG opposes the CAISO's proposal. The Commission should reject NRG's protest because it fails to demonstrate how the CAISO did not comply with the Commission's Section 206 Order and requests relief that exceeds that scope of that order.

## **II. ANSWER**

### **A. The CAISO will continue to enhance its coordination activities with natural gas pipeline operators**

In its comments, NGSA argues that regional operators must remain proactive by continually monitoring and gauging regional circumstances and taking action if and when circumstances warrant.<sup>4</sup>

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<sup>3</sup> The following entities filed comments or protests: the Cities of Anaheim, Azusa, Banning, Colton, Pasadena and Riverside, California (Six Cities); San Diego Gas and Electric Company (SDG&E); PacifiCorp; the California Department of Water Resources (CDWR); the Northern California Power Agency (NCPA); Pacific Gas and Electric Company (PG&E); the Electric Power Supply Association (EPSA); the Natural Gas Supply Association (NGSA); the Western Power Trading Forum (WPTF); and NRG Power Marketing LLC and GenOn Energy Management (collectively NRG).

<sup>4</sup> Comments of NGSA at 5-7.

WPTF does not take a position regarding whether the day-ahead market close should stay the same or occur earlier in the day. However, WPTF raises concerns with the reliable and efficient operation of the electric markets in coordination with the gas markets that it asks the CAISO to address in its bidding enhancements stakeholder initiative.<sup>5</sup> WPTF points to grid conditions on June 30-July 1, 2015 to emphasize that generators face significant financial risk when the CAISO awards them with financially binding schedules and then they face gas curtailments, causing them to either perform or buy-back their schedule at real-time prices.<sup>6</sup> WPTF believes that better coordination can occur between natural gas supply systems, gas-fired resource operators, and the CAISO's market decisions.<sup>7</sup>

Similar to WPTF, EPSA does not advocate for an earlier close to the CAISO's day-ahead market.<sup>8</sup> Instead, EPSA raises concerns with the CAISO's day-ahead market rules that do not explicitly model gas supply constraints and do not excuse natural gas-fired resources from financially binding day-ahead schedules in the event a resource faces a gas curtailment.

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<sup>5</sup> Comments of WPTF at 3-4. WPTF argues that: (1) not all gas can be traded at timely cycle gas prices, or for that matter the day-ahead gas "index" price that the CAISO relies upon for many of its payment and market power mitigation calculations; (2) there is a presumption by the CAISO that suppliers should bear all of the fuel cost risk despite the lack of any organized capacity market to provide revenue streams to mitigate these risks outside of energy market transactions; and (3) increasing penetration of renewables are putting increasing pressure on gas balancing markets for the California fleet.

<sup>6</sup> On June 30 – July 1, 2015, the CAISO system experienced high demand and low imports causing the CAISO to dispatch natural gas-fired resources in the Los Angeles basin. As a result of a pipeline outage, SoCal Gas curtailed natural gas supply to several of these resources. These curtailments required the CAISO to dispatch additional units in Northern California to reduce the natural gas burn by generating units in Southern California.

<sup>7</sup> Comments of WPTF at 4-6.

<sup>8</sup> Comments of EPSA at 4-5.

The CAISO continues to devote resources to improving coordination with natural gas pipelines with regard to both markets and reliable operations of gas and electric markets. One aspect of this effort is continuing to ensure that CAISO and natural gas pipelines operators understand operational limitations of each other's systems under both normal and constrained conditions. The CAISO now provides information to the two large intra-state natural pipeline operators in California about daily gas usage on both a zonal and unit-specific basis subject to the terms and conditions of non-disclosure and use agreements. This information reflects day-ahead schedules and awards and allows each gas pipeline company to identify their gas line loading requirements for natural gas-fired generating units one day in advance of actual flows. The CAISO also provides an estimate of a daily gas usage two days in advance of an operating day to help manage electric and gas reliability. The CAISO expects this coordination will enhance the gas pipeline operators' ability to identify potential issues before real-time and reduce the number of unexpected gas curtailments.

Based on the events of June 30-July 1, 2015, the CAISO has also requested that the large intra-state gas pipeline operators provide generating units with sufficient information about fuel supply constraints so that scheduling coordinators for these units have the opportunity to submit an outage card in the CAISO's outage management system. If and when scheduling coordinators receive information about fuel supply constraints from gas transmission operators before the CAISO's publishes day-ahead market results, scheduling coordinators can use this process to mitigate the risk that they will receive financially binding day-ahead schedules and then face gas curtailments in real-time.

The CAISO has also initiated a stakeholder process to review energy and commitment cost bidding rules and improve alignment between these rules.<sup>9</sup> As part of this initiative, the CAISO is exploring increasing bid flexibility to allow resources to reflect changes in their actual costs, including potentially allowing resources without a day-ahead schedule to rebid commitment costs in the real-time.

