**Gas Electric Harmonization Forum Survey Results**

**Comment Submissions**

**February 27, 2023**

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| **1.** | **Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies** | | | | | | |
|  | 1.a | Whether and how natural gas information could be aggregated on a regional basis for sharing with Bulk Electric System operators in preparation for and during events in which demand is expected to rise sharply for both electricity and natural gas, including whether creation of a voluntary natural gas coordinator would be feasible | | | | | |
|  |  | *Recommendation 1* | *Consider the creation of an industry tool that can disseminate aggregated information regarding the operational status of natural gas pipelines, either at a regional or national level.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | S | 5 | Recommendations 1, 3, 6, 7 and 8 among others, could be rolled into one recommendation about consolidation of and access to (or dissemination of) pipeline operational information. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 4 | Actions:  1: NAESB develop standards and datasets for the information to be exchanged.  2: Industry participants either develop commercial solutions or group together to develop solutions relevant to their groups’ business interest. 3: Information available should be able to be subscribed to by any interested party.  Discussion: All referenced recommendations call for development of one or more commercial applications where industry participants can provide information for analysis of gas and power performance and availability as well as utilize the available data for access to analytics. This digitalization of a large quantity of data would provide insight into the market place, by participant role, that is requested in this list of recommendations. This commercial application should be a venture sponsored and developed by industry participants or independent software providers and available on a subscription or per-use basis.  NAESB’s responsibility in this would be to identify the data needed, the timing upon which it is provided, and the datasets for the information to be provided. NAESB would also develop related standards on data timing, quality, etc, as NAESB has done so well in other circumstances. Additionally the NAESB EDM subcommittee would evaluate any efficiencies and improvements to be used in exchange of this information.  The data provided by participants should be available to anyone (including commercial applications) who wants to subscribe to such data such as the Interstate Pipeline’s provision of system wide notices and capacity release today. (I believe publicly available, not sure). NAESB should not be the aggregator and distributor of this data. For NAESB to do this would discourage commercial development of analytic tools based on the data and would be a liability for NAESB in a whole new business channel.  The decision to require the data and the timeline for the data to be provided is up to the regulatory body governing that industry participant. |
| Paul Hughes | | | Southern Company | WEQ Generator | S | 4 | The aggregation of data as described in recommendation #1 may not provide significant value. In contrast, having one source of information instead of multiple Electronic Bulletin Boards (EBBs) which provide more detailed data in a standardized format for multiple pipelines would provide some value, particularly if the data was provided close to “real-time.” Timeliness, quality, and depth of information should be prioritized over simple aggregation. Notably, the EBBs used by gas pipelines have improved significantly over the years and have been very effective in sharing much of the information highlighted in recommendation #2. Increased standardization of the EBBs combined with providing more detailed and timely information such as lead times, and hours of availability may add value for users who interface with multiple pipelines, particularly during extreme events. Notably, SCS utilizes a vendor-provided tool which pulls in data from multiple pipelines and storage facilities that is used for gas-scheduling purposes. Similar tools to accomplish the recommendation may already exist in the market. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S | 5 | Not sure I have in mind what this tool would look like but sort of envision something that is standardized across pipelines and maybe it shows the day’s working capacity, working line pack, expected receipts versus deliveries and any operational or maintenance issues reducing that working capacity below nominal capacity? |
| Andrea Chambers | | | Process Gas Consumers Group | WGQ End User | S | 1 | AF&PA and PGC support increased information sharing provided that the information is not used to reallocate or curtail deliveries of their firm gas supply and firm transportation services, which they contracted for, and paid for, in order to ensure the reliable delivery of natural gas on a firm basis during peak periods where demand for natural gas is high and supply is low, especially during extreme cold weather events. Any information sharing should also include end users of natural gas. FERC is the appropriate entity that should require additional information sharing regarding capacity release and standardizing postings to facilitate secondary transactions because FERC has authority over pipeline capacity. FERC should also set deadlines that can be achieved as soon as possible and require information-sharing measures that are cost-effective. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | O |  | Regarding all 10 information sharing recommendations, EPSA supports sufficient information sharing practices and protocols. Of note, several recommendations exist as subscription services, others are premised on assumptions that may not be correct or precise and thus requirements should not be considered. Rather, ISOs/RTOs should work with stakeholders to evaluate and improve communication protocols and practices as needed to ensure reliability. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 8 | Aggregated data would have minimal value. Winter Storm Elliott highlighted the need for more granular data. |

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|  |  | *Recommendation 2* | *Consider the development of additional coordination and information sharing practices, specifically for use during critical events - These could include greater information sharing between ISOs/RTOs and natural gas pipelines regarding the condition of system operations as well as expanding coordination practices to cover information sharing with additional market participants, such as LDCs and generators, to provide enhanced details during critical events regarding natural gas supply, pricing, and natural gas pipeline capacity.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | O |  | NGSA supports ongoing discussions to determine whether there is some ability to provide anonymized aggregated information that is limited to public and non-proprietary information. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 4 | Action:  1. NAESB develop standard datasets, standards for required exchange of information and any EDM requirements for how the data is exchanged.   Discussion: NAESB should set standards for the information that should be made available and should establish formats for the exchange of that information. Action:  1. NAESB develop standard datasets, standards for required exchange of information and any EDM requirements for how the data is exchanged.   Discussion: I do not have an opinion on whether this information should be provided. However, if this group determines that the information should be provided, then NAESB should set the standards as described in Comment A. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | S |  | believe this is already happening. |
| Matthew Agen | | | American Gas Association | WGQ Distributor |  |  | AGA supports transparency requirements within the survey, including additional posting requirements during critical events. The concern is what is meant by LDCs sharing information as this raises state and federal jurisdictional issues. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S | 2 | This needs to emphasize access by generators and LDCs and not just be an exercise between RTOs and pipelines, which already engage in coordinating discussions. The price element is important, too and the goal should be to get information to those that are looking for supply or capacity to keep the lights on. I would structure it to be more of a facilitator, activated during an emergency, that can provide information that helps connect parties to find gas supply. But I also see this as feasible under recommendation 5: a third-party facilitator |
| Michele Richmond | | | Texas Competitive Power Advocates (TCPA) | WEQ Generator | S | 1 | TCPA believes that the reliability of electric and natural gas industries can be improved with better coordination and information sharing practices between ISOs/RTOs, electric generators and natural gas pipelines and storage operators regarding the condition of system operations. While a great deal of information is already posted by interstate natural gas pipelines on their electronic bulletin boards, Texas intrastate pipelines as well as other intrastate gas systems, lack the same transparency with regards to pipeline operational status, actual flow data, and information regarding the market participants on their pipeline systems. Transparency is the cornerstone of any well-functioning competitive marketplace. Requirements for intrastate pipeline and storage operators to post the same or substantively similar information as interstate pipelines do on their electronic bulletin boards would help ISOs/RTOs ensure electric reliability and electric generators better adjust their fuel supply strategies during critical weather events. Since many of the intrastate pipelines also operate interstate pipelines, they already have the knowledge and systems capability to post such information such that it would not be an insurmountable burden to implement such a requirement. |
| Andrea Chambers | | | Process Gas Consumers Group | WGQ End User | S | 2 | AF&PA and PGC support increased information sharing provided that the information is not used to reallocate or curtail deliveries of their firm gas supply and firm transportation services, which they contracted for, and paid for, in order to ensure the reliable delivery of natural gas on a firm basis during peak periods where demand for natural gas is high and supply is low, especially during extreme cold weather events. Any information sharing should also include end users of natural gas. FERC is the appropriate entity that should require additional information sharing regarding capacity release and standardizing postings to facilitate secondary transactions because FERC has authority over pipeline capacity. FERC should also set deadlines that can be achieved as soon as possible and require information-sharing measures that are cost-effective. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 2 | There have been significant work on communication between RTOs and pipelines but more could be done as to real time communications between RTOs and LDCs with gas generation behind the city gate as well as communication with the production community should there be significant shortfalls in commodity as we saw during Winter Storm Elliott. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S |  | While the question focuses on what and how natural gas information could be shared with BES operators in preparation and during expected high demand events, APGA is concerned that such an approach is short-sighted. Instead, NAESB should be viewing these recommendations through the lens that all market participants, including public gas utilities, would have access to the information sharing. Consistent access to information by all will help ensure efficiencies in the energy delivery system, both electric and gas. |

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|  |  | *Recommendation 3* | *Consider the development of best practices for ISOs/RTOs regarding the aggregation of information from EBBs operated by natural gas pipelines and the dissemination of such information to market participants.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 4 | Actions:  1: NAESB develop standards and datasets for the information to be exchanged.  2: Industry participants either develop commercial solutions or group together to develop solutions relevant to their groups’ business interest. 3: Information available should be able to be subscribed to by any interested party.  Discussion: All referenced recommendations call for development of one or more commercial applications where industry participants can provide information for analysis of gas and power performance and availability as well as utilize the available data for access to analytics. This digitalization of a large quantity of data would provide insight into the market place, by participant role, that is requested in this list of recommendations. This commercial application should be a venture sponsored and developed by industry participants or independent software providers and available on a subscription or per-use basis.  NAESB’s responsibility in this would be to identify the data needed, the timing upon which it is provided, and the datasets for the information to be provided. NAESB would also develop related standards on data timing, quality, etc, as NAESB has done so well in other circumstances. Additionally the NAESB EDM subcommittee would evaluate any efficiencies and improvements to be used in exchange of this information.  The data provided by participants should be available to anyone (including commercial applications) who wants to subscribe to such data such as the Interstate Pipeline’s provision of system wide notices and capacity release today. (I believe publicly available, not sure). NAESB should not be the aggregator and distributor of this data. For NAESB to do this would discourage commercial development of analytic tools based on the data and would be a liability for NAESB in a whole new business channel.  The decision to require the data and the timeline for the data to be provided is up to the regulatory body governing that industry participant. |
| Gene Nowak | | | Kinder Morgan | WGQ Pipeline | S | 3 | Commenters support this recommendation and offers that the aggregated pipeline EBB information should be made available by each ISO/RTO applicable to its service area and market participants and could include applicable: • Critical Notice information • Planned Service Outages • Available Capacity • Unsubscribed Capacity This is only the aggregation of information provided according to NAESB standards and could be added to NAESB’s Annual Plan for the WEQ Quadrant and prioritized as appropriate. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Do not believe this is needed |
| Rachel Hogge | | | BHE GT&S |  | S | 3 | INGAA supports consideration of ways to aggregate and disseminate the extensive amount of information currently available from EBBs operated by natural gas pipelines. Because pipelines already post substantial volume of information, INGAA does not support an expansion of EBB posting requirements. An expansion would impose additional burdens on natural gas customers without materially improving electric reliability. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S | 7 | Don’t oppose but not sure what it achieves |
| Andrea Chambers | | | Process Gas Consumers Group | WGQ End User | S | 3 | AF&PA and PGC support increased information sharing provided that the information is not used to reallocate or curtail deliveries of their firm gas supply and firm transportation services, which they contracted for, and paid for, in order to ensure the reliable delivery of natural gas on a firm basis during peak periods where demand for natural gas is high and supply is low, especially during extreme cold weather events. Any information sharing should also include end users of natural gas. FERC is the appropriate entity that should require additional information sharing regarding capacity release and standardizing postings to facilitate secondary transactions because FERC has authority over pipeline capacity. FERC should also set deadlines that can be achieved as soon as possible and require information-sharing measures that are cost-effective. |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | O |  | Currently done through ISO RTO Council Task Force |
| Christopher Smith | | | INGAA | WGQ Pipeline | S | 3 | INGAA supports consideration of ways to aggregate and disseminate the extensive amount of information currently available from EBBs operated by natural gas pipelines. Because pipelines already post substantial volume of information, INGAA does not support an expansion of EBB posting requirements. An expansion would impose additional burdens on natural gas customers without materially improving electric reliability. |
| Kim Van Pelt | | | Boardwalk | WGQ Pipeline | S | 3 | INGAA supports consideration of ways to aggregate and disseminate the extensive amount of information currently available from EBBs operated by natural gas pipelines. Because pipelines already post substantial volume of information, INGAA does not support an expansion of EBB posting requirements. An expansion would impose additional burdens on natural gas customers without materially improving electric reliability. |
| Steven McCord | | | TC Energy Corporation | WGQ Pipeline | S | 3 | INGAA supports consideration of ways to aggregate and disseminate the extensive amount of information currently available from EBBs operated by natural gas pipelines. Because pipelines already post substantial volume of information, INGAA does not support an expansion of EBB posting requirements. An expansion would impose additional burdens on natural gas customers without materially improving electric reliability. |
| Christopher Burden | | | Enbridge | WGQ Pipeline | S | 3 | INGAA supports consideration of ways to aggregate and disseminate the extensive amount of information currently available from EBBs operated by natural gas pipelines. Because pipelines already post substantial volume of information, INGAA does not support an expansion of EBB posting requirements. An expansion would impose additional burdens on natural gas customers without materially improving electric reliability. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 9 | Exchanges of best practices already occur among RTOs thru the ISO/RTO Council. |

