**via posting**

**TO:** NAESB Gas-Electric Harmonization (GEH) Forum Participants and Interested Industry Parties

**FROM:** Caroline Trum, NAESB Staff, Director Wholesale Electric Quadrant

**RE:** Staff Notes from theNAESB Gas-Electric Harmonization Forum Meeting – January 12, 2023

**DATE:** February 1, 2023

Dear NAESB Gas-Electric Harmonization Forum Participants,

A NAESB Gas-Electric Harmonization (GEH) Forum meeting was held on January 12, 2023 at 9:00 AM Central. Mr. Gee, Ms. Tierney, and Mr. Wood presided over the meeting. The notes below reflect the NAESB staff summary of the meeting.

A recording of the meeting has been posted on the NAESB GEH Forum webpage: <https://naesb.org/recordings/geh011223recording.mp4> 3

The chat log from the meeting has been posted on the NAESB GEH Forum webpage: <https://naesb.org/pdf4/geh011223chat.docx>

| **Notes from the January 12, 2023 NAESB Gas-Electric Harmonization Forum Meeting** | |
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| **Administrative:** | Mr. Booe welcomed the participants. He stated that a survey with a request for comments was not utilized for this meeting and that discussion is intended to be more free-form. Mr. Booe noted that prior to the meeting, Mr. Glaser contacted the NAESB office and offered to make a presentation on behalf of PJM regarding the impacts of Winter Storm Elliott. He indicated that NAESB GEH Forum leadership recognized that, as one of the first industry-wide meetings since the storm occurred, the GEH Forum was presented with a unique opportunity to discuss any initial takeaways that may shape broader gas-electric harmonization discussions. He stated that NAESB GEH Forum leadership agreed to make a limited exception to allow the presentation by PJM in order to help facilitate discussions in this area  Mr. Booe reminded the participants of the NAESB Antitrust and Other Meeting Policies.  Mr. Booe stated that a preliminary [NAESB GEH Forum Meeting Schedule](https://naesb.org/pdf4/geh_schedule.docx) for 2023 is posted to the website. He noted that, as discussed during the previous meetings, NAESB is working with the various trade organizations and trade associations that have been participating in the NAESB GEH Forum to make available any education material or presentations that could be helpful. |
| **Review and Discuss the GEH Forum Chairs’ Work Paper** | Mr. Booe stated that the [work paper](https://naesb.org/pdf4/geh011223w1.pdf) posted for the meeting contains an overview of the background and progress of the efforts to date, a write-up of the request from FERC and NERC to the forum, and a high-level categorization of the recommendations and proposals for consideration offered by forum participants. He explained that in the four NAESB GEH Forum meetings held between September and December 2022, over 429 individuals participated representing 232 organizations and 34 sets of comments were submitted from 21 different organizations or groups.  Mr. Gee stated that the comments and recommendations made by NAESB GEH Forum participants can be categorized into ten general topics: (1) electric market design; (2) gas market design; (3) information sharing; (4) infrastructure; (5) intrastate gas market; (6) Jones Act waivers; (7) improved planning; (8) service prioritization; (9) resiliency requirements; and (10) weatherization. He explained that while the forum activities will now be pivoting from a majority fact-finding phase to refine these recommendations and considerations, additional discussions on certain topics may be beneficial, such as information around Winter Storm Elliott. Mr. Gee noted that previous intrastate discussions have mainly focused on the Texas markets and the impact within the ERCOT footprint, but as evidenced by Winter Storm Elliott, these types of issues could potentially impact any part of the country. He suggested that participants begin discussions with the presentation from Mr. Glaser and the impacts of Winter Storm Elliott.  Mr. Wood echoed Mr. Gee’s suggestion, commenting that it would be helpful to identify if there were any “lessons learned” from Winter Storm Uri that were applied as part of the response to Winter Storm Elliott. He reiterated that the purpose of the forum is to engage in industry-wide discussions and identify recommendations that can be further considered for action by the appropriate parties. Mr. Wood noted that although NAESB is a standards development organization, both FERC and NERC recognized NAESB as the most appropriate entity to facilitate the forum. He asked that the participants continue to work together as the forum activities move into the next stage.  Ms. Tierney followed-up on Mr. Wood’s comments, noting that the purpose of the forum is not to mandate a solution but rather collect information and perspectives to shape recommendations for consideration by FERC, NERC, and other regulatory bodies or entities. Mr. Desselle agreed, stating that the forum is an opportunity for the natural gas and electric industries to collectively work together to help inform the decision of policy makers. |