**B. NRG fails to justify why the CAISO should modify the timing of its day-ahead market close and publication of market results**

In its comments, NRG claims that the CAISO has failed to justify why it should not move its day-ahead market close and publication of market results to a time before the timely nomination cycle for gas transportation.<sup>10</sup> NRG asserts that market participants need to know the price of gas in their day-ahead offers and be able to schedule the necessary natural gas quantities through the more liquid day-ahead timely nomination cycle for gas transportation. The CAISO understands why NRG believes this outcome is preferable, but given the timing of gas trading in the West and market participants' bid formulation procedures, it simply is not practicable. As explained in the CAISO's response to the Commission's Section 206 Order, market participants currently secure their gas supply needs in advance of submitting economic bids into the CAISO day-ahead market. According to market participants, the most liquid gas trading period occurs daily between 5:30 a.m. Pacific Time and 7:00 a.m. Pacific Time.<sup>11</sup>

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<sup>9</sup> See CAISO Bidding Rules Enhancements Straw Proposal: [http://www.caiso.com/Documents/StrawProposal\\_BiddingRulesEnhancements.pdf](http://www.caiso.com/Documents/StrawProposal_BiddingRulesEnhancements.pdf)

<sup>10</sup> Comment of NRG at 4-5.

<sup>11</sup> Comments of SCE on CAISO Bidding Rules Enhancements Initiative dated May 11, 2015 at 3. [http://www.caiso.com/Documents/SCEComments\\_FERCOrderNo\\_809.pdf](http://www.caiso.com/Documents/SCEComments_FERCOrderNo_809.pdf)

Comments of WPTF on CAISO Bidding Rules Enhancements Initiative dated May 7, 2015 at 1. [http://www.caiso.com/Documents/WPTFComments\\_FERCOrderNo\\_809.pdf](http://www.caiso.com/Documents/WPTFComments_FERCOrderNo_809.pdf)

Thereafter, these market participants coordinate their gas purchases with the submission of economic bids into the CAISO's day-ahead market. According to market participants this coordination process takes time to complete prior to the submission and validation of bids and starting the CAISO's market process at 7:00 or 7:30 a.m. – in order to publish day-ahead market results before 11:00 a.m. - is inconsistent with this timeframe.

NRG also argues that each organized market should protect against the risk of unexpected gas constraints. NRG asserts that the CAISO “has failed to account for its frequent gas emergencies and generator curtailments due to gas shortages.”<sup>12</sup>

First, NRG's argument is beyond the scope of the matters set forth in the Commission's Section 206 Order. Moving the day-ahead market process to earlier in the day so that market results are available before the daily nomination cycle may not have any mitigating effect on unexpected gas constraints that arise in real-time.

Second, in its response to the Commission's Section 206 Order the CAISO explained why moving the close of its day-ahead market and publication of market results is not necessary because under normal conditions natural gas-fired resources participating in the CAISO markets can obtain gas transportation service to support their day-ahead electric schedules. The CAISO also explained that moving the close of the day-ahead market to an earlier time could frustrate the use of more up-to-date load and variable energy resource forecasts. In light of the timing of natural gas trading that

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Comments of Shell Energy North America on CAISO Bidding Rules Enhancements Initiative dated May 6, 2015 at 1.

[http://www.caiso.com/Documents/ShellEnergyComments\\_FERCOrderNo\\_809.pdf](http://www.caiso.com/Documents/ShellEnergyComments_FERCOrderNo_809.pdf)

<sup>12</sup> Comments of NRG at 6.

occurs each morning, the CAISO's current day-ahead electric scheduling timeline provides natural gas price certainty for CAISO market participants submitting demand and supply bids. This certainty increases the likelihood that bids for energy from natural gas-fired resources accurately reflect the cost of fuel. In addition, changing the close of the CAISO's day-ahead market would disrupt scheduling coordinators' operational and business practices.

Third, as explained in section A of this Answer, the CAISO is separately working to mitigate the potential adverse consequences of unexpected gas constraints. The grid conditions that occurred on June 30-July 1 would not have changed if the CAISO had published its day-ahead market results before the timely nomination cycle. The CAISO provided SoCal Gas and SDG&E with the unit specific gas burn resulting from day-ahead market awards. The gas curtailments that occurred happened in real-time and resulted in the CAISO having to issue exceptional dispatches to generating units in the Los Angeles Basin.

Fourth, NRG's protest overstates the occurrence of gas curtailments for generating units in the CAISO balancing authority area. They are not frequent.<sup>13</sup> In contrast, ISO-New England has reported significant gas-fired generator outages or derates resulting from fuel limitations.<sup>14</sup> Simply put, the CAISO balancing authority area

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<sup>13</sup> The CAISO has searched its outage management system for records in 2014 and 2015 reflecting that natural gas fired resources have experienced forced outages because of fuel curtailments and has not located any such records. The CAISO has exceptionally dispatched natural gas-fired resources because of unexpected gas price spikes and natural gas curtailments, but these instances have occurred infrequently in 2014 and 2015.