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|  |  | *Recommendation 4* | *Consider providing regional operators with additional information regarding the types of contracts under which natural-gas fired generators, within its footprint, procure natural gas through the expansion of requirements under the NERC Reliability Standards as identified in Recommendations 1.g and 8 of the Winter 2021 Report.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 4 | Actions:  1: NAESB develop standards and datasets for the information to be exchanged.  2: Industry participants either develop commercial solutions or group together to develop solutions relevant to their groups’ business interest. 3: Information available should be able to be subscribed to by any interested party.  Discussion: All referenced recommendations call for development of one or more commercial applications where industry participants can provide information for analysis of gas and power performance and availability as well as utilize the available data for access to analytics. This digitalization of a large quantity of data would provide insight into the market place, by participant role, that is requested in this list of recommendations. This commercial application should be a venture sponsored and developed by industry participants or independent software providers and available on a subscription or per-use basis.  NAESB’s responsibility in this would be to identify the data needed, the timing upon which it is provided, and the datasets for the information to be provided. NAESB would also develop related standards on data timing, quality, etc, as NAESB has done so well in other circumstances. Additionally the NAESB EDM subcommittee would evaluate any efficiencies and improvements to be used in exchange of this information.  The data provided by participants should be available to anyone (including commercial applications) who wants to subscribe to such data such as the Interstate Pipeline’s provision of system wide notices and capacity release today. (I believe publicly available, not sure). NAESB should not be the aggregator and distributor of this data. For NAESB to do this would discourage commercial development of analytic tools based on the data and would be a liability for NAESB in a whole new business channel.  The decision to require the data and the timeline for the data to be provided is up to the regulatory body governing that industry participant. |
| Paul Hughes | | | Southern Company | WEQ Generator | S | 2 | Because of the policies employed by the Southern Company system, the Southern Balancing Authority is aware of which generating facilities have firm gas supply. As a matter of policy, all capacity recognized for resource adequacy must meet specific firm fuel requirements, including Firm Transportation (FT) for natural gas units. In other words, all members of the Southern Company Power Pool must have enough FT to meet the load plus reserve margin requirements. To be clear, these policy requirements do not eliminate all risks incurred in serving our customers but requiring firm fuel supply does enhance reliability significantly and, in our view, properly recognizes the role of the customer as the ultimate stakeholder. |
| Gene Nowak | | | Kinder Morgan | WGQ Pipeline | S | 2 | Commenters support this recommendation and offers that the aggregated pipeline EBB information should be made available by each ISO/RTO applicable to its service area and market participants and could include applicable: • Critical Notice information • Planned Service Outages • Available Capacity • Unsubscribed Capacity This is only the aggregation of information provided according to NAESB standards and could be added to NAESB’s Annual Plan for the WEQ Quadrant and prioritized as appropriate. |
| Rachel Hogge | | | BHE GT&S | WGQ Pipeline | S | 2 | INGAA supports consideration of information sharing between natural gas-fired generators and regional operators but clarifies that interstate natural gas pipelines do not have a complete understanding of natural gas-fired generators’ contracting arrangements (e.g., pipelines do not know if a generator executed a contract with a marketing manager). |
| Catherine Elder | | | Aspen Environmental Group | Observer | S | 3 | We’re talking electricity system operators? It should be possible to create a form where generators check various boxes that generally describe the types of supply and transport each hold. Now what does the operator do with that information? I guess it can then add up what of its resources it can count on during extreme conditions? |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | S | 8 | Simple tiers are needed to allow consistency across regions and the country. This does not require creating new gas services, but categorizing existing products into a common definition at NAESB |
| Christopher Smith | | | INGAA | WGQ Pipeline | S | 2 | INGAA supports consideration of information sharing between natural gas-fired generators and regional operators but clarifies that interstate natural gas pipelines do not have a complete understanding of natural gas-fired generators’ contracting arrangements (e.g., pipelines do not know if a generator executed a contract with a marketing manager). |
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| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 6 | Although the primary contracting responsibility remains with the generators, Winter Storm Elliott underscores the value of addition transparency of generator arrangements so the RTO can make better dispatch and planning decisions. |

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|  |  | *Recommendation 5* | *Consider using third parties (for example, the Texas Energy Reliability Council) to bring together important critical sectors during extreme events in order to facilitate collaboration and coordination at a regional level, better informing decision making between critical sector participants.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | S | 6 | This entity’s actions should be limited to bringing parties together to coordinate but they should not have the authority to allocate and direct actions. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 4 | Actions:  1: NAESB develop standards and datasets for the information to be exchanged.  2: Industry participants either develop commercial solutions or group together to develop solutions relevant to their groups’ business interest. 3: Information available should be able to be subscribed to by any interested party.  Discussion: All referenced recommendations call for development of one or more commercial applications where industry participants can provide information for analysis of gas and power performance and availability as well as utilize the available data for access to analytics. This digitalization of a large quantity of data would provide insight into the market place, by participant role, that is requested in this list of recommendations. This commercial application should be a venture sponsored and developed by industry participants or independent software providers and available on a subscription or per-use basis.  NAESB’s responsibility in this would be to identify the data needed, the timing upon which it is provided, and the datasets for the information to be provided. NAESB would also develop related standards on data timing, quality, etc, as NAESB has done so well in other circumstances. Additionally the NAESB EDM subcommittee would evaluate any efficiencies and improvements to be used in exchange of this information.  The data provided by participants should be available to anyone (including commercial applications) who wants to subscribe to such data such as the Interstate Pipeline’s provision of system wide notices and capacity release today. (I believe publicly available, not sure). NAESB should not be the aggregator and distributor of this data. For NAESB to do this would discourage commercial development of analytic tools based on the data and would be a liability for NAESB in a whole new business channel.  The decision to require the data and the timeline for the data to be provided is up to the regulatory body governing that industry participant. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | This could result in unfair market practices and the benefits could come at the cost of non-collaborators. Moreover, is this something the ISO/RTOs can do. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S | 1 | See comment on item 2 |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S | 6 | Must include natural gas end users |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | O |  | Rather than add levels of complexity to an emergency, efforts to strengthen communication by affected parties should be the focus. If there is a role for a third party, it would be prior to an event and not during. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | The key communications and collaboration need to be between those with front line responsibilities. Existing pipeline/RTO protocols are in place so adding a third party to ‘bring together’ these players has minimal value. |
| Christopher Wentlent | | | New York State Reliability Council | WEQ Distributor/Load Serving Entity |  |  | **The Issue**  The extent to which the NYSRC can or should be involved in bringing together important critical sectors during extreme events in order to facilitate collaboration and coordination at a regional level, better informing decision making between critical sector participants.  **Discussion**  The NYSRC has a specific role to play in the exercise of its authority over the NYISO. It has no direct authority over New York’s gas industry. It does not set energy policy for either the gas or electric industries. It is not involved in secondary capacity release markets, gas market scheduling, electric and gas marketing design, cost recovery, fuel purchasing, or prioritization of service. It is not a broker between the gas and electric industries.  **The authority and responsibilities of the NYSRC are specifically to:**  Establish NYSRC Reliability Rules consistent with North American Reliability Council (NERC) and Northeast Power Coordinating Council (NPCC) standards. The NYSRC Reliability Rules are consistent with, and sometimes more stringent or specific than, NERC and NPCC standards. The NYSRC Reliability Rules are binding on the NYISO and all participants in the NYISO’s wholesale electricity market.  **Responsibilities**  • Monitor and assess NYISO conformance with NYSRC Reliability Rules  • Establish statewide installed capacity requirements.  • Assess New York State electric system resource and transmission system adequacy.  **Findings**  In view of the specific responsibilities of the NYSRC in its relationship to the NYISO, and due its lack of any direct authority over New York’s gas industry, the NYSRC finds that:  • It is not within its charter to bring together important critical sectors during extreme events in order to facilitate collaboration and coordination at a regional or state level, as identified in Recommendation 5 of the NAESB Gas-Electric Harmonization Forum;  • As with any policy decision issued by an authorized agency, findings of the NAESB Gas-Electric Harmonization Forum which affect the NYISO, and its market participants will be reviewed and addressed by the NYSRC pursuant to its rulemaking practices, and;  • We have reviewed the responses submitted by the NYISO and have found none that appear contrary to their existing operating practices. Accordingly, we support their position. |

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| **1.** | **Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies** | | | | | | |
|  | 1.a | Whether and how natural gas information could be aggregated on a regional basis for sharing with Bulk Electric System operators in preparation for and during events in which demand is expected to rise sharply for both electricity and natural gas, including whether creation of a voluntary natural gas coordinator would be feasible | | | | | |
|  |  | *Recommendation 6* | *Consider developing a singular portal by which parties can access all critical notices issued by any natural gas pipeline.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | NA |  | This survey includes a multitude of requests for pipeline reporting and information that must be rationalized with more understanding of what is already available and cost/benefit analysis. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | O | 4 | Actions:  1: NAESB develop standards and datasets for the information to be exchanged.  2: Industry participants either develop commercial solutions or group together to develop solutions relevant to their groups’ business interest. 3: Information available should be able to be subscribed to by any interested party.  Discussion: All referenced recommendations call for development of one or more commercial applications where industry participants can provide information for analysis of gas and power performance and availability as well as utilize the available data for access to analytics. This digitalization of a large quantity of data would provide insight into the market place, by participant role, that is requested in this list of recommendations. This commercial application should be a venture sponsored and developed by industry participants or independent software providers and available on a subscription or per-use basis.  NAESB’s responsibility in this would be to identify the data needed, the timing upon which it is provided, and the datasets for the information to be provided. NAESB would also develop related standards on data timing, quality, etc, as NAESB has done so well in other circumstances. Additionally the NAESB EDM subcommittee would evaluate any efficiencies and improvements to be used in exchange of this information.  The data provided by participants should be available to anyone (including commercial applications) who wants to subscribe to such data such as the Interstate Pipeline’s provision of system wide notices and capacity release today. (I believe publicly available, not sure). NAESB should not be the aggregator and distributor of this data. For NAESB to do this would discourage commercial development of analytic tools based on the data and would be a liability for NAESB in a whole new business channel.  The decision to require the data and the timeline for the data to be provided is up to the regulatory body governing that industry participant.  1: NAESB develop standards and datasets for the information to be exchanged.  2: Industry participants either develop commercial solutions or group together to develop solutions relevant to their groups’ business interest. 3: Information available should be able to be subscribed to by any interested party.  Discussion: There should not be a singular portal for this information. Multiple portals should be developed with the focus of information on their specific customer base. NAESB should set the standards for provision of information, timing of information and data formats as described in Comment A. |
| Paul Hughes | | | Southern Company | WEQ Generator | S | 3 | As noted in recommendation #1, a single portal in which parties can access critical notices and other timely, useful, detailed information has some value. As previously noted, timeliness, data quality, and depth of information should be prioritized as posting information after the market has traded provides little value. Notably, SCS already utilizes a tool that pulls in gas-scheduling related data from multiple EBBs for use in its daily processes, so some products may already exist in the market. |
| Rachel A. Hogge | | | BHE GT&S | WGQ Pipeline | S | 4 | INGAA supports consideration of ways to aggregate and disseminate the extensive amount of information currently in critical notices. Because the aim of the singular portal is to improve electric reliability, electric customers ultimately must bear the cost of developing and maintaining the portal. Further, pipelines already convey a substantial volume of information through critical notices, so INGAA does not support an expansion of critical notice posting requirements. An expansion would impose additional burdens on natural gas customers without materially improving electric reliability. |
| Matthew Agen | | | American Gas Association | WGQ Distributor |  |  | LDCs could possibly support this recommendation depending on the requirements of the stakeholders. If it’s done it should include filter capabilities. The concern is who would maintain and pay for a standardized portal for critical notices for all pipelines. It is not needed by the gas industry. Stakeholders can already subscribe to critical emails from any pipeline. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S | 4 | This could be combined as part of item 1. That same portal could include the information in item 7 and add detail to what gas facilities post so they are not so vague. |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | S | 5 | Consider requiring these postings be provided to a standardized portal for industry access. |
| Christopher Smith | | | INGAA | WGQ Pipeline | S | 4 | INGAA supports consideration of ways to aggregate and disseminate the extensive amount of information currently in critical notices. Because the aim of the singular portal is to improve electric reliability, electric customers ultimately must bear the cost of developing and maintaining the portal. Further, pipelines already convey a substantial volume of information through critical notices, so INGAA does not support an expansion of critical notice posting requirements. An expansion would impose additional burdens on natural gas customers without materially improving electric reliability. |
| Kim Van Pelt | | | Boardwalk | WGQ Pipeline | S | 4 | INGAA supports consideration of ways to aggregate and disseminate the extensive amount of information currently in critical notices. Because the aim of the singular portal is to improve electric reliability, electric customers ultimately must bear the cost of developing and maintaining the portal. Further, pipelines already convey a substantial volume of information through critical notices, so INGAA does not support an expansion of critical notice posting requirements. An expansion would impose additional burdens on natural gas customers without materially improving electric reliability. |
| Steven McCord | | | TC Energy Corporation | WGQ Pipeline | S | 4 | INGAA supports consideration of ways to aggregate and disseminate the extensive amount of information currently in critical notices. Because the aim of the singular portal is to improve electric reliability, electric customers ultimately must bear the cost of developing and maintaining the portal. Further, pipelines already convey a substantial volume of information through critical notices, so INGAA does not support an expansion of critical notice posting requirements. An expansion would impose additional burdens on natural gas customers without materially improving electric reliability. |
| Christopher Burden | | | Enbridge | WGQ Pipeline | S | 4 | INGAA supports consideration of ways to aggregate and disseminate the extensive amount of information currently in critical notices. Because the aim of the singular portal is to improve electric reliability, electric customers ultimately must bear the cost of developing and maintaining the portal. Further, pipelines already convey a substantial volume of information through critical notices, so INGAA does not support an expansion of critical notice posting requirements. An expansion would impose additional burdens on natural gas customers without materially improving electric reliability. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | Given the number of pipelines in the US, developing a ‘singular portal’ and ensuring its moment by moment accuracy may not be the most critical need at this time. PJM has developed its own tool which consolidates all critical pipeline notices: https://gaspipe.pjm.com/gaspipe/pages/dashboard.jsf |

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| **1.** | **Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies** | | | | | | |
|  | 1.a | Whether and how natural gas information could be aggregated on a regional basis for sharing with Bulk Electric System operators in preparation for and during events in which demand is expected to rise sharply for both electricity and natural gas, including whether creation of a voluntary natural gas coordinator would be feasible | | | | | |
|  |  | *Recommendation 7* | *Consider developing additional posting requirements, to be used during critical events, for natural gas facility operators regarding operational issues that are encountered.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | O |  | Production data is proprietary sensitive competitive data that cannot be divulged. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 4 | Actions:  1: NAESB develop standards and datasets for the information to be exchanged.  2: Industry participants either develop commercial solutions or group together to develop solutions relevant to their groups’ business interest. 3: Information available should be able to be subscribed to by any interested party.  Discussion: All referenced recommendations call for development of one or more commercial applications where industry participants can provide information for analysis of gas and power performance and availability as well as utilize the available data for access to analytics. This digitalization of a large quantity of data would provide insight into the market place, by participant role, that is requested in this list of recommendations. This commercial application should be a venture sponsored and developed by industry participants or independent software providers and available on a subscription or per-use basis.  NAESB’s responsibility in this would be to identify the data needed, the timing upon which it is provided, and the datasets for the information to be provided. NAESB would also develop related standards on data timing, quality, etc, as NAESB has done so well in other circumstances. Additionally the NAESB EDM subcommittee would evaluate any efficiencies and improvements to be used in exchange of this information.  The data provided by participants should be available to anyone (including commercial applications) who wants to subscribe to such data such as the Interstate Pipeline’s provision of system wide notices and capacity release today. (I believe publicly available, not sure). NAESB should not be the aggregator and distributor of this data. For NAESB to do this would discourage commercial development of analytic tools based on the data and would be a liability for NAESB in a whole new business channel.  The decision to require the data and the timeline for the data to be provided is up to the regulatory body governing that industry participant. |
| Paul Hughes | | | Southern Company | WEQ Generator | S | 1 | Posting requirements should apply during all times as non-weather critical events may occur on the system. However, to be effective, timeliness must be prioritized as posting information after the market has already traded provides little value during extreme weather events. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | S |  | Support but not clear why this would be limited to emergencies. |
| Matthew Agen | | | American Gas Association | WGQ Distributor |  |  | If this is done, pipeline reporting requirements could be expanded to capture limitations at the point of receipt (i.e., producer issues). |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | S | 1 | Gaps were identified in the current posting requirements including details for location data and improved consistency in the approach. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 4 | Additional posting of information during critical events as well as anticipated conditions would be helpful particularly given the unforeseen and unprecedented loss of gas supply that we saw during Winter Storm Elliott. |