| **Discuss Impacts of Winter Storm Elliot** | Mr. Booe asked Mr. Glaser to provide the [presentation](https://naesb.org/pdf4/geh011223a1.pdf) from PJM regarding Winter Storm Elliott.  Mr. Glaser provided an overview of the impact of Winter Storm Elliott within the PJM footprint. He stated that although PJM experienced a loss of natural gas-fired generation and had to enter emergency procedures, there were no load shedding events or voltage reductions. Mr. Glaser explained that PJM had to enter into EEA Level 2 as well as obtain an emergency order from the U.S. Secretary of Energy for emission waivers in order to keep its operating generation units running. He noted that while PJM utilizes a penalty-based system of non-performance charges to encourage and incentivize weatherization and firm supply, a number of natural gas-fired generation units were unable to perform when called upon. Mr. Glaser noted the lack of liquidity in the market due to the holiday weekend over which the event occurred and the observed lack of natural gas availability during the event.  Mr. Glaser stated that while more information will be available in the coming weeks, the initial key takeaways by PJM are that improvements could be made regarding winterization, timing of notifications, and coordination communications. He explained that advanced notifications about supply and production issues could have provided PJM with additional time to source back-up generation instead of addressing issues in real-time. Mr. Glaser noted that while there was robust communication between PJM and the natural gas pipelines within its footprint, broader situational awareness, including insights into the status of production infrastructure, would have been beneficial.  Mr. Wood asked if Mr. Glaser was aware of any issuances of force majeure during Winter Storm Elliott and if PJM is provided notice of these issues contemporaneously with the impacted customers. Mr. Glaser responded that PJM does not have a direct level of communication with production facilities, but the PJM gas desk does directly coordinate with natural gas pipelines. He indicated that within the PJM footprint, he is aware of two natural gas pipelines issuing force majeure notices due to compression station losses. Mr. Wood asked if the PJM gas desk also coordinates with LDCs or natural gas utilities. Mr. Glaser responded that PJM has generation resources located behind the city gates and communicates with the entities that serve those resources.  Mr. Gee observed that, while a potential useful tool to incentivize future investments, non-performance penalty fees do not solve issues happening in real-time. Mr. Glaser responded that even if non-performance penalties do incentivize generators to procure firm natural gas transportation, the generator will still be unable to perform if there is no natural gas to be delivered. Ms. Tierney asked if PJM had information regarding the number of generators that were unable to perform but had contracted for firm natural gas supply and/or firm natural gas transportation. Mr. Glaser responded that this information would be available in the coming weeks. Mr. Wood asked if natural gas storage was able to be utilized during the event. Mr. Glaser answered that the available data does show that to the extent used, storage resources did perform.  Mr. Kimm stated that prior to the weather event, MidAmerican was not scheduled to run its natural-gas fired generation but was called upon in real-time to operate these resources and had difficulties obtaining the necessary fuel on the spot market. He explained that fuel was not procured in advance because there was not a commitment to run these resources in the day-ahead market and other MidAmerican generation resources were operating at a surplus. Mr. Kimm noted that the spot market for natural gas during extreme weather events can lack liquidity and that natural gas needed for fuel could be better obtained through more advanced notice. Mr. Glaser commented that the electric system is dynamic in nature and that there needs to be discussions as to how greater liquidity can be created in the natural gas market. Mr. Gee noted that GEH Forum participants have previously discussed a more robust secondary market for end users to make available unused capacity and fuel as one potential method to increase gas market liquidity.  Mr. Schroeder stated that the first nine hours of a power day within an ISO/RTO overlap with gas day and that during these times, under normal conditions, obtaining natural gas is typically not an issue if nominated timely, but that if a nomination is not timely, there is a risk that firm transportation capacity may not be available in the evening cycle, even if the entity holds firm transportation rights. He added that this issue is compounded on days with extreme weather, meaning that no-notice or short-notice service for natural gas can be difficult to obtain. Mr. Schroeder suggested that one way to alleviate this issue is to better align timing of dispatch awards with the ability to secure natural gas supply.  