<sup>14</sup> Order 809 at P 54. See *also* Order 809 at P 64 describing ISO-NE and PJM as the areas of fuel supply concern for electric generators and highlighting operational and market measures they have taken to address this concern.



has not experienced the same fuel supply concerns involving gas transportation infrastructure that have occurred in the East.<sup>15</sup> NRG provides no evidence that these same problems are impending in the CAISO balancing authority area.

**C. The Commission should not impose a shorter “solve time” on the CAISO’s day-ahead market process**

In its comments, NRG complains that the CAISO has exceeded its current three hour solve time multiple times during 2015. NRG also argues the Commission should direct the CAISO to reduce its three-hour solve time for the day ahead market process, i.e. the time between the deadline for submitting day-ahead offers and the publication of day-ahead results.<sup>16</sup> NRG’s request exceeds the scope of the directives in the Commission’s Section 206 order. The Commission specifically directed independent system operators and regional transmission operators (1) adjust the time at which it posts the results of its day-ahead energy market and reliability unit commitment process (or equivalent) to a time that is sufficiently in advance of the timely and evening nomination cycles to allow natural gas-fired resources to procure natural gas supply and pipeline transportation capacity to serve their obligations; or (2) show cause why such changes are not necessary. The Commission’s Section 206 Order did not notice or provide an opportunity for comment on whether the time periods for ISOs/RTOs to complete their day ahead market processes are unjust, unreasonable or unduly

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<sup>15</sup> See e.g. Natural Gas Infrastructure and Electric Generation: Proposed Solutions for New England prepared for the New England States Committee on Electricity by Black and Veatch dated August 26, 2013. [http://www.nescoe.com/uploads/Phase\\_III\\_Gas-Elec\\_Report\\_Sept.\\_2013.pdf](http://www.nescoe.com/uploads/Phase_III_Gas-Elec_Report_Sept._2013.pdf)

<sup>16</sup> Comments of NRG at 8-9. EPSA also suggests that the CAISO could condense the time between the close of the day-ahead market and the publication of market results, but also states that it “does not oppose [the] CAISO maintaining its clearing window for its Day-Ahead Energy Market at three hours.” See, Comments of EPSA at 5.

discriminatory and did not direct ISOs/RTOs to shorten the time between the deadline for submitting day-ahead offers and the publication of market results. Accordingly, the Commission, may not issue NRG's requested directive in this proceeding.<sup>17</sup>

The CAISO allocates three hours to complete its day-ahead market process, which consists of a sequence of steps that determine hourly market clearing prices for energy (including physical and virtual bids) and ancillary services, as well as the incremental procurement in the residual unit commitment while also mitigating bids to address non-competitive constraints.<sup>18</sup> These processes are co-optimized to produce day-ahead schedules at least cost while meeting local reliability needs. NRG's comments fail to discuss the fact that the CAISO is actively working to address recent delays in publishing day-ahead market results. In particular, the CAISO has identified a number of causes for these delays, including the validation steps the CAISO takes after the software creates a market solution, an increased number of constraints associated with the CAISO's full network model enhancements that make the market solution more complex, and problems with input data.<sup>19</sup> The CAISO is working to address the causes that have delayed the publication of market results and will continue to discuss its progress with stakeholders. The Commission should encourage NRG to continue to engage in those discussions.

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<sup>17</sup> See e.g., *City of Idaho Falls v. FERC*, 629 F.3d 222 (D.C. Cir. 2011)

<sup>18</sup> See generally, CAISO tariff section 31 and CAISO Business Practice Manual for Market Operation at section 2.3.1, which describe various steps of the day-ahead market process. [http://bpmcm.aiso.com/BPM%20Document%20Library/Market%20Operations/BPM\\_for\\_Market%20Operations\\_V44\\_clean.doc](http://bpmcm.aiso.com/BPM%20Document%20Library/Market%20Operations/BPM_for_Market%20Operations_V44_clean.doc)

<sup>19</sup> The CAISO has discussed these issues with stakeholder in its market performance and planning forum. See slides 29-37 of the following presentation [http://www.aiso.com/Documents/Agenda-Presentation\\_MarketPerformance-PlanningForum\\_Jul21\\_2015.pdf](http://www.aiso.com/Documents/Agenda-Presentation_MarketPerformance-PlanningForum_Jul21_2015.pdf)

### III. CONCLUSION

The Commission should not require the CAISO to modify the timing of CAISO's current day ahead scheduling close and publication of market results. The overwhelming majority of market participants either support or do not oppose this outcome. The Commission should reject NRG's protest because it fails to provide a sufficient justification that outweighs the reasons for maintaining the current timing of the CAISO's day-ahead market processes. Moreover, NRG's request that the Commission direct the CAISO to shorten the time it takes to publish market results after the close of day-ahead bidding exceeds the scope of the Commission's Section 206 Order.

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Dated: September 3, 2015

## CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing document upon the parties listed on the official service lists in the above-referenced proceedings, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated at Folsom, California this 3<sup>rd</sup> day of September 2015.

*/s/ Anna Pascuzzo*  
Anna Pascuzzo