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|  |  | *Recommendation 8* | *Consider developing a mapping tool for interstate natural gas pipelines that provides, in real-time, regional information related to Operational Flow Orders, ratable take requirements, and force majeure.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 4 | Actions:  1: NAESB develop standards and datasets for the information to be exchanged.  2: Industry participants either develop commercial solutions or group together to develop solutions relevant to their groups’ business interest. 3: Information available should be able to be subscribed to by any interested party.  Discussion: All referenced recommendations call for development of one or more commercial applications where industry participants can provide information for analysis of gas and power performance and availability as well as utilize the available data for access to analytics. This digitalization of a large quantity of data would provide insight into the market place, by participant role, that is requested in this list of recommendations. This commercial application should be a venture sponsored and developed by industry participants or independent software providers and available on a subscription or per-use basis.  NAESB’s responsibility in this would be to identify the data needed, the timing upon which it is provided, and the datasets for the information to be provided. NAESB would also develop related standards on data timing, quality, etc, as NAESB has done so well in other circumstances. Additionally the NAESB EDM subcommittee would evaluate any efficiencies and improvements to be used in exchange of this information.  The data provided by participants should be available to anyone (including commercial applications) who wants to subscribe to such data such as the Interstate Pipeline’s provision of system wide notices and capacity release today. (I believe publicly available, not sure). NAESB should not be the aggregator and distributor of this data. For NAESB to do this would discourage commercial development of analytic tools based on the data and would be a liability for NAESB in a whole new business channel.  The decision to require the data and the timeline for the data to be provided is up to the regulatory body governing that industry participant. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Do not support as a recommendation from this forum, but could be a private sector opportunity. In fact, we know of at least one entity compiling and marketing OFO information. |
| Matthew Agen | | | American Gas Association | WGQ Distributor |  |  | The concern is who would pay for and maintain this. The LDC’s operating on those pipelines do not need it. LDCs use the information the pipelines already provide. |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | S | 1 | This would be in support of the efforts for additional posting requirements in #7. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 3 | RTOs already review individual pipeline information both thru direct communications as well as reviewing postings. A mapping tool would be very helpful but may not be the most mission critical step at this time. |

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|  |  | *Recommendation 9* | *Consider the development of a computer model of the gas-electric system to simulate scenarios that will inform any operational decision making.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 4 | Actions:  1: NAESB develop standards and datasets for the information to be exchanged.  2: Industry participants either develop commercial solutions or group together to develop solutions relevant to their groups’ business interest. 3: Information available should be able to be subscribed to by any interested party.  Discussion: All referenced recommendations call for development of one or more commercial applications where industry participants can provide information for analysis of gas and power performance and availability as well as utilize the available data for access to analytics. This digitalization of a large quantity of data would provide insight into the market place, by participant role, that is requested in this list of recommendations. This commercial application should be a venture sponsored and developed by industry participants or independent software providers and available on a subscription or per-use basis.  NAESB’s responsibility in this would be to identify the data needed, the timing upon which it is provided, and the datasets for the information to be provided. NAESB would also develop related standards on data timing, quality, etc, as NAESB has done so well in other circumstances. Additionally the NAESB EDM subcommittee would evaluate any efficiencies and improvements to be used in exchange of this information.  The data provided by participants should be available to anyone (including commercial applications) who wants to subscribe to such data such as the Interstate Pipeline’s provision of system wide notices and capacity release today. (I believe publicly available, not sure). NAESB should not be the aggregator and distributor of this data. For NAESB to do this would discourage commercial development of analytic tools based on the data and would be a liability for NAESB in a whole new business channel.  The decision to require the data and the timeline for the data to be provided is up to the regulatory body governing that industry participant. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Although we do not oppose the creation of a computer model. We remain doubtful of the effectiveness of an additional model attempting to predict specific future scenarios. Instead, we believe focusing on recommendations that increase response capabilities for unplanned events will be more beneficial. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Existing business practices and models already support this capability, though perhaps not in an inter-industry basis. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S | 10 | Doesn't seem so critical. It isn’t clear to me that operational constraints are severe enough or overlapping enough that a model would be helpful relative to what I can solve in my head. I think generators know the produces and services available in their area; the question is cost recovery. I have noticed that generators in vertically-integrated utilities outside an RTO tend to buy more expensive and secure services (like EPNG’s hourly no-notice service, for example) while merchant generators bidding into an RTO marginal-cost market buy daily spot and interruptible transportation – primarily because of the cost recovery. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 7 | This will need further discussion. Pipeline forecasts and simulations of expected conditions could be helpful to RTO planning. Efforts to develop similar models in the past have not produced value. |

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|  |  | *Recommendation 10* | | *Consider a review of existing natural gas market products and services to assist natural gas-fired generators in fuel procurement.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | | WGQ Producer | S | 1 | Before looking at the need to develop new services, it is important to first look at whether existing market products are readily available to meet generator requirements, such as AMAs, risk management; hedging, no-notice, and storage services. |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | O | 4 | No Action Discussion: Marketers develop market products and services based on demands of their suppliers and markets and utilizing existing pipeline service offerings. This is an existing practice and is part of the relationship between the marketer and the customer. These are proprietary offerings and offer competitive advantage to that marketer. |
| Paul Hughes | | | Southern Company | | WEQ Generator | O |  | Awareness of existing natural gas products and services is a prudent responsibility of any gas generator. We suspect most natural gas generators are aware of the products and services that are available for their use and are doubtful such efforts will provide meaningful impact. |
| Gene Nowak | | | Kinder Morgan | | WGQ Pipeline | S | 1 | Commenters support this recommendation and offers that the aggregated pipeline EBB information should be made available by each ISO/RTO applicable to its service area and market participants and could include applicable: • Critical Notice information • Planned Service Outages • Available Capacity • Unsubscribed Capacity This is only the aggregation of information provided according to NAESB standards and could be added to NAESB’s Annual Plan for the WEQ Quadrant and prioritized as appropriate. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | Do not support, except to the extent that winterization force majeure provisions should be eliminated from natural gas supply contracts, performance of gas suppliers during cold weather should be posted, and ratable takes over weekends/holidays should be prohibited. |
| Rachel A. Hogge | | | BHE GT&S | | WGQ Pipeline | S | 1 | INGAA supports a survey of existing natural gas market products and services currently available through pipelines, marketing managers, or other entities. The survey will inform discussions about whether new products and services are needed before participants in the GEH Forum discuss what new products and services might look like. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S | 9 | Doesn't seem so critical. It isn’t clear to me that operational constraints are severe enough or overlapping enough that a model would be helpful relative to what I can solve in my head. I think generators know the produces and services available in their area; the question is cost recovery. I have noticed that generators in vertically-integrated utilities outside an RTO tend to buy more expensive and secure services (like EPNG’s hourly no-notice service, for example) while merchant generators bidding into an RTO marginal-cost market buy daily spot and interruptible transportation – primarily because of the cost recovery. |
| Joshua Phillips | | | Southwest Power Pool | | WEQ Independent Grid Operator & Planner | S | 5 | This could be done through standardizing common gas service tiers through NAESB. It would not alter existing products or services, but could provide more clearly defined levels of service for simplified understanding how products enhance those tiers. Additional consideration to physical call options should also be explored. |
| Christopher Smith | | | INGAA | | WGQ Pipeline | S | 1 | INGAA supports a survey of existing natural gas market products and services currently available through pipelines, marketing managers, or other entities. The survey will inform discussions about whether new products and services are needed before participants in the GEH Forum discuss what new products and services might look like. |
| Kim Van Pelt | | | Boardwalk | | WGQ Pipeline | S | 1 | INGAA supports a survey of existing natural gas market products and services currently available through pipelines, marketing managers, or other entities. The survey will inform discussions about whether new products and services are needed before participants in the GEH Forum discuss what new products and services might look like. |
| Steven McCord | | | TC Energy Corporation | | WGQ Pipeline | S | 1 | INGAA supports a survey of existing natural gas market products and services currently available through pipelines, marketing managers, or other entities. The survey will inform discussions about whether new products and services are needed before participants in the GEH Forum discuss what new products and services might look like. |
| Christopher Burden | | | Enbridge | | WGQ Pipeline | S | 1 | INGAA supports a survey of existing natural gas market products and services currently available through pipelines, marketing managers, or other entities. The survey will inform discussions about whether new products and services are needed before participants in the GEH Forum discuss what new products and services might look like. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 1 | It would be helpful for this forum to explore additional services that could be provided and additional rate designs and products that would provide more flexibility for generators while still ensuring that the pipeline can earn its revenue requirement. |

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| **1.** | **Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies** | | | | | | |
|  | 1.b | Expanding/revising natural gas demand response/interruptible customer programs to better coordinate the increasing frequency of coinciding electric and natural gas peak load demands and better inform natural gas consumers about real-time pricing | | | | | |
|  |  | *Recommendation 1* | *Consider steps to facilitate the development of advanced exchange agreements between end users, including natural gas-fired generators.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | S | 2 | Exchange agreements should be limited to critical periods and a pilot program should be considered prior to broader implementation in order to better understand the operational parameters. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 4 | 1. It is possibly appropriate to develop a list of valid potential offerings. There is no regulation of Marketers needed.   Discussion: Natural Gas marketers have offered these types of agreements for years. Development of this recommendation could include identification of the types of agreements an end user could negotiate with their marketer, for education purposes, but should not be an all inclusive list nor limit the types of offerings a marketer can offer. |
| Paul Hughes | | | Southern Company | WEQ Generator | S | 2 | Southern Companies generally support advancing new products and exchange agreements with the purpose of increasing the efficiency of the use of natural gas. However, we believe gas markets in most areas of the country are mature and these efforts are already taking place. We do not believe re-allocating existing resources provides an effective solution. While supportive, we are concerned that these actions do not adequately address the underlying infrastructure issues impacting supply and pipeline capacity. |
| Rachel Hogge | | | BHE GT&S | Rachel Hogge | Neutral |  | To the extent that these advanced exchange agreements seek to supplant secondary market, INGAA opposes this recommendation. |
| Matthew Agen | | | American Gas Association | WGQ Distributor |  |  | A concern is this would give natural gas fired generators an unfair market advantage. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S | 3 | FERC should consider steps to facilitate advanced exchange agreements between end users of gas in a comparable manner to the demand response programs it has allowed for the electric industry. These programs must be voluntary and allow the end user to recover its costs. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | O |  | Numerous recommendations in this section address business decisions and services provided by vendors or outside resources, which are not appropriate for market requirements or rules. EPSA does support assessment of natural gas capacity markets for possible improvements and greater transparency. |
| Christopher Smith | | | INGAA | WGQ Pipeline | N/P | N/P | To the extent that these advanced exchange agreements seek to supplant secondary market, INGAA opposes this recommendation. |
| Kim Van Pelt | | | Boardwalk | WGQ Pipeline | N/P | N/P | To the extent that these advanced exchange agreements seek to supplant secondary market, INGAA opposes this recommendation. |
| Steven McCord | | | TC Energy Corporation | WGQ Pipeline | N/P | N/P | To the extent that these advanced exchange agreements seek to supplant secondary market, INGAA opposes this recommendation. |
| Christopher Burden | | | Enbridge | WGQ Pipeline | N/P | N/P | To the extent that these advanced exchange agreements seek to supplant secondary market, INGAA opposes this recommendation. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 3 | The forum should explore additional tools to provide services for generation and for making the secondary market for capacity more transparent and accessible for purposes of price discovery and generator/RTO planning for Day Ahead and real time system needs. |

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|  | 1.b | Expanding/revising natural gas demand response/interruptible customer programs to better coordinate the increasing frequency of coinciding electric and natural gas peak load demands and better inform natural gas consumers about real-time pricing | | | | | |
|  |  | *Recommendation 2* | *Consider the utilization of asset managers, asset sharing mechanisms, and/or asset sharing agreements for electric generation, similar to those by LDCs, to assist in procurement of natural gas.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 4 | 1. Policy should permit the utilization of asset managers, asset sharing mechanisms or other similar agreements for electric generation.   Discussion: This is an excellent recommendation, and I did not realize the electric industry did not have this opportunity. NAESB should ask FERC to eliminate any barriers to creation of this offering. |
| Paul Hughes | | | Southern Company | WEQ Generator | S | 3 | Southern Companies generally support advancing new products and creative agreements with the purpose of increasing the efficiency of the use of natural gas. However, we believe these efforts are already taking place. Southern Companies do not believe re-allocating existing resources provides an effective solution. While supportive, we are concerned that these actions do not adequately address the underlying infrastructure issues impacting supply and pipeline capacity. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | These are already available |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | Generators already utilize asset managers. However those should not be a substitute for one’s meeting their capacity requirements to be available to operate with adequate fuel reserves as well as improving price transparency in those markets. A more transparent secondary market in commodity and capacity release during tight conditions would go further than just adding more asset managers and non-transparent bilateral arrangements to the mix without those other improvements. |