Commissioner Fedorchak noted the connection between the availability of natural gas capacity and market liquidity, especially during weekends or holidays, and electric generation. She suggested that it may be helpful to identify any market changes that can be made to increase natural gas services tailored to meet the holiday or weekend needs of electric generation.  Ms. Elder asked if part of the issue in obtaining natural gas during weekend or holiday time periods, is an inability by end use customers to reach an in-person natural gas scheduler. Mr. Glaser responded that it may be useful to evaluate the structures for accessing natural gas. Mr. Gee noted that discussions during the NAESB GEH Forum have highlighted that during weekends, most available natural gas and transport capacity has already been contracted for but that both capacity and commodity could be made available on a secondary market during an emergency situation.  Ms. Elder asked how natural gas compression station failures impacted the availability and supply of natural gas and the causes of these outages. Mr. Gulen noted if natural gas infrastructure reliant upon electricity to operate is not identified as a critical facility, then that facility could be inadvertently subject to load shed during extreme events. He commented that while winterization is likely needed to protect the natural gas supply to help ensure the reliability of the electric system, natural gas is not solely used to produce electricity. Mr. Gulen stated that a challenge will be in determining how the winterization costs should be allocated. Mr. Gee commented that the energy industry is reliant upon natural gas for electricity production and as such, there needs to be some degree of certainty that natural gas will be available when called upon during critical peak periods.  Ms. Tierney stated that within organized wholesale electric markets that offer a capacity market, the amount of capacity that a generation resource can be expected to provide is calculated based on certain determinations made by the ISO/RTO, including the expected value of a megawatt and the expected availability of a generator when committed. She noted that for renewable resources like wind and solar generation, the absolute capacity of the resource is often discounted to account for the variable nature of these resources and their ability to obtain the necessary fuel. Ms. Tierney asked if any ISOs/RTOs have begun to consider fuel availability for natural gas-fired generators in determinations of absolute capacity. Mr. Glaser responded that within PJM, fuel availability is implicitly considered because capacity calculations account for the history of forced outages for a generation unit, which include not being able to source the necessary commodity to run. He indicated that PJM is currently utilizing a new equation to help determine capacity for renewable resources, referred to as electric load carrying capability, and is evaluating expanding the use of this calculation to all generation resources.  Mr. Olenick commented that natural gas utilities, like electric generators, also must source natural gas during weekends and holidays, sometimes unexpectedly to meet critical peak demand needs. He stated that Southwest Gas Corporation helps to ensure its natural gas supply through the utilization of asset management agreements and firm contracts with natural gas suppliers. Mr. Gee agreed that the natural gas market does have products available to LDCs for “on-call” natural gas but noted that there have been comments that such products may not be as widely available to electric market participants. Mr. Glaser indicated that a number of generators within the PJM footprint do hold firm natural gas supply contracts but noted that even those with firm contracts will have an issue obtaining fuel if its natural gas producer issues a force majeure.  Mr. Soderman noted that procurement of natural gas is different during normal operating conditions than during critical weather events. He proposed discussion on if there is a mechanism that can be utilized during critical weather events to guaranty compensation for generators who obtain firm supplies of natural gas, regardless of if the generator utilizes the fuel. Mr. Wood asked if increased utilization of dual fuel capacity generators could help address natural gas supply issues during critical events. Mr. Soderman commented that several natural gas-fired generators within ISO-New England have dual fuel capabilities that have been utilized. Mr. Glaser stated that dual fuel could be one consideration but that there are operational issues, such as emissions, and implementation issues, like cost, that would need to be addressed. He explained that within PJM, the costs for obtaining firm fuel transportation are included in determining benchmark capacity pricing. Mr. Gee noted that it would be helpful to have information from natural gas pipelines and producers regarding any operational issues there were faced during Winter Storm Elliott.  