**Formal Comments**

**Quadrant:** Wholesale Electric Quadrant (WEQ)

**Committee:** Gas Electric Harmonization (GEH) Committee

**Request:** Possible Activities and Deliverables for the GEH Committee

**Submitted By:** ISO/RTO Council (IRC) Standards Review Committee (SRC) and Electric Gas Coordination Task Force (EGCTF)[[1]](#footnote-1)

**Date:** 07/21/2021

The IRC SRC and EGCTF submit the following comments in response to the request for possible activities and deliverables for the NAESB Gas Electric Harmonization Committee.

Respectfully Submitted,

Kathleen Goodman, SRC Chair

ISO-NE

Mike Knowland, EGCTF Chair

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# introduction

The ISO/RTO Council (“IRC”) Standards Review Committee (“SRC”) and the IRC Electric Gas Coordination Task Force (“EGCTF”) thank the North American Energy Standards Board (“NAESB”) for this opportunity to comment on gas-electric coordination, in response to NAESB’s recent questions. NAESB’s questions highlight some of the challenges the IRC SRC and EGCTF have previously identified and highlight the shared responsibility of market entities, utilities, and the states to work to enhance reliability in the face of complex and urgent challenges to electric system reliability. The IRC SRC and EGCTF collectively focus these Comments on NAESB’s question number(s) 1(d), 2 and 3.

The IRC SRC and EGCTF value the robust exchange of views that NAESB’s request for comments on these questions will generate and look to NAESB to consider all comments it receives during this process.

The issue of Gas Electric Harmonization (“GEH”) is an important one to IRC members, because IRC members monitor, manage, and respond to tight supply conditions on extreme load days. When loads begin trending higher in response to extreme temperatures, there have been occasions when the output from generating resources has simultaneously fallen, often faster than previously forecast. That combined with trailing maintenance outages and a high volume of unplanned generation outages, and IRC members experience increasingly tighter operating conditions and an increasing reliance on traditional resources. In those circumstances, operators rely on gas-fired generation which can start-up and ramp quickly, to offset the shortfall and ensure grid resilience. While none of these uncertainties may be extreme by itself, the aggregate uncertainty can adversely affect reliability.

Additionally, as NAESB considers gas-electric harmonization activities, the IRC SRC and EGCTF recommend that NAESB move forward in a manner that is consistent with the results of the FERC and NERC Joint Inquiry into the February 2021 cold weather event.

# COmments

**Question 1. Is there specific action to support gas and electric market coordination that NAESB GEH Committee should recommend to the Board of Directors in response to recent events and/or the energy grid transformation?  These actions may include, but are not limited to:**

**(a) a review of the existing NAESB gas-electric coordination standards for possible changes,**

**(b) the development of new market coordination standards,**

**(c) a review of coordination processes with external organizations, and**

**(d) any other activities within the scope of NAESB.**

RESPONSE to 1(d):

The IRC SRC and EGCTF are less concerned with “how” NAESB undertakes or evaluates the following activities(*i.e.*, whether NAESB takes action by modifying an existing standard or developing a new standard). Rather, these comments and our concerns focus on why NAESB should take some action. We believe the steps described below merit consideration, and, if these steps were to be implemented, they would increase overall gas reliability and market efficiency. To the extent these steps fall within NAESB’s purview, the IRC SRC and EGCTF recommend that NAESB consider them:

* **Enhance the alignment between electric and gas scheduling practices.**

The IRC SRC and EGCTF recognize and appreciate the past strides NAESB has made to align the scheduling practices of the electric and gas day; however, there remain some additional process improvement opportunities that could, if undertaken, increase reliability and enhance market efficiency,[[2]](#footnote-2) including, for example:

* + Consider weekend and holiday schedules: heading into the 2021 President’s Day weekend, impacted IRC members had to commit generation units on Thursday, February 11th (based on the 5-day forecast) in order for generators to nominate gas and be able to run the following Tuesday, February 16th. This turned out to be a good decision in 2021; however, the five-day forecast typically carries a lot of uncertainty. When the forecast changes, this can result in reduced efficiency and incremental cost to Market Participants if generators lack the ability to refine their gas nominations. Market efficiencies could be realized if more flexible scheduling practices were adopted, so that schedules could be modified to more closely match the forecast as the operating day draws near. Additionally, load forecasts made on Friday for Monday, particularly in the winter season, can end up being under-forecast creating greater reliability risk with the ability of a generator to procure additional gas over the weekend period.
	+ Modify scheduling requirements to reflect actual gas delivery. For example, currently when a generator is dispatched to generate electricity over a 12-hour period, the prevailing industry practice is that the purchase must be equally apportioned and scheduled for delivery with the pipeline over a 24-hour period. This fails to accurately reflect the real-time usage of the end user and makes it difficult for the gas system to plan reliable operations. With an ever increasing need to have natural gas fired generators respond to greater fluctuations in energy due to the proliferation of variable and intermittent electric resources, shorter gas nomination periods can benefit both buyers and sellers of natural gas used to fuel electric generators. Shorter time commitments for gas deliveries, particularly in times of missed temperature forecasts, increase market opportunities for gas producers. We recommend NAESB explore the formation of rules for hourly gas nominations to better align with generator operations.
	+ Evaluate impacts on system ramp and peaking resource times due to the changing resource mix; i.e. system ramp. Consider the opportunity to support the development of non-traditional gas market products to support these requirements. With the increasing number of intermittent electricity resources being installed, and increasing variability in electric load, imports and exports, dynamic changes in demand increasingly require gas-fired power plants, with their fast start ability and quick ramping capability, to respond and serve as a backstop in maintaining the reliability of the power grid. This requires pipeline support, as described in Kinder Morgan’s comments:[[3]](#footnote-3)

“*Pipelines have to be able to deliver large volumes of gas on short notice, a major shift from traditional model of supplying gas to industrial and local distribution markets. Natural gas deliverability is the ability to deliver gas at the required location, time, pressure and quantity. The higher deliverability requires more capacity reservation, more known notice, more hourly service, and more reliance on linepack and market area storage."*

* + Consider the development of a more standardized approach to gas pipeline restriction notifications to improve the communication and clarity of those notices. This could potentially include a requirement to include a graphic of the specific geographic location that the notification covers. Additionally, improved uniformity within the gas industry of the use and definition of the various pipeline notices (i.e. Operational Flow Orders, Weather Alerts, Critical Day Notices, Ratable Take Requirements). Perhaps the clarity of Operational Flow Orders (OFO) could be improved by creating OFO gradients (example OFO-1 through OFO-4) wherein each level would have its specific definition of impact with a level 1 being least impactful while a level 4 would be most impactful.
* **Explore how NAESB could support organized clearinghouse efforts; *e.g.* through the development of standardized data formats, to facilitate a secondary market for the resale of unused capacity.**

During the February 2021 cold weather event, some industrial end users shut down their operations freeing up firm capacity for resale. Where there was no organized clearinghouse to facilitate a secondary market, industrial end users were left to their own devices to identify purchaser(s) for bilateral transactions, to resell their unused capacity. As a result, some of the capacity went unsold and unused. In these kinds of situations, an organized clearinghouse would bring sellers and purchasers together, thereby increase trading liquidity and market efficiency within the secondary market. The IRC SRC and EGCTF recognize that some trading platforms already offer this type of service. In those instances, any new efforts undertaken by NAESB should recognize and complement these services so as not to undermine their viability.

* **Explore what could be done to enhance gas operational readiness when extreme events are forecasted.**

Unlike electricity, which travels at the speed of light, the pace of gas delivery is much slower (*i.e.* max. speed of 30 mph), so instantaneous delivery is not possible. To address this issue, entities employ gas storage solutions to meet periods of peak demand. In addition, when extreme weather is forecasted, there is an acceptable range over which the volume of gas can be safely “stored” in the pipeline to prepare in advance of cold weather to maximize throughput.

IRC SRC and EGCTF recommend NAESB explore what additional actions could be taken to prepare for extreme events.

* **Explore what could be done to enhance the availability of firm transportation products with flexible delivery.**

IRC SRC and EGCTF see a reliability benefit that could be derived in operating the electricity grid if critical generators were able to procure firm delivery for extreme events; even though it is not typically cost effective for generators to pay for firm delivery all of the time. If firm product offerings were available that provided more flexible commitment terms to generators, more generators would be open to procuring firm gas delivery. This item could be paired with recommendation #2 above to support standardization of gas system parameters and operational data to help facilitate the visibility and resale of available firm capacity.

**Question 2: Are there current activities underway within the industry that would preclude or delay action by NAESB related to gas and electric market coordination at this time, including but not limited to the FERC and NERC Joint Inquiry into 2021 Cold Weather Grid Operations?**

Several ISO/RTOs are conducting or have conducted analyses of the cold weather event of 2021.  To the extent these are complete, we urge the GEH committee to review and evaluate those findings for additional business practices. Additionally, given the FERC and NERC Joint Inquiry currently underway, NAESB should move forward in a manner that is consistent with that FERC and NERC Joint Inquiry.