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|  | 1.b | Expanding/revising natural gas demand response/interruptible customer programs to better coordinate the increasing frequency of coinciding electric and natural gas peak load demands and better inform natural gas consumers about real-time pricing | | | | | |
|  |  | *Recommendation 3* | *Modifications or Expansion of Secondary/Capacity Release Markets - Consider expanding bilateral markets, including through the development of a standardized method, to allow for the direct buying/selling of unused capacity between natural gas end users, and to better accommodate the voluntary release of unused firm capacity by “non-critical” end users during extreme events or other critical periods.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | S | 4 | The interstate capacity release market functions well but some limited event-specific waivers from FERC during critical periods may be needed to effectuate advance exchange agreements mentioned in #1 above. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 4 | 1. If end users do not have a mechanism to purchase and sell capacity at their locations after gas delivery then Policy should permit the use of Capacity Release by the end users to effectuate such sales.  2. Policy should be modified so that End Users have the ability to release unused firm capacity on intrastate pipelines and LDCs.  Discussion: Is this recommendation inclusive of Intrastates and LDCs who are deregulated so that they can take advantage of these offerings? Is there consideration of a peer offering on the electric side? |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Southern Companies do not oppose acting on these items but are not optimistic about their success. The natural gas market is mature, and many of these proposed efforts already take place on an annual, monthly, and daily basis in many areas. Although there may be some opportunities with intrastate pipelines, some of these proposals may require hourly scheduling. Gas supply and capacity availability is the underlying issue during extreme events, not market friction. For example, if pipeline capacity were available, then interruptible transportation (IT) would be effective during extreme periods. Constraints are not just limited to pipeline capacity but involve gas supply as well. Our concern remains that these efforts will provide limited, if any, benefit unless the physical core infrastructure constraints are addressed. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | S |  | How is this different from 1 above? |
| Matthew Agen | | | American Gas Association | WGQ Distributor |  |  | The capacity release process is already a transparent process on interstate pipelines. Anyone with a pipeline ID can see what is posted and what has been awarded. Pipeline capacity cannot be used without a pipeline ID, so a standardized portal is an unnecessary expense. Some pipelines also offer email subscriptions for when any releases are posted, which provides notice to interest market participants. |
| Michele Richmond | | | Texas Competitive Power Advocates (TCPA) | WEQ Generator |  |  | TCPA believes that interstate pipelines already have well-functioning and transparent Capacity Release Markets. The same cannot be said for intrastate pipelines which do not have the concept of capacity release with the ability to transact capacity as part of their electronic bulletin boards. Unused pipeline capacity can only be utilized by intrastate pipelines that sell interruptible services or by their marketing affiliates. In both scenarios, there is no mechanism to purchase the unused capacity directly from the shipper in a transparent marketplace. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | O |  | Concerned about "non-critical" end user label FERC has in place a capacity release program that ensures transparency regarding capacity that is available for release so that all market participants can access such capacity. Any changes to the capacity release program must ensure transparency for end users and the same opportunity to access such capacity. We are concerned with the label of end users as “non-critical.” Our members produce critical products and denying them access to their capacity during critical periods could result in safety issues for their workers and irreparable harm to their equipment. |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | S | 5 | Questions 3-8 address enhance secondary markets and capacity release. SPP supports enhancements in these areas in support of greater market liquidity and availability of fuel, any developments in this area must ensure that transparency is enhanced and market manipulation is prevented. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 6 | Although the secondary market exists, more price discovery and transparency would help in facilitating voluntary release of unused firm capacity by non-critical end users that may also be participating in RTO demand response programs. This would be a productive area for further discussion in this process. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S |  | While APGA is generally supportive of many of the proposed recommendations, we believe that some of them, especially those surrounding capacity release markets (Recommendations 3-8), will not be impactful, as capacity releases rarely occur during high demand events that the GEH Forum is working to address. Instead, additional natural gas infrastructure should be developed to ensure sufficient capacity can be delivered during these peak periods. |

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|  | 1.b | Expanding/revising natural gas demand response/interruptible customer programs to better coordinate the increasing frequency of coinciding electric and natural gas peak load demands and better inform natural gas consumers about real-time pricing | | | | | |
|  |  | *Recommendation 4* | *Modifications or Expansion of Secondary/Capacity Release Markets - Consider developing a specific capacity/natural gas swap or exchange trading platform, for use during critical events, that enables natural gas pipelines to coordinate with shippers to facilitate the sale/purchase of any available capacity or supply voluntarily made available by market participants.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | O |  | The ICE platform already exists for trading and adding a new platform could reduce market liquidity; existing pipeline capacity release can also accommodate these actions; exchanges between shippers should be a bilateral exchange agreements that take the location of delivery points into consideration. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | O |  | Discussion: Greater than 90% of all Capacity Release occurs outside of the pipeline facilitation. What is the expected market? This would be a burden for pipelines to support. This is not financially viable for a commercial party to host and facilitate. It’s been tried before. Unless there is a huge market shift, this is not worth the cost of implementing. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Southern Companies do not oppose acting on these items but are not optimistic about their success. The natural gas market is mature, and many of these proposed efforts already take place on an annual, monthly, and daily basis in many areas. Although there may be some opportunities with intrastate pipelines, some of these proposals may require hourly scheduling. Gas supply and capacity availability is the underlying issue during extreme events, not market friction. For example, if pipeline capacity were available, then interruptible transportation (IT) would be effective during extreme periods. Constraints are not just limited to pipeline capacity but involve gas supply as well. Our concern remains that these efforts will provide limited, if any, benefit unless the physical core infrastructure constraints are addressed. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Consider this a private sector opportunity |
| Matthew Agen | | | American Gas Association | WGQ Distributor | S | 1 | The capacity release process is already a transparent process on interstate pipelines. Anyone with a pipeline ID can see what is posted and what has been awarded. Pipeline capacity cannot be used without a pipeline ID, so a standardized portal is an unnecessary expense. Some pipelines also offer email subscriptions for when any releases are posted, which provides notice to interest market participants. |
| Michele Richmond | | | Texas Competitive Power Advocates (TCPA) | WEQ Generator |  |  | TCPA believes that interstate pipelines already have well-functioning and transparent Capacity Release Markets. The same cannot be said for intrastate pipelines which do not have the concept of capacity release with the ability to transact capacity as part of their electronic bulletin boards. Unused pipeline capacity can only be utilized by intrastate pipelines that sell interruptible services or by their marketing affiliates. In both scenarios, there is no mechanism to purchase the unused capacity directly from the shipper in a transparent marketplace. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S | 8 | Already exists? We note that ICE provides a platform for already, but, to the extent additional trading platforms are developed, they must be open to all users and be transparent. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 1 | As noted above an exchange trading platform operating in real time during critical events could help facilitate efficient use of scarce pipeline capacity. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S |  | While APGA is generally supportive of many of the proposed recommendations, we believe that some of them, especially those surrounding capacity release markets (Recommendations 3-8), will not be impactful, as capacity releases rarely occur during high demand events that the GEH Forum is working to address. Instead, additional natural gas infrastructure should be developed to ensure sufficient capacity can be delivered during these peak periods. |

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|  |  | *Recommendation 5* | *Modifications or Expansion of Secondary/Capacity Release Markets - Consider creating standardized methods to post, transact, and facilitate secondary market capacity release.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | O |  | This already exists in the current NAESB standards for interstate gas markets. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | O |  | Discussion: These standards exist in natural gas. Unless this recommendation is for electric markets, there is no opportunity here. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Southern Companies do not oppose acting on these items but are not optimistic about their success. The natural gas market is mature, and many of these proposed efforts already take place on an annual, monthly, and daily basis in many areas. Although there may be some opportunities with intrastate pipelines, some of these proposals may require hourly scheduling. Gas supply and capacity availability is the underlying issue during extreme events, not market friction. For example, if pipeline capacity were available, then interruptible transportation (IT) would be effective during extreme periods. Constraints are not just limited to pipeline capacity but involve gas supply as well. Our concern remains that these efforts will provide limited, if any, benefit unless the physical core infrastructure constraints are addressed. |
| Gene Nowak | | | Kinder Morgan | WGQ Pipeline | S | 1 | § Commenters support this recommendation and provide the following comments: § There is already a robust capacity release market in the interstate gas pipeline industry. Shippers can either prearrange or post for bidding offers of capacity that they wish to release before gas needs to be nominated. § Commenters suggest a slight modification to existing standards to improve the transparency of capacity release transactions. Currently, in order to view open offers, interested parties are required to log into a pipeline’s Customer Activity area to view/bid. An enhancement would be to duplicate open offers outside of the password-protected Customer Activities section on the public Informational Postings section of pipelines’ websites. § By having the offers publicly available, all stakeholders may view/ aggregate (see recommendations 1 a (3)) offers of capacity without having to access the password-protected Customer Activities section of pipelines’ websites. § This change could be accomplished by new NAESB standards and could be added to NAESB’s Annual Plan for the WGQ Quadrant and prioritized as appropriate.§ Commenters support this recommendation and provide the following comments: § There is already a robust capacity release market in the interstate gas pipeline industry. Shippers can either prearrange or post for bidding offers of capacity that they wish to release before gas needs to be nominated. § Commenters suggest a slight modification to existing standards to improve the transparency of capacity release transactions. Currently, in order to view open offers, interested parties are required to log into a pipeline’s Customer Activity area to view/bid. An enhancement would be to duplicate open offers outside of the password-protected Customer Activities section on the public Informational Postings section of pipelines’ websites. § By having the offers publicly available, all stakeholders may view/ aggregate (see recommendations 1 a (3)) offers of capacity without having to access the password-protected Customer Activities section of pipelines’ websites. § This change could be accomplished by new NAESB standards and could be added to NAESB’s Annual Plan for the WGQ Quadrant and prioritized as appropriate. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | This recommendation is not clear. There are already FERC standardized rules for capacity release for interstate pipelines. If the reference to secondary market means something else, we are unclear as to the question. |
| Rachel A. Hogge | | | BHE GT&S | WGQ Pipeline | S | 1 | INGAA supports consideration of ways to aggregate and disseminate the extensive amount of information currently available through postings of secondary market transactions. Because the aim of these standardized methods is to improve electric reliability, electric customers ultimately must bear the cost of developing and maintain these methods. |
| Matthew Agen | | | American Gas Association | WGQ Distributor |  |  | The capacity release process is already a transparent process on interstate pipelines. Anyone with a pipeline ID can see what is posted and what has been awarded. Pipeline capacity cannot be used without a pipeline ID, so a standardized portal is an unnecessary expense. Some pipelines also offer email subscriptions for when any releases are posted which provides notice to interest market participants. Pipeline restrictions and capacity release are not a “one size fits all” type of thing. The pipelines have each tailored restrictions and capacity release to how gas flows on their specific pipeline. Standardization will not capture all the individual aspects of the pipeline |
| Michele Richmond | | | Texas Competitive Power Advocates (TCPA) | WEQ Generator |  |  | TCPA believes that interstate pipelines already have well-functioning and transparent Capacity Release Markets. The same cannot be said for intrastate pipelines which do not have the concept of capacity release with the ability to transact capacity as part of their electronic bulletin boards. Unused pipeline capacity can only be utilized by intrastate pipelines that sell interruptible services or by their marketing affiliates. In both scenarios, there is no mechanism to purchase the unused capacity directly from the shipper in a transparent marketplace. |
| Christopher Smith | | | INGAA | WGQ Pipeline | S | 1 | INGAA supports consideration of ways to aggregate and disseminate the extensive amount of information currently available through postings of secondary market transactions. Because the aim of these standardized methods is to improve electric reliability, electric customers ultimately must bear the cost of developing and maintain these methods. |
| Kim Van Pelt | | | Boardwalk | WGQ Pipeline | S | 1 | INGAA supports consideration of ways to aggregate and disseminate the extensive amount of information currently available through postings of secondary market transactions. Because the aim of these standardized methods is to improve electric reliability, electric customers ultimately must bear the cost of developing and maintain these methods. |
| Steven McCord | | | TC Energy Corporation | WGQ Pipeline | S | 1 | INGAA supports consideration of ways to aggregate and disseminate the extensive amount of information currently available through postings of secondary market transactions. Because the aim of these standardized methods is to improve electric reliability, electric customers ultimately must bear the cost of developing and maintain these methods. |
| Christopher Burden | | | Enbridge | WGQ Pipeline | S | 1 | INGAA supports consideration of ways to aggregate and disseminate the extensive amount of information currently available through postings of secondary market transactions. Because the aim of these standardized methods is to improve electric reliability, electric customers ultimately must bear the cost of developing and maintain these methods. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S |  | While APGA is generally supportive of many of the proposed recommendations, we believe that some of them, especially those surrounding capacity release markets (Recommendations 3-8), will not be impactful, as capacity releases rarely occur during high demand events that the GEH Forum is working to address. Instead, additional natural gas infrastructure should be developed to ensure sufficient capacity can be delivered during these peak periods. |

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|  |  | *Recommendation 6* | *Modifications or Expansion of Secondary/Capacity Release Markets - Consider requirements that natural gas pipelines provide additional information related to aggregations of capacity release data, such as the percentage of how often secondary points are available during peak day periods.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 4 | 1: NAESB develop standards and datasets for the information to be exchanged.  2: Industry participants either develop commercial solutions or group together to develop solutions relevant to their groups’ business interest. 3: Information available should be able to be subscribed to by any interested party.  Discussion: All referenced recommendations call for development of one or more commercial applications where industry participants can provide information for analysis of gas and power performance and availability as well as utilize the available data for access to analytics. This digitalization of a large quantity of data would provide insight into the market place, by participant role, that is requested in this list of recommendations. This commercial application should be a venture sponsored and developed by industry participants or independent software providers and available on a subscription or per-use basis.  NAESB’s responsibility in this would be to identify the data needed, the timing upon which it is provided, and the datasets for the information to be provided. NAESB would also develop related standards on data timing, quality, etc, as NAESB has done so well in other circumstances. Additionally the NAESB EDM subcommittee would evaluate any efficiencies and improvements to be used in exchange of this information.  The data provided by participants should be available to anyone (including commercial applications) who wants to subscribe to such data such as the Interstate Pipeline’s provision of system wide notices and capacity release today. (I believe publicly available, not sure). NAESB should not be the aggregator and distributor of this data. For NAESB to do this would discourage commercial development of analytic tools based on the data and would be a liability for NAESB in a whole new business channel.  The decision to require the data and the timeline for the data to be provided is up to the regulatory body governing that industry participant. This should not be a requirement of pipelines. This should be a commercial offering from a data service provider. The information to analyze existing data is in place today. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Southern Companies do not oppose acting on these items but are not optimistic about their success. The natural gas market is mature, and many of these proposed efforts already take place on an annual, monthly, and daily basis in many areas. Although there may be some opportunities with intrastate pipelines, some of these proposals may require hourly scheduling. Gas supply and capacity availability is the underlying issue during extreme events, not market friction. For example, if pipeline capacity were available, then interruptible transportation (IT) would be effective during extreme periods. Constraints are not just limited to pipeline capacity but involve gas supply as well. Our concern remains that these efforts will provide limited, if any, benefit unless the physical core infrastructure constraints are addressed. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Generally support more transparency, but not clear on what is suggested here. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S | 1 | FERC, through its regulation of pipeline capacity release information postings, should require this additional information be provided as soon as possible and in a cost-effective manner. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S |  | While APGA is generally supportive of many of the proposed recommendations, we believe that some of them, especially those surrounding capacity release markets (Recommendations 3-8), will not be impactful, as capacity releases rarely occur during high demand events that the GEH Forum is working to address. Instead, additional natural gas infrastructure should be developed to ensure sufficient capacity can be delivered during these peak periods. |

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|  |  | *Recommendation 7* | *Modifications or Expansion of Secondary/Capacity Release Markets - Consider creating an intrastate-specific capacity release market.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 4 | 1. Develop or modify existing standards to support capacity release in deregulated and regulated intrastate and LDC markets.  Discussion: This would be appropriate for deregulated intrastates and LDCs. A clear understanding of the benefit of this offering may encourage more states to deregulate their intrastates and LDCs. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Southern Companies do not oppose acting on these items but are not optimistic about their success. The natural gas market is mature, and many of these proposed efforts already take place on an annual, monthly, and daily basis in many areas. Although there may be some opportunities with intrastate pipelines, some of these proposals may require hourly scheduling. Gas supply and capacity availability is the underlying issue during extreme events, not market friction. For example, if pipeline capacity were available, then interruptible transportation (IT) would be effective during extreme periods. Constraints are not just limited to pipeline capacity but involve gas supply as well. Our concern remains that these efforts will provide limited, if any, benefit unless the physical core infrastructure constraints are addressed. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | S |  | Support measures to require intra-states to adopt FERC capacity release rules. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | FERC should leave this to the state commissions. |
| Michele Richmond | | | Texas Competitive Power Advocates (TCPA) | WEQ Generator | S | 1 | TCPA believes that interstate pipelines already have well-functioning and transparent Capacity Release Markets. The same cannot be said for intrastate pipelines which do not have the concept of capacity release with the ability to transact capacity as part of their electronic bulletin boards. Unused pipeline capacity can only be utilized by intrastate pipelines that sell interruptible services or by their marketing affiliates. In both scenarios, there is no mechanism to purchase the unused capacity directly from the shipper in a transparent marketplace. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | NA |  | Because this question is limited to intrastate markets, PJM is indicating N/A as a response. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S |  | While APGA is generally supportive of many of the proposed recommendations, we believe that some of them, especially those surrounding capacity release markets (Recommendations 3-8), will not be impactful, as capacity releases rarely occur during high demand events that the GEH Forum is working to address. Instead, additional natural gas infrastructure should be developed to ensure sufficient capacity can be delivered during these peak periods. |

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|  |  | *Recommendation 8* | *Modifications or Expansion of Secondary/Capacity Release Markets - Consider providing real-time information regarding capacity release.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | O |  | This already exists on pipeline EBBs. Education on what is already available is needed in this forum. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | O |  | Discussion: See Comment I. This is a very limited market. There are standards in place that time capacity release bidding and awarding. Real Time is not relevant in this context. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Southern Companies do not oppose acting on these items but are not optimistic about their success. The natural gas market is mature, and many of these proposed efforts already take place on an annual, monthly, and daily basis in many areas. Although there may be some opportunities with intrastate pipelines, some of these proposals may require hourly scheduling. Gas supply and capacity availability is the underlying issue during extreme events, not market friction. For example, if pipeline capacity were available, then interruptible transportation (IT) would be effective during extreme periods. Constraints are not just limited to pipeline capacity but involve gas supply as well. Our concern remains that these efforts will provide limited, if any, benefit unless the physical core infrastructure constraints are addressed. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | S |  | Interstates already do this. Support similar requirements for intrastates. Specifically, we support intrastates being subject to the same requirements as interstates under 18 CFR § 284.13, Reporting requirements for interstate pipelines. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | The Capacity release process is already a transparent process on interstate pipelines. Anyone with a pipeline ID can see what is posted and what has been awarded. Pipeline capacity cannot be used. Some pipelines also offer email subscriptions for alerts when any releases are posted, which provides notice to interested market participants. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S | 1 | I like the idea of real-time more than just at the start of the scheduling cycle. |
| Michele Richmond | | | Texas Competitive Power Advocates (TCPA) | WEQ Generator | S | 2 | TCPA believes that interstate pipelines already have well-functioning and transparent Capacity Release Markets. The same cannot be said for intrastate pipelines which do not have the concept of capacity release with the ability to transact capacity as part of their electronic bulletin boards. Unused pipeline capacity can only be utilized by intrastate pipelines that sell interruptible services or by their marketing affiliates. In both scenarios, there is no mechanism to purchase the unused capacity directly from the shipper in a transparent marketplace. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S |  | While APGA is generally supportive of many of the proposed recommendations, we believe that some of them, especially those surrounding capacity release markets (Recommendations 3-8), will not be impactful, as capacity releases rarely occur during high demand events that the GEH Forum is working to address. Instead, additional natural gas infrastructure should be developed to ensure sufficient capacity can be delivered during these peak periods. |

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|  |  | *Recommendation 9* | *Modifications or Expansion of Secondary/Capacity Release Markets - Consider enhancing intraday transaction reporting requirements to increase transparency regarding wholesale gas price formation on the secondary market, such as providing the quantity of available capacity and the associated price at the start of each scheduling cycle.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | O |  | ICE already provides this information. FERC price reporting policy was intended to encourage reporting and onerous intra-day reporting requirements would discourage reporting. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | O |  | Discussion: Who would be the entity to provide this data. Pipelines are not involved in the pricing of gas. The price of the gas transportation is already disclosed in the Capacity Release Award process. That is the pipeline’s only involvement in pricing. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Southern Companies do not oppose acting on these items but are not optimistic about their success. The natural gas market is mature, and many of these proposed efforts already take place on an annual, monthly, and daily basis in many areas. Although there may be some opportunities with intrastate pipelines, some of these proposals may require hourly scheduling. Gas supply and capacity availability is the underlying issue during extreme events, not market friction. For example, if pipeline capacity were available, then interruptible transportation (IT) would be effective during extreme periods. Constraints are not just limited to pipeline capacity but involve gas supply as well. Our concern remains that these efforts will provide limited, if any, benefit unless the physical core infrastructure constraints are addressed. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | S |  | Interstates already provide intra-day available capacity; intrastates should do it also |
| Catherine Elder | | | Aspen Environmental Group | Observer | S | 7 | I like the idea of real-time more than just at the start of the scheduling cycle. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S |  | APGA is also supportive of enhanced intraday transaction reporting requirements to increase transparency regarding wholesale gas price formation on the secondary market (Recommendation 9), as we believe that this increased transparency will help keep costs low for consumers. |

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|  |  | *Recommendation 10* | | *Consider modifications to the procurement practices for LDCs that reduce the amount of required natural gas contingency reserves.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | | WGQ Producer | O |  | Contract holders of interstate capacity have the right to make their own decision on how much capacity they need and the use of their reserved capacity. Some states do not allow LDCs to share capacity release revenues, which, if implemented, could encourage more releases. Also, reducing LDC reserves could reduce flexibility that is available for generators behind the citygate. |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | S | 4 | 1. Identify a list of alternate / non traditional sources of natural gas that LDCs, Utilities and electric generators could consider to supplement existing natural gas reserves.  2. Policy should be changed to encourage LDCs, Utilities and electric generators to invest in alternative forms of natural gas reserves.  Discussion: This is an excellent recommendation and should apply to LDCs, Utilities and electric generators. Each should have a stack of identified assets and their availability to be called on as contingency reserves. |
| Paul Hughes | | | Southern Company | | WEQ Generator | O |  | Southern Companies oppose solutions to re-allocate already constrained resources as the solutions do not address the underlying infrastructure issues. Additionally, individual LDCs are best positioned to make such decisions. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | Strongly oppose |
| Matthew Agen | | | American Gas Association | | WGQ Distributor | O |  | AGA does not support this recommendation as the demand characteristics, operational requirements, and available upstream resources (and ultimately the required reserves) are unique and different for every LDC. Furthermore, this is a state commission issue, not a FERC issue. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | | WGQ End User | O |  | Degrades quality of gas service Some of our members take some services from LDCs and are concerned that modifications to the procurement practices of LDCs will degrade the quality of the natural gas service our members receive. |
| Nancy Bagot | | | Electric Power Supply Association | | WEQ Generator | N/A |  | The issue of LDC capacity reserves and release practices should be examined in certain regions. However, a recommendation to modify procurement practices implies more regulatory interference than may be warranted in advance of inquiries into the practices and impacts on gas availability during critical periods. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 7 | We respect the need for LDCs to not run short of required contingency reserves. The transmission system faced similar issues in the evolution from a contract path model to a physical path model which has allowed scarce transmission capacity to be more efficiently utilized by all critical users. Additional review of that transition and its potential applicability (albeit with modification) to the natural gas pipeline system would be worth additional review in this forum. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | O |  | However, APGA is opposed to modifying the procurement practices for LDCs (Recommendation 10). APGA members spend significant time and resources to determine the needs of their systems . Hindering their efforts to serve their communities, as is their stated obligation, to presumably better the BES is not a viable path forward to solving GEH issues, but would instead simply shift the burden from the BES to LDCs. |

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|  |  | *Recommendation 11* | | *Consider requiring generators to procure back-up services to ensure continued generation, such as from demand response, in the development of new generation projects.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | | WGQ Producer | S | 5 | While we support backup services, these products should be encouraged through market-based approaches, not required. |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | S | 3 | 1. Identify a list of alternate / non traditional sources of natural gas that LDCs, Utilities and electric generators could consider to supplement existing natural gas reserves.  2. Policy should be changed to encourage LDCs, Utilities and electric generators to invest in alternative forms of natural gas reserves.  Discussion: This is an excellent recommendation and should apply to LDCs, Utilities and electric generators. Each should have a stack of identified assets and their availability to be called on as contingency reserves. |
| Paul Hughes | | | Southern Company | | WEQ Generator | S | 1 | Back-up service is only valuable if it is available at the time of need and is of sufficient magnitude to provide the desired level of reliability during times of extreme weather. All members of the Southern Company power pool must provide enough firm capacity to meet load plus reserve requirements. Fuel policies dictate that certain mitigations must be in place to enhance reliability, including requirements for FT, natural gas storage, and, where applicable, back-up fuel sources. Demand Response programs can also be utilized by the individual power pool members. The cost of this risk mitigation is embedded in our rates and although such practices do not eliminate all operational and fuel-related risks, these mitigations do enhance reliability. We believe such practices reflect our accountability to customers and demonstrate an obligation to serve versus creating an opportunity to serve. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | O | 9 | Why just new generation projects? I would support if all those generators that are deemed necessary for reliability were required to have firm supply and transport contracts and be compensated for those costs. The demand response here needs to be from a) conservation and b) asking industrial facilities who can cut back and reduce operations to do so. The latter is more likely useful in an emergency. But that means building effective programs that compensate those who give up their gas for doing so and that information about who is doing that go to the platform/emergency facilitator. |
| Michele Richmond | | | Texas Competitive Power Advocates (TCPA) | | WEQ Generator | O |  | TCPA does not support this recommendation. The marketplace should value any new generation based on the generator project’s attributes and location. Other market mechanisms are in place by ISO’s/RTO’s that ensure that sufficient back-up services are available to support system reliability. For instance, any generator that is financially committed to the market (e.g., through the Day-Ahead Market or a bilateral obligation) is already required to pay for back-up services by either purchasing replacement power from the real-time balancing energy market or by through physical replacement. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | | WGQ End User | S | 2 | FERC, through its regulation of wholesale markets, and NERC, as the reliability entity, should require generators to procure back-up services to ensure continued generation, which will effectively require new generators that want to participate in such markets to procure such services. |
| Nancy Bagot | | | Electric Power Supply Association | | WEQ Generator | N/A |  | This is not an issue for which requirements should be considered, particularly as to specific backup resources. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | O |  | Generators do not purchase demand response in the competitive markets. However, co-located batteries or dual fuel are potentially viable options. This particular issue is one unique to each RTOs market design where generation or demand response are procured through a bid-based system. |
| **1.** | **Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies** | | | | | | | |
|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | | |
|  |  | *Recommendation 1* | *Gas Market Scheduling – Consider if revisions should be made to the gas nomination cycles such as changes to the timing of the nomination processes, shortening of cycle periods, or additional intraday cycles.* | | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | | WGQ Producer | S | 3 | Changes in the nomination cycle are worthy of consideration but NGSA’s support here does not convey support for action. More discussion and analysis of what is actually feasible is needed. The current nomination cycles work well during normal conditions so any changes should be focused on critical periods in limited instances where generators need to flow gas more quickly. Also, a pilot process would be needed to limit impacts on the system. This evaluation may also involve eliminating existing cycles that are under-utilized. |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | O |  | Discussion: There are many other recommendations that should be enacted and observed before this idea comes forward again. This has been tried before with limited success. |
| Paul Hughes | | | Southern Company | | WEQ Generator | S | 7 | As noted earlier, the additional cycle during the last GEH effort did provide some additional flexibility in scheduling. However, such a change will not impact the gas supply infrastructure and will not provide any additional capacity or supply. Although not opposed to a further study, we are uncertain of any significant positive impact. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | S |  | Support although we believe it will be very challenging |
| Matthew Agen | | | American Gas Association | | WGQ Distributor | O |  | AGA does not support this recommendation. More nomination cycles do not create incremental capacity or commodity; the physics of natural gas flow prevent “instantaneous” energy delivery. Moreover, this would greatly increase administrative burdens. Furthermore, on critical days capacity is often not available after the timely cycle. More cycles would not help. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S |  | Not clear to me that shorter periods or more cycles will help. Now, should there be more cycles in an emergency? Could the pipes and big LDCs who run transmission reasonably process more cycles? Don’t oppose considering it but not sure we will find it to be of value; seems like a red herring and that information flow and access to gas and transmission for it are bigger issues. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | | WGQ End User | O |  | No evidence that changes to gas nomination process will help if generation is not dispatched prior to start of gas market AF&PA and PGC note that there is no evidence that changes to the natural gas nomination processes will help avoid the problems that were evidenced during the Polar Vortex and the Uri Storm. Based on the reports that were issued on these storms, many of the issues arose from failure to weatherize facilities that froze and failure to forecast sufficient load, which resulted in a failure to commit sufficient generation prior to the events. As indicated by other commentators, the gas market is most liquid at the start of the gas day, and changes to the nomination cycles are not going to result in significantly more gas availability, especially during a shortage situation where wells are freezing. Hourly gas nominations would increase our costs of doing business with no evidence that the benefits would exceed such costs. |
| Joshua Phillips | | | Southwest Power Pool | | WEQ Independent Grid Operator & Planner | S | 5 | During emergency periods, increased nomination frequency may increase liquidity. This should be evaluated if it would allow additional release by those who may have previously scheduled for an extended period but are no longer utilizing that capacity. |
| Nancy Bagot | | | Electric Power Supply Association | | WEQ Generator | S | 1 | While EPSA doubts that additional nomination cycles are useful, the timing of the NAESB nomination schedule should be assessed for improvements, particularly regarding the timing of the intraday cycle periods between nomination and gas flow. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 1 | Further discussion of harmonizing the gas and electric days would be helpful. |