Mr. Schoene stated that ConocoPhillips operates active intraday and weekend markets to help make available natural gas when needed but that natural gas supply is still dependent on a number of factors and varies by region, time of day, and asset availability. He explained that while anecdotal, ConocoPhillips did notice during Winter Storm Elliott, in comparison to Winter Storm Uri, an increase in the amount of LNG and industrial end use customers within Texas reselling capacity and fuel into the natural gas market. Mr. Schoene noted there are actions to improve day-to-day coordination activities, including changes to contracting practices and more robust natural gas storage, that can, in turn, serve to improve performance during extreme weather events and help meet electric generator ramping needs.  Mr. Brooks commented that there should be an evaluation of capacity markets and, if necessary, a redesign of the compensation mechanisms within these markets to ensure resources providing critical services, such as quick ramping, are being appropriately compensated.  Mr. Sharp noted that many natural gas utilities incorporate weather forecasts into determinations on how much fuel to procure and make advanced arrangements to obtain natural gas based on these determinations. He explained that natural gas pipelines impose overpull penalties for customers that exceed maximum withdraws.  Mr. Hughes stated within Southern Company’s operation, the majority of outages experienced during Winter Storm Elliott were likely attributable to wire issues caused by wind. He explained that during the storm, Southern Company experienced its highest peak load event and issued an EEA Level 2. Mr. Hughes indicated that despite moving into emergency operations, Southern Company was able to use a variety of mechanisms to ensure sufficient generation, including the use of peaking resources, steam resources, dual fuel resources, solar resources, demand side options, voltage reduction programs, and emergency energy purchases and sales. Mr. Wood asked how natural gas is procured for Southern Company natural gas-fired generators. Mr. Hughes responded that to be considered for reliability purposes, a natural gas-fired generator is required to obtain firm fuel. He indicated that Winter Storm Elliott caused a relatively quick, significant drop in temperatures that may have been unanticipated by many market participants but that better forecasting practices could led to better planning, especially for events that occur over a holiday weekend, such as Winter Storm Elliott.  Mr. Gee observed that based on the information provided by PJM in its presentation, its market experienced sustained high nighttime loads during Winter Storm Elliott that impacted operations, particularly of pumped storage resources. He noted the move towards electrification for transportation and heating may mean that similar sustained loads could be experienced in the future and will likely impact system planning projections regarding load shape. Mr. Peress stated that future system planning and forecasting will also need to better account for additional market changes as well, explaining that the rise in extreme weather events, coupled with a greater reliance on variable and renewable capacity resources and the rise in electrification, all impact gas-electric coordination and reliability. He suggested that it may be beneficial to have a specific discussion regarding the impact of decarbonization, electrification, and renewable resource deployment on gas-electric coordination issues. Mr. Gee responded that measures to improve gas-electric coordination need to be forward looking and account for system and operational realities both now and in the near future. He noted that it may also be worthwhile to consider any impact the potential growth in LNG exports will have and any resulting infrastructure needs that may be necessary to ensure continued reliability of the electric grid. Mr. Desselle stated that consideration may also need to be given to the use of hydrogen, as this may also have an impact on transportation infrastructure. |
| **Next Steps & Other Business** | Mr. Booe stated that the next meeting of the NAESB GEH Forum will be held on February 2, 2022. He indicated that an agenda for this meeting will be distributed shortly. |
| **Adjourn:** | The meeting was adjourned at 11:56 AM Central. |
| **Work Papers Provided for the Meeting:** | **Meeting Related Documents:**   * Announcement: <https://naesb.org/pdf4/geh011223a.docx> * Agenda: <https://naesb.org/pdf4/geh011223ra.docx> * Antitrust Guidance and Other Meeting Policies: <http://www.naesb.org/misc/antitrust_guidance.doc>   **Meeting Materials**   * GEH Forum Work Paper: <https://naesb.org/pdf4/geh011223w1.pdf> * PJM Presentation re: Winter Storm Elliott: <https://naesb.org/pdf4/geh011223a1.pdf> |
| **Attendees:** | Please see the posted participant attendance record:<https://naesb.org/pdf4/geh011223a3.docx> |