**Question 3: Are there other directions the Board of Directors should consider to support gas-electric market coordination?**

Aside from the gas electric coordination activities discussed above, there are other aspects of gas electric coordination that the Board of Directors should consider. The IRC SRC and EGCTF believe that infrastructure improvements, not operational improvements, are more likely to achieve significant reliability advancements. We recognize that such infrastructure improvements require capital investment for which cost recovery rules vary by jurisdiction (federal versus state and state-by-state). As regulation of gas infrastructure is outside of NAESB’s purview, the IRC SRC and EGCTF are requesting the consideration by the NAESB Board of Directors in advancing NAESB initiatives that may support the following gas-electric market coordination efforts:

* **Mitigation of** **common mode failures** which create significant challenges to reliable grid operations and resource adequacy.[[4]](#footnote-4)
* **Weatherization of natural gas-fired generators to meet a clear and measurable benefit[[5]](#footnote-5)**
* **Prioritization of critical gas infrastructure facilities, e.g. natural gas compressor stations.** Along with recognizing the criticality of residential end users needing natural gas for space heating, there is a commensurate need to recognize there are residential end users needing electricity for space heating. To that end, specific facilities, including natural gas compressor stations are critical loads that need to remain energized in order to support reliable pipeline operations and should be classified as such in utility load shedding plans.
* **Reliability / Resilience Data Sharing.** There is a need for sharing of pipelines’ prospective identification of vulnerabilities and threats on their systems and, sharing on a confidential basis in real-time, the pipeline’s modeling of such contingencies and communication of recovery plans. This would include appropriate levels of extreme weather vulnerabilities that would impact reliability across critical infrastructure. This would ensure that the RTO has the best information in real-time to make a determination whether to increase Operating Reserves or take other emergency actions in response to a pipeline break or other contingencies occurring on the pipeline system. Although a degree of effective coordination and communication with the pipelines serving the IRC Regions has been achieved, more of a focus on real-time coordination of modeling of contingencies and real-time communication of same would ensure greater consistency in coordination and information and can bring gas/electric coordination, to the next level to face the next generation of resilience issues. Accordingly, to the extent specific agreements are not already in place, the IRC recommends a more holistic regulatory framework for identifying and coordination of modeling of (1) pipeline contingencies in RTO planning and (2) real-time impacts of adverse pipeline events on BES operations.

# CONCLUSION

The ISO/RTO Council Standards Review Committee and the IRC Electric Gas Coordination Task Force have outlined here several measures for NAESB to consider as it works to enhance reliability, in the face of complex and urgent challenges to electric system reliability that NAESB has identified in its Comment Questions.

The IRC SRC and EGCTF value the robust exchange of views that NAESB’s request for comments on these questions will generate and urge NAESB to take action consistent with these Comments. Because IRC members monitor, manage and respond to supply conditions every day, and they respond to tight supply conditions on extreme load days, these Comments merit NAESB’s close attention.

The IRC SRC and EGCTF believe that NAESB’s gas-electric harmonization activities combined with and consistent with the results of the FERC and NERC Joint Inquiry into the February 2021 cold weather event can enhance grid reliability and resilience, and the IRC SRC and EGCTF support those efforts.

The IRC SRC and EGCTF thank NAESB for this opportunity to comment.

1. Participants in these comments include the following: California Independent System Operator Corporation (California ISO), the Independent Electricity System Operator of Ontario, Inc., (IESO), ISO New England, Inc. (ISO-NE), Midcontinent Independent System Operator, Inc., (MISO), New York Independent System Operator, Inc. (NYISO), PJM Interconnection, L.L.C. (PJM) and Southwest Power Pool, Inc. (SPP). [↑](#footnote-ref-1)
2. Reference: MISO comments filed at FERC in support of the Technical Conference on Climate Change, Extreme Weather and Electric System Reliability (Docket No. AD21-13-000), page 4 and page 21. [↑](#footnote-ref-2)
3. ***Pipelines need to offer flexible gas deliveries as renewables’ role grows***, S&P Global Market Intelligence, October 10, 2018 [https://platform.marketintelligence.spglobal.com/web/client?auth=inherit#news/article?id=46951959&KeyProductLinkType=6](https://platform.marketintelligence.spglobal.com/web/client?auth=inherit%23news/article?id=46951959&KeyProductLinkType=6%20) [↑](#footnote-ref-3)
4. Reference: MISO comments filed at FERC in support of the Technical Conference on Climate Change, Extreme Weather and Electric System Reliability (Docket No. AD21-13-000), page 20. [↑](#footnote-ref-4)
5. Reference: [MISO comments filed at NERC in response to NERC Project 2019-06: Cold Weather](https://www.nerc.com/pa/Stand/Pages/Project%202019-06%20Cold%20Weather.aspx) [↑](#footnote-ref-5)