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| **1.** | **Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies** | | | | | | |
|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | |
|  |  | *Recommendation 2* | *Gas Market Scheduling – Consider the exploration of hourly gas nominations.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | O |  | While changes to the nomination periods during critical periods should be explored, a recommendation that specifies hourly nominations is too specific until we understand what is needed by generators and what is feasible to accommodate. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | O |  | Discussion: There are many other recommendations that should be enacted and observed before this idea comes forward again. This has been tried before with limited success. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Moving to hourly scheduling of gas implies addition of more staffing and potentially more bureaucracy. Although we are aware of one pipeline that does allow hourly scheduling, we do not believe this feature would have been helpful during Winter Storms Elliott or Uri. We are not confident that the benefits would outweigh the costs. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Do not believe material benefits are likely |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | AGA does not support this recommendation. Hourly nomination cycles do not create incremental capacity or commodity; the physics of natural gas flow prevents “instantaneous” energy delivery. Moreover, this would greatly increase administrative burdens.  In many instances gas is flowing across two or more pipelines. There needs to be time for the pipelines to confirm volumes and other information with each other and run scheduling jobs to validate changes. |
| Catherine Elder | | | Aspen Environmental Group | Observer |  |  | Hourly noms would be lovely if everybody were connected to storage or a way to inject more gas into pipes each hour and we had hourly pricing to reflect the value of gas in different hours. By themselves it is not clear to me that they help or that they are even feasible. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | O |  | No evidence that changes to gas nomination process will help if generation is not dispatched prior to start of gas market AF&PA and PGC note that there is no evidence that changes to the natural gas nomination processes will help avoid the problems that were evidenced during the Polar Vortex and the Uri Storm. Based on the reports that were issued on these storms, many of the issues arose from failure to weatherize facilities that froze and failure to forecast sufficient load, which resulted in a failure to commit sufficient generation prior to the events. As indicated by other commentators, the gas market is most liquid at the start of the gas day, and changes to the nomination cycles are not going to result in significantly more gas availability, especially during a shortage situation where wells are freezing. Hourly gas nominations would increase our costs of doing business with no evidence that the benefits would exceed such costs. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S | 2 | Moving toward hourly nominations should be a discussion as it would likely address concerns with non-ratable takes during critical periods and address power and gas day misalignment, which does pose concerns for generators regarding coverage of the morning and evening peaks over two gas days. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 1 | Further discussion of harmonizing the gas and electric days would be helpful. |

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| **1.** | **Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies** | | | | | | |
|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | |
|  |  | *Recommendation 3* | *Gas Market Scheduling – Consider the elimination of the “no bump” policy for natural gas pipeline nominations to help ensure that parties who have contracted for firm transportation rights can access the service.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | O |  | Per NGSA’s prior comments, this suggestion would harm many generators that may need to rely on IT to meet unexpected calls from RTOs |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | O |  | Discussion: This recommendation should only be considered if it is found to increase the value of owning Firm Transportation. Otherwise, it has no purpose. |
| Paul Hughes | | | Southern Company | WEQ Generator | S | 2 | We strongly support policies that allow those who have contracted for Firm Natural Gas Transportation to maintain their rights to that Firm Transportation. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | The pipeline is fully subscribed after timely. Gas schedulers need a window after the last cycle that gas can be bumped so they can balance themselves out and make any necessary changes. If you can bump for the entire day, they cannot fix any late problems that come up. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S | 1 | Yes, please. The firm holder of the rights should be able to call on their firm capacity in any and all nomination windows. |
| Andrea Chambers | | | Process Gas Consumers Group | WGQ End User | O |  | No evidence that changes to gas nomination process will help if generation is not dispatched prior to start of gas market AF&PA and PGC note that there is no evidence that changes to the natural gas nomination processes will help avoid the problems that were evidenced during the Polar Vortex and the Uri Storm. Based on the reports that were issued on these storms, many of the issues arose from failure to weatherize facilities that froze and failure to forecast sufficient load, which resulted in a failure to commit sufficient generation prior to the events. As indicated by other commentators, the gas market is most liquid at the start of the gas day, and changes to the nomination cycles are not going to result in significantly more gas availability, especially during a shortage situation where wells are freezing. Hourly gas nominations would increase our costs of doing business with no evidence that the benefits would exceed such costs. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 1 | The impacts of the ‘no bump’ policy on critical peak days should be reviewed further in this forum. |

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| **1.** | **Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies** | | | | | | |
|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | |
|  |  | *Recommendation 4* | *Gas Market Scheduling – Consider, during weekends and holidays, provisions that would allow for natural gas to be traded and scheduled/adjusted for individual days, or available during extreme weather events.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | O |  | NAESB nomination cycles are provided 7 days a week and gas can already be purchased daily. The key issue is liquidity, which cannot be created but price signals can encourage development of a more vibrant market during these periods. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | O |  | Discussion: This service exists today. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | We acknowledge that less flexibility exists on weekends and holidays. Scheduling and trading on weekends and holidays is already available to the extent that capacity and the gas commodity are available for the delivery location. However, if there is no gas supply left to be traded, the impact of this solution will be limited at best. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | S |  | Access to gas purchases on a non-ratable flow basis for weekends and holidays would improve reliability and reduce costs to customers. Xcel Energy supports. |
| Rachel Hogge | | | BHE GT&S | WGQ Pipeline | S | 4 | INGAA reiterates that interstate natural gas pipelines operate 24/7, and shippers have the opportunity to nominate and schedule pipeline capacity each day, including weekends and holidays. INGAA suggests that the GEH Forum consider this recommendation in conjunction with recommended changes to electric market design. See, e.g., Recommendations 1.c.6, 7. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | Weekend and holiday transactions are already available to the market to the extent that capacity and commodity are available for the delivery location |
| Catherine Elder | | | Aspen Environmental Group | Observer | S | 3 | Yes, yes please please. This 2 and 3-day gap in the market is archaic and needs remedy. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S |  | Only if voluntary. AF&PA and PGC would support the option to allow non-ratable flows and trading and scheduling based on an individual day, so long as it is voluntary. |
| John Stevenson | | | NYISO | WEQ Independent Grid Operator & Planner | S | 1 | While the NYISO’s Day-Ahead Market scheduling process works efficiently with natural gas nomination opportunities, enhancements to the natural gas scheduling process could provide electric generators with increased flexibility that will be necessary to support electric system reliability under the changing generation and load conditions discussed throughout this report.  Additional nomination opportunities over weekends and holidays would more efficiently support electric generation. Generators would be able to procure gas that aligns closer to their electric generation needs, which could vary dramatically over a two- or three-day weekend, or the five-day period around the Thanksgiving holiday. Forecasting electric generation and corresponding natural gas needs several days in advance increases uncertainty today and will prove more difficult in the future with higher penetration of intermittent generation.   The NYISO is planning for the eventual deactivation of natural gas-fired electric generators in response to public policy in New York State. However, natural gas-fueled generators will be required to maintain electric system reliability until sufficient new resources with similar operating attributes are developed and connected to the electric system. Flexible natural gas nominations will be critical to balance the intermittency of wind and solar resources until new flexible clean technologies are developed and deployed consistent with New York State’s CLCPA mandates.  The NYISO encourages consideration of the following potential improvements:  1. Aligning natural gas nomination scheduling requirements more closely with actual deliveries (i.e., permit hourly gas nominations).  2. Shortening the time commitments associated with natural gas deliveries (i.e., hourly gas nominations), particularly when actual temperatures deviate from forecasts.  3. Development of non-traditional gas market products and a secondary market for the resale of unused gas that are responsive to changing electric market system needs (e.g., the ability to start or ramp-up natural gas fired generation to address wind lulls, or the ramp-down of solar production on summer afternoons).  4. Hardening/winterization of natural gas infrastructure and designation/identification of critical interdependent facilities (natural gas and other fuel supply infrastructure, communication infrastructure, etc.).    With the increasing number of intermittent electricity resources being installed and increasing variability in electric load, natural gas-fired power plants will be called on to utilize their fast start and quick ramping capability to respond and serve as a backstop to maintain the reliability of the power grid. As a result, pipelines will be asked to deliver large volumes of natural gas on short notice, a major shift from the traditional model of supplying natural gas to industrial and local distribution markets. The potential improvements proposed here by the NYISO would increase market opportunities for natural gas producers and pipelines and increase flexibility for electric generators. |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | S | 1 | During emergency periods of sudden gas demand, consideration should be given to solutions that increase the liquidity of the markets. Uri and Elliott both occurred over holiday day weekends. Comments raised during the forum indicate a lack of liquidity during those periods contributing to challenges for accessing gas. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S | 5 | This should be discussed, noting that there may be different needs over holiday weekends and during critical periods or forecasted extreme weather events. |
| Christopher Smith | | | INGAA | WGQ Pipeline | S | 4 | INGAA reiterates that interstate natural gas pipelines operate 24/7, and shippers have the opportunity to nominate and schedule pipeline capacity each day, including weekends and holidays. INGAA suggests that the GEH Forum consider this recommendation in conjunction with recommended changes to electric market design. See, e.g., Recommendations 1.c.6, 7. |
| Kim Van Pelt | | | Boardwalk | WGQ Pipeline | S | 4 | INGAA reiterates that interstate natural gas pipelines operate 24/7, and shippers have the opportunity to nominate and schedule pipeline capacity each day, including weekends and holidays. INGAA suggests that the GEH Forum consider this recommendation in conjunction with recommended changes to electric market design. See, e.g., Recommendations 1.c.6, 7. |
| Steven McCord | | | TC Energy Corporation | WGQ Pipeline | S | 4 | INGAA reiterates that interstate natural gas pipelines operate 24/7, and shippers have the opportunity to nominate and schedule pipeline capacity each day, including weekends and holidays. INGAA suggests that the GEH Forum consider this recommendation in conjunction with recommended changes to electric market design. See, e.g., Recommendations 1.c.6, 7. |
| Christopher Burden | | | Enbridge | WGQ Pipeline | S | 4 | INGAA reiterates that interstate natural gas pipelines operate 24/7, and shippers have the opportunity to nominate and schedule pipeline capacity each day, including weekends and holidays. INGAA suggests that the GEH Forum consider this recommendation in conjunction with recommended changes to electric market design. See, e.g., Recommendations 1.c.6, 7. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 1 | There clearly needs to be work on enhancing liquidity and transparency of secondary release and commodity on weekends and holidays as those days have been the ones where persistent challenges remain. |

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| **1.** | **Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies** | | | | | | |
|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | |
|  |  | *Recommendation 5* | *Gas Market Scheduling – Consider non-ratable flow options to provide increased flexibility in purchasing of natural gas, especially during weekends or holidays.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | S | 8 | While NGSA supports this recommendation to consider non-ratable options, it must be understood that non-ratable options are only possible when sufficient infrastructure exists to accommodate them. The forum should consider whether non-ratable services would create the right incentives to fix the problems experienced by generators. We believe this is primarily a cost issue because it will take more existing capacity or require pipelines to add capacity to accommodate generator non-hourly flow requirements. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | O |  | Discussion: This recommendation would mean regulation of marketers. This goes against open access. |
| Paul Hughes | | | Southern Company | WEQ Generator | S | 5 | Southern Companies are supportive of actions that allow for more flexibility, including non-ratable flow options. However, we remain skeptical regarding the market appetite for what may be a very expensive product. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | S |  | How is this different from 1.c.4? |
| Rachel Hogge | | | BHE GT&S | WGQ Pipeline | S | 10 | Pipelines can offer tailored services to generators that include non-ratable flows if the pipelines have capacity or if the generators execute precedent agreements that would support the system modifications necessary to be able to offer an expansion of capacity. Many pipelines do offer such services when those conditions are met. See INGAA Response to Question 3 of GEH Forum Survey for Nov. 8 Meeting. Ultimately, shippers must be willing to pay for these services and the increased flexibility that they provide.  INGAA clarifies that non-ratable injections into a pipeline are different from non-ratable takes from a pipeline. INGAA opposes any measures that compromise safety by injecting natural gas into a pipeline without a corresponding take from the pipeline. |
| Matthew Agen | | | American Gas Association | WGQ Distributor |  |  | Tariff options already allow for this. It should be up to each individual pipeline. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S |  | Maybe, but back to hourly noms – what is the physical vehicle by which non-ratable flows are feasible? There isn’t one by and large. Now, could we just order all pipelines to allow hourly nominations and non-ratable takes and encourage them to add the LNG needle peakers or other storage to provide that service? If we are willing to do that and then allow the generators to recover the cost of buying that service (and recover from electric ratepayers as essentially a reliability surcharge), then this works great and I’d support. But all by itself would be meaningful and ineffective. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S |  | Only if voluntary. AF&PA and PGC would support the option to allow non-ratable flows and trading and scheduling based on an individual day, so long as it is voluntary. |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | S | 3 | Support consideration of items that improve flexibility during these periods. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S | 4 | Questions regarding feasibility during critical periods. |
| Christopher Smith | | | INGAA | WGQ Pipeline | S |  | Pipelines can offer tailored services to generators that include non-ratable flows if the pipelines have capacity or if the generators execute precedent agreements that would support the system modifications necessary to be able to offer an expansion of capacity. Many pipelines do offer such services when those conditions are met. See INGAA Response to Question 3 of GEH Forum Survey for Nov. 8 Meeting. Ultimately, shippers must be willing to pay for these services and the increased flexibility that they provide.  INGAA clarifies that non-ratable injections into a pipeline are different from non-ratable takes from a pipeline. INGAA opposes any measures that compromise safety by injecting natural gas into a pipeline without a corresponding take from the pipeline. |
| Kim Van Pelt | | | Boardwalk | WGQ Pipeline | S |  | Pipelines can offer tailored services to generators that include non-ratable flows if the pipelines have capacity or if the generators execute precedent agreements that would support the system modifications necessary to be able to offer an expansion of capacity. Many pipelines do offer such services when those conditions are met. See INGAA Response to Question 3 of GEH Forum Survey for Nov. 8 Meeting. Ultimately, shippers must be willing to pay for these services and the increased flexibility that they provide.  INGAA clarifies that non-ratable injections into a pipeline are different from non-ratable takes from a pipeline. INGAA opposes any measures that compromise safety by injecting natural gas into a pipeline without a corresponding take from the pipeline. |
| Steven McCord | | | TC Energy Corporation | WGQ Pipeline | S |  | Pipelines can offer tailored services to generators that include non-ratable flows if the pipelines have capacity or if the generators execute precedent agreements that would support the system modifications necessary to be able to offer an expansion of capacity. Many pipelines do offer such services when those conditions are met. See INGAA Response to Question 3 of GEH Forum Survey for Nov. 8 Meeting. Ultimately, shippers must be willing to pay for these services and the increased flexibility that they provide.  INGAA clarifies that non-ratable injections into a pipeline are different from non-ratable takes from a pipeline. INGAA opposes any measures that compromise safety by injecting natural gas into a pipeline without a corresponding take from the pipeline. |
| Christopher Burden | | | Enbridge | WGQ Pipeline | S |  | Pipelines can offer tailored services to generators that include non-ratable flows if the pipelines have capacity or if the generators execute precedent agreements that would support the system modifications necessary to be able to offer an expansion of capacity. Many pipelines do offer such services when those conditions are met. See INGAA Response to Question 3 of GEH Forum Survey for Nov. 8 Meeting. Ultimately, shippers must be willing to pay for these services and the increased flexibility that they provide.  INGAA clarifies that non-ratable injections into a pipeline are different from non-ratable takes from a pipeline. INGAA opposes any measures that compromise safety by injecting natural gas into a pipeline without a corresponding take from the pipeline. |

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| **1.** | **Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies** | | | | | | |
|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | |
|  |  | *Recommendation 6* | *Electric Market Design – Consider changes to scheduling practices to better align market clearing times, the issuance of day-ahead awards, and the dispatching of generators such as adjusting the timing of day-ahead awards to better coordinate with the start of the natural gas timely nomination cycle.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 1 | 1. Consider changes to Electric Market scheduling practices and market clearing times as described to better align with natural gas schedules.  Discussion: This recommendation should be considered before any new revisions to the gas scheduling timeline. |
| Gene Nowak | | | Kinder Morgan | WGQ Pipeline | S | 1 | § Commenters support this recommendation and provide the following comments: § The most reliable method for a Shipper to utilize its contractual firm transportation capacity is to nominate that capacity according to NAESB’s Timely Cycle. This is due to FERC policy that firm contract capacity previously scheduled cannot be bumped in a subsequent NAESB Intraday Cycle by another firm contract of any type. The NAESB Timely Cycle is the only standardized cycle that completely starts over from a scheduling perspective each day. § On average approximately 85% of the deliveries on commenters major pipelines are to customers other than gas-fired generators. Therefore, it seems logical and beneficial to natural-gas fired generators and others, to adjust the Electric Market Design scheduling practices so that market clearing times, the issuance of day-ahead awards, and the dispatching of generators occur prior to the NAESB Timely Cycle nomination deadline without impacting the vast majority of non-electric generation customers.  § Without these adjustments, a Shipper trying to utilize nomination opportunities subsequent to the NAESB Timely Cycle cannot be certain that the transportation capacity it needs to receive/deliver gas supply to a gas-fired generator will be available. The Shippers contractual capacity could have already been made available and scheduled by another Shipper transporting gas via a firm contract, nominated and scheduled via the NAESB Timely Cycle, and utilizing segment and/or point capacity that is secondary in path or secondary out of path. § Since this is directly related to electric reliability, this could be assigned to NERC for further discussion and prioritization of potential Electric Market Design adjustments. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S |  | Getting the generators to not have to guess their dispatch and know how much gas they need is a good thing in general. In an emergency, it could help make sure gas gets to where it is needed by avoiding guessing error. |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | S | 5 | Both electric and gas market clearing times should be considered through stakeholder processes by the RTOs, Gas Pipelines (inter and intra state), and other gas consumers. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S | 3 | This is an issue in certain markets, and thus may need to be addressed on a regional basis as different markets have different scheduling timelines which generators support and may, in fact, utilize in order to manage a multi-regional fleet. Any recommendation must ensure against dropping to the “least common denominator” problem. This may implicate questions regarding the power day timing itself and whether it could be adjusted to capture the morning and evening peaks in one gas day. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 1 | There clearly needs to be work on enhancing liquidity and transparency of secondary release and commodity on weekends and holidays as those days have been the ones where persistent challenges remain. |

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| **1.** | **Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies** | | | | | | |
|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | |
|  |  | *Recommendation 7* | *Electric Market Design – Consider the use of multi-day clearing processes during and/or in advance of extreme weather events.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | S | 1 | A three or five day ahead market if certain criteria are met (with cost recovery if a generator’s offer is accepted) is one of the best solutions to ensure gas procurement for generators during critical periods. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 7 | 1. In Electric Market Design, use multi-day clearing processes in advance of predicted extreme weather events and provide cost recovery if the projected event does not occur. |
| Gene Nowak | | | Kinder Morgan | WGQ Pipeline | S | 3 | § Commenters support giving notice to the power generation markets of upcoming daily requirements so they participate fully in the gas market for extended days if they choose to enhance their reliability instead of a day-by-day determination. Waiting until the last minute limits the flexibility.  § Since this is directly related to electric reliability, this could be assigned to NERC for further discussion and prioritization of potential Electric Market Design adjustments. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | S |  | support but this design element should comtemplate forward commitments (before gas market for applicable days open) |
| Catherine Elder | | | Aspen Environmental Group | Observer |  |  | Don’t have a good sense of whether this is useful or not. |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | S | 5 | Already underway or in place within organized electricity markets. For those in place, it may not alter outcomes during extreme weather when gas is not available. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | This is a valid issue but because each RTO market design is unique, this issue is best addressed in each stakeholder process, perhaps informed by some general themes and observations in this process. |

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| **1.** | **Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies** | | | | | | |
|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | |
|  |  | *Recommendation 8* | *Electric Market Design - Consider if natural gas-fired generators should be required to purchase bundled packages of fuel transport and supply.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | S |  | Generators should be encouraged/incented to hold a reliable diverse portfolio but not required to purchase such a very specific market product as stated here. Compensation mechanisms to support these options, including the need for more gas infrastructure, should be considered. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | O |  | 1. Educate gas fired generators on the options in purchasing supply and transport.  Discussion: There are some gas fired generators that do an excellent job of competitive acquisition of supply and transport. This may be an education opportunity but should not result in policy or standards. |
| Paul Hughes | | | Southern Company | WEQ Generator | S | 1 | Southern Companies are supportive of policies that enhance reliability of electric generation. We note that Southern Companies already have policies like those described to ensure that generation is backed by firm fuel supply. Having additional utilities embrace similar policies will increase reliability and resiliency across a broader area and enhance emergency assistance capabilities. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | The option is already available to customers. We do not support any type of regulatory mandate for such purchases |
| Catherine Elder | | | Aspen Environmental Group | Observer | S | 8 | No objection from me – comments elsewhere I noted that the purchase strategy typically depends on whether one is an independent generator versus part of a utility with ratepayer recovery not bidding into an RTO – so only support if this is accompanied by cost recovery guarantee. And then would generators who did not purchase the firm supply and transport not be awarded dispatch orders? |
| Michele Richmond | | | Texas Competitive Power Advocates (TCPA) | WEQ Generator | O |  | TCPA does not support this recommendation as stated. Requiring the purchase of bundled supply would consolidate market power that many pipelines already have over generators by eliminating the competitive discipline that should be brought to bundled gas service by the ability to contract for fuel and transportation separately or together. TCPA would only consider accepting this recommendation if ISO/RTO market rules provided for full cost recovery of such requirements. |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | O |  | Additional purchase requirements would not address the issue of lack of fuel that was experienced during Uri & Elliott. Force majeure could continue to eliminate any benefit gained from the purchase of said services and result in increased costs for no benefit. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | It is important that natural gas capacity resources are able to deliver both transport and supply when called upon, the NAESB process should not require that they necessarily need to be ‘bundled’ to achieve this end. |

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|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | |
|  |  | *Recommendation 9* | *Electric Market Design – Consider if there are mechanisms, such as modifications to credit and collateral practices, to better promote diversification of natural gas suppliers, especially during an extreme event.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | S | 4 | Different generators procure supply in different ways – some are “open” on ICE and have NAESB gas sales contracts and credit in place. Others rely on a single fuel supplier to procure supply. The second category are not able to procure supply on ICE since they do not have their own NAESB gas sales contracts and credit arrangements in place to transact with multiple market suppliers. It is especially important for generators to have credit approved with ICE and multiple suppliers and to have gas purchase agreements already in place in advance to have viable options during critical events. The forum should also consider whether RTOs could cover collateral for their generators to the pipelines or suppliers. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | O |  | Discussion: Whose problem is this trying to solve? In the case of market driving pricing, marketers have provided creative solutions to credit and collateral issues in order to keep their clients with gas flowing. This includes daily and weekly payments withing the credit limit. These types of solutions should be service offerings and outside of standardization. |
| Paul Hughes | | | Southern Company | WEQ Generator | S |  | Southern Companies are supportive of policies that enhance reliability of electric generation. We note that Southern Companies already have policies like those described to ensure that generation is backed by firm fuel supply. Having additional utilities embrace similar policies will increase reliability and resiliency across a broader area and enhance emergency assistance capabilities. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | S |  | support but not a priority |
| Catherine Elder | | | Aspen Environmental Group | Observer |  |  | No idea if there is anything useful to this concept or not. Do we need greater diversification of gas suppliers during an extreme event? Would different credit and collateral allow a generator to buy from an LDC or from an industrial customer more quickly during an extreme event? If so, then this is a good idea. |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | O |  | Markets are designed and implemented to be fuel agnostic. Creating classes of generation could be seen as subsidizing specific generation types. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | Credit and collateral practices of RTOs protect customers from default of load serving entities or generators. Those practices are not particularly germane to ‘promoting diversification of natural gas suppliers’ as RTOs are examining the creditworthiness of the generator or load serving entity and not their upstream suppliers. |

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|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | | |
|  |  | *Recommendation 10* | | *Consider hourly reporting of price formation during the gas day.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | | WGQ Producer | O |  | Generators and RTOs can undertake price discovery on ICE. FERC has explored price reporting and price formation and settled on a process as dictated in their Policy Statement, which promotes daily reporting. FERC is doing what it can to encourage more daily reporting. Adding the ICE data has helped with daily index price formation but adding hourly reporting would be too onerous and discourage reporting. Nothing structurally prevents a generator from agreeing to purchase gas at a fixed price if they need to reduce price risk. |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | O |  | Discussion: Who would be the entity to provide this data. Pipelines are not involved in the pricing of gas. The price of the gas transportation is already disclosed in the Capacity Release Award process. That is the pipeline’s only involvement in pricing. |
| Paul Hughes | | | Southern Company | | WEQ Generator | O |  | Price reporting during the day already exists on the ICE platform. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | Not feasible. Some price transparency already available through electronic platforms like ICE. |
| Catherine Elder | | | Aspen Environmental Group | | Observer |  |  | Oppose as written: I don’t know if it has to be hourly today so much as by nomination period. With more renewables over time and more ramping of gas in those late afternoon hours, hourly prices may become more important. But the only way more gas gets into the system now is by somebody who has storage that supports balancing service. Would hourly pricing help create a price signal such that investors would build more LNG needle peakers or ways to change gas flow during the day? Maybe, and that would indeed be a good thing. But what would drive the hourly price changes if nobody can then act on that information and to act they need storage. |
| Michele Richmond | | | Texas Competitive Power Advocates (TCPA) | | WEQ Generator | O |  | Reporting of hourly price formation is unnecessary. Electric market price formation is very transparent, and the information available on interstate pipelines is robust. Price formation is not the issue, and requiring transparent information on the activity on intrastate pipelines with flows, capacity, any constraints or curtailments and other operational issues that affects the ability to deliver gas to power plants is what is needed. Since this recommendation does nothing to address those issues, and price formation is not the concern, TCPA opposes this recommendation. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | | WGQ End User | O |  | AF&PA/PGC oppose additional reporting requirements that will increase costs with no demonstrated benefits. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | O |  | Recommendation is not clear. Price formation in RTO markets is very transparent on both a day ahead and real time basis. We do support enhanced and more granular reporting of gas pricing similar to RTO published LMP prices. |

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|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | | |
|  |  | *Recommendation 11* | | *Consider the development of FERC transactional reporting requirements for intraday transactions similar to timely cycle transactional reporting requirements.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | | WGQ Producer | O |  | Same as #10 |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | O |  | Discussion: In regard to natural gas reporting, Timely and Intraday Cycles are reported in the exact same way. Unless there is more information to this recommendation, there is no change necessary. |
| Catherine Elder | | | Aspen Environmental Group | | Observer |  |  | Yes please. Would increase transparency, assuming that the timely cycle reporting requirements are actually sufficient. |
| Michele Richmond | | | Texas Competitive Power Advocates (TCPA) | | WEQ Generator | O |  | Adding FERC transactional reporting requirements does not address the issues impacting reliability and consumer costs. The issues are with intrastate pipelines, which are not FERC jurisdictional, not interstate pipelines. This recommendation does nothing to address the issues the forum is attempting to remedy, and therefore, TCPA opposes this recommendation |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | | WGQ End User | O |  | AF&PA/PGC oppose additional reporting requirements that will increase costs with no demonstrated benefits. |

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|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | | |
|  |  | *Recommendation 12* | | *New Pipeline Service Offerings – Consider new pipeline services that could provide greater flexibility for natural gas-fired generators by offering alternatives to traditional offerings (e.g. year-round firm service), such as new firm transportation and storage options and/or premium capacity services tailored to accommodate daily winter peak periods.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | | WGQ Producer | S | 6 | Examples include services such as non-ratable services, expanded no-notice and storage services. In many cases, infrastructure may be required to provide these services and the flexibility needed by generators. AMAs would help defray reservation charges. |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | O |  | Discussion: Many pipelines offer seasonal MDQs for storage and transportation. These service offerings are negotiated with customers during tariff filings. If this is to be a requirement for all pipelines to offer then it should a) be resolved by FERC policy and b) be required of intrastate and utility transporters. |
| Paul Hughes | | | Southern Company | | WEQ Generator | S | 4 | Any new pipeline service offerings would need to be available to all shippers and not just gas generators. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | These services already exist. Support the notion, but this isn’t a problem that needs to be solved with this forum. |
| Rachel Hogge | | | BHE GT&S | | WGQ Pipeline | S | 5 | Pipelines can offer tailored services to generators that include non-ratable flows if the pipelines have capacity or if the generators execute precedent agreements that would support the system modifications necessary to be able to offer an expansion of capacity. Many pipelines do offer such services when those conditions are met. See INGAA Response to Question 3 of GEH Forum Survey for Nov. 8 Meeting. Ultimately, shippers must be willing to pay for these services and the increased flexibility that they provide. |
| Matthew Agen | | | American Gas Association | | WGQ Distributor | O |  | AGA supports the development and marketing of incremental (and more flexible) capacity and commodity services to ALL natural gas shippers, not just natural gas‐fired generators. Electric generators should not get services that are not available to anyone. The system in general shouldn’t subsidize one group getting special treatment on peak days. Moreover, this should be left up to the pipelines to manage. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S | 9 | Pipelines can do this today. But again, they need storage in order to deliver those kinds of services and need an attitude more like my old friends at Union Gas (see comment on question 20). |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | | WGQ End User | O |  | Seasonal gas and other peak shaving services exist. In terms of new pipeline service alternatives to the traditional peak service, AF&PA and PGC note that seasonal and peak shaving services are available under some pipelines’ tariffs already |
| Nancy Bagot | | | Electric Power Supply Association | | WEQ Generator | N/A |  | These are commercial products to be developed and sold via private transactions. |
| Christopher Smith | | | INGAA | | WGQ Pipeline | S | 5 | Pipelines can offer tailored services to generators that include non-ratable flows if the pipelines have capacity or if the generators execute precedent agreements that would support the system modifications necessary to be able to offer an expansion of capacity. Many pipelines do offer such services when those conditions are met. See INGAA Response to Question 3 of GEH Forum Survey for Nov. 8 Meeting. Ultimately, shippers must be willing to pay for these services and the increased flexibility that they provide. |
| Kim Van Pelt | | | Boardwalk | | WGQ Pipeline | S | 5 | Pipelines can offer tailored services to generators that include non-ratable flows if the pipelines have capacity or if the generators execute precedent agreements that would support the system modifications necessary to be able to offer an expansion of capacity. Many pipelines do offer such services when those conditions are met. See INGAA Response to Question 3 of GEH Forum Survey for Nov. 8 Meeting. Ultimately, shippers must be willing to pay for these services and the increased flexibility that they provide. |
| Steven McCord | | | TC Energy Corporation | | WGQ Pipeline | S | 5 | Pipelines can offer tailored services to generators that include non-ratable flows if the pipelines have capacity or if the generators execute precedent agreements that would support the system modifications necessary to be able to offer an expansion of capacity. Many pipelines do offer such services when those conditions are met. See INGAA Response to Question 3 of GEH Forum Survey for Nov. 8 Meeting. Ultimately, shippers must be willing to pay for these services and the increased flexibility that they provide. |
| Christopher Burden | | | Enbridge | | WGQ Pipeline | S | 5 | Pipelines can offer tailored services to generators that include non-ratable flows if the pipelines have capacity or if the generators execute precedent agreements that would support the system modifications necessary to be able to offer an expansion of capacity. Many pipelines do offer such services when those conditions are met. See INGAA Response to Question 3 of GEH Forum Survey for Nov. 8 Meeting. Ultimately, shippers must be willing to pay for these services and the increased flexibility that they provide. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 1 | As noted previously, new tailored services should be explored that, although expensive, could provide alternatives to generators having to enter into year long firm agreements. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S |  | As previous iterations of NAESB’s GEH efforts have concluded, changes to gas market scheduling are not appropriate solutions to the issues facing the energy industry. However, APGA is not opposed to the development of new pipeline services (Recommendations 12-13), so long as it does not impact our members existing natural gas supply contracts. |

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|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | | |
|  |  | *Recommendation 13* | | *New Pipeline Service Offerings – Consider the development of specific tariff services for natural gas pipeline capacity during critical weather events.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | | WGQ Producer | S |  | NGSA supports consideration of these services only with the understanding that costs must be appropriately allocated and should not result in other customers subsidizing costs of this pipeline capacity. |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | O |  | Discussion: Many pipelines offer seasonal MDQs for storage and transportation. These service offerings are negotiated with customers during tariff filings. If this is to be a requirement for all pipelines to offer then it should a) be resolved by FERC policy and b) be required of intrastate and utility transporters. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | This type of service might be beneficial, but do not see that this is a problem that needs to be solved through this forum. |
| Matthew Agen | | | American Gas Association | | WGQ Distributor | O |  | This already exists and should be left to the market to decide what is necessary, not mandated. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S |  | Same comment 1.C.12 |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | | WGQ End User | O |  | End users have contracted for firm service under existing tariffs for critical weather events. AF&PA and PGC oppose creating new tariff services for critical weather events that would take away their rights to the current firm transportation services which they have already contracted for, and paid for, to ensure reliable services for their plants during critical weather events. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S |  | As previous iterations of NAESB’s GEH efforts have concluded, changes to gas market scheduling are not appropriate solutions to the issues facing the energy industry. However, APGA is not opposed to the development of new pipeline services (Recommendations 12-13), so long as it does not impact our members existing natural gas supply contracts. |

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|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | | |
|  |  | *Recommendation 14* | | *Consider methods to encourage market engagement that will provide more liquidity to the natural gas market and better support natural gas purchasing outside of the timely nomination cycle. These mechanisms could include the utilization of price signals that induce natural gas sellers to hold reserve for release and/or ensure the availability of physical assets capable of providing natural gas to accommodate unplanned flows which can be used to encourage market engagement.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | NA | 4 | Discussion: If this recommendation is to encourage reporting, aggregation and dissemination of data related to Comment A, then the market will drive it. Is the recommendation to require marketers to report pricing? Need more information. |
| Paul Hughes | | | Southern Company | | WEQ Generator | O |  | We do not believe market friction or liquidity is creating supply issues. In our view, gas markets are mature and where available, storage is being utilized. It is doubtful these actions will increase supply availability. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | Could be helpful, but is regulatory/policy action needed? |
| Matthew Agen | | | American Gas Association | | WGQ Distributor | O |  | This already exists. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S | 4 | Generators still would need a way to recover the cost of those options from their RTO. |
| Joshua Phillips | | | Southwest Power Pool | | WEQ Independent Grid Operator & Planner | S | 5 | During emergency periods, increased confirmation frequency may increase liquidity. It should be evaluated if requiring hourly confirmations would allow additional release by those who may have previously scheduled for an extended period, but are no longer utilizing that capacity. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 1 | Additional transparency and price signals would, as they did in the utilization of the transmission system, lead to more efficient pricing and utilization of scarce pipeline capacity. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S |  | APGA is also supportive of methods to encourage market liquidity (Recommendation |

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| **1.** | **Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies** | | | | | | | |
|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | | |
|  |  | *Recommendation 15* | | *Consider the creation of a 24/7 natural gas market for critical weather events.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | | WGQ Producer | NA |  | We do not understand what this recommendation entails. Gas industry personnel are available around the clock and staffed during critical events. |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | O |  | The natural gas market is already a 24/7 workplace. |
| Paul Hughes | | | Southern Company | | WEQ Generator | O |  | We do not believe market friction or liquidity is creating supply issues. In our view, gas markets are mature and where available, storage is being utilized. It is doubtful these actions will increase supply availability. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | S |  | The market is already theoretically open 24/7, although we support the notion of more flexibility on weekends. |
| Matthew Agen | | | American Gas Association | | WGQ Distributor | O |  | This already exists via the regular market process and enhanced informally by stakeholder communications |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S | 2 | Needs to become 24/7 in general, regardless of weather, recognizing that liquidity after timely nominations may thwart this intent and that bigger LDCs are sufficient elephants that they get 24/7 service already. Or (like this is easy) do we just need to designate an after-hours market-maker? More (expensive) LNG needle peakers? Winterizing wells would be cheaper. |
| Joshua Phillips | | | Southwest Power Pool | | WEQ Independent Grid Operator & Planner | S | 5 | During emergency periods, increased confirmation frequency may increase liquidity. It should be evaluated if requiring hourly confirmations would allow additional release by those who may have previously scheduled for an extended period, but are no longer utilizing that capacity. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 1 | See above re: increasing liquidity of weekend options.There should be daily and not just periodic nomination cycles and tailored commodity products available during these events. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | O |  | APGA questions the effectiveness of such methods, or even the creation of a 24/7 natural gas market for critical weather event (Recommendation 15), as it is clear there is not sufficient supply capacity in cases where significant intermittent generation sources fall off-line or when supply is impacted by adverse weather events. Accordingly, the costs to implement such recommendations are likely not warranted at this time. |

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|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | | |
|  |  | *Recommendation 16* | | *Information Sharing – Consider if additional details should be provided by natural gas pipelines regarding actual gas flow.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | | WGQ Producer | O |  | Actual flows do not provide any additional fuel assurance for generators because pipelines operate flows based on contractual commitments and nominations. Also, real-time flow data can be commercially sensitive and divulge activity in the physical market before it can be hedged. |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | S |  | 1. Convert contents of system wide notices to a digital format instead of a text format to enhance the ability to process the data.   The transformation of critical and system wide notices from a text-based posting to a digitalized version would be beneficial here to enable processing and aggregation of the notices. |
| Paul Hughes | | | Southern Company | | WEQ Generator | S | 3 | As noted in previous answers we are supportive of actions that increase the sharing of critical information. However, as previously noted, timeliness, data quality, and depth of information should be prioritized as posting information after the market has traded provides little value. Additionally, any increase in information visibility should not only be limited to RTOs/ISOs. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | S |  | Additional information about activity on intrastate natural gas pipelines is needed to provide adequate market transparency. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S | 5 | Is there really a competitive reason why flows are not posted? Some of the pipeline websites offer a visual on where constraints are on their system or how much capacity remains available on a given day. This information is really very very helpful in assessing reliability impacts and allowing shippers to visualize potential alternate routes to their intended market load. From that data one can infer flows if one knows what the nominal rated capacity was and about any force majeure events or maintenance events. Posting the flows would eliminate the need for that mental math. |
| Michele Richmond | | | Texas Competitive Power Advocates (TCPA) | | WEQ Generator | S | 2 | TCPA believes that interstate pipelines already provide sufficient actual flow data on their electronic bulletin boards. Intrastate pipelines and storage operators should be required to post actual flow data similar to how interstate pipeline and storage operators report their capacity utilization. |
| Joshua Phillips | | | Southwest Power Pool | | WEQ Independent Grid Operator & Planner | S | 10 | Along with enhancements to notifications and communications in question 1, increasing transparency should be a priority for gas and electric market transactions. |
| Nancy Bagot | | | Electric Power Supply Association | | WEQ Generator | S | 6 | Intrastate pipelines should be required to post more transparent data, akin to what is posted by interstate pipelines on EBBs. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S |  | Finally, as discussed above, APGA is generally supportive of additional information sharing (Recommendations 16-26, 28-29), so long as it is available to all market participants and costs are allocated appropriately. |

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|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | | |
|  |  | *Recommendation 17* | | *Information Sharing – Consider the development of standardized information sharing practices for ISOs/RTOs and natural gas pipelines, to provide a more robust, wide-area view of system operations.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | S | 2 | 1 NAESB should create standards for the exchange of the identified information as well as rules for timing and technology.   This is one of the most important recommendations. It complements the recommendations listed in Comment A and should be considered in concert. |
| Paul Hughes | | | Southern Company | | WEQ Generator | O |  | As noted in previous answers we are supportive of actions that increase the sharing of critical information. However, as previously noted, timeliness, data quality, and depth of information should be prioritized as posting information after the market has traded provides little value. Additionally, any increase in information visibility should not only be limited to RTOs/ISOs. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | Information sharing is already occurring. We do not believe a solution needs to be driven by this forum. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S | 7 | PJM and ISONE and CAISO engage in detailed communication with the gas pipelines now. Not clear to me that it needs to be standardized, per se. Having said that, I think a lot of folks in the West focused on California missed that Northwest Pipeline was having trouble with constraints all over its system around Thanksgiving as folks tended to focus on the pipelines that deliver to California and ignored Northwest Pipeline because it does not deliver gas to California. |
| Joshua Phillips | | | Southwest Power Pool | | WEQ Independent Grid Operator & Planner | S | 10 | As indicated in responses to improving information sharing above, gas transactions should be shared with RTOs during extreme conditions when the need for additional certainty around fuel delivery is needed. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 2 | This could be helpful to build on FERC Order 787 information sharing protocols. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S |  | Finally, as discussed above, APGA is generally supportive of additional information sharing (Recommendations 16-26, 28-29), so long as it is available to all market participants and costs are allocated appropriately. |

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| **1.** | **Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies** | | | | | | | |
|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | | |
|  |  | *Recommendation 18* | | *Information Sharing – Consider if there is a need for additional guidance regarding the impact of FERC’s duty of candor rule and the types of information shared as part of coordination communications under FERC Order No. 787.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | Do not see this as an issue that needs to be addressed through this forum. |
| Catherine Elder | | | Aspen Environmental Group | | Observer |  |  | I am not familiar with the Duty of Candor rule. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | | WGQ End User | S | 1 | Rule will hinder open communication in emergency. |
| Joshua Phillips | | | Southwest Power Pool | | WEQ Independent Grid Operator & Planner | S | 5 | Additional requirements for RTO/ISO, pipeline, and generator information sharing could reduce barriers to communication. Particularly around confidential or market sensitive data. |
| Nancy Bagot | | | Electric Power Supply Association | | WEQ Generator | O |  | If based on requirements in FERC’s proposed new Duty of Candor rule, EPSA opposes to the extent that we and many stakeholders have protested the NOPR as issued by the Commission. |
| Rachel A. Hogge | | | BHE GT&S | | WGQ Pipeline | S |  | INGAA strongly supports exclusion of communications between natural gas pipelines and RTOs/ISOs pursuant to FERC Order No. 787 from any proposed duty of candor. If FERC imposes the proposed duty of candor, the risk of an enforcement action and, ultimately, penalties will deter pipelines from communicating with RTOs/ISOs and undermine the goals of the GEH Forum. |
| Christopher Smith | | | INGAA | | WGQ Pipeline | S |  | INGAA strongly supports exclusion of communications between natural gas pipelines and RTOs/ISOs pursuant to FERC Order No. 787 from any proposed duty of candor. If FERC imposes the proposed duty of candor, the risk of an enforcement action and, ultimately, penalties will deter pipelines from communicating with RTOs/ISOs and undermine the goals of the GEH Forum. |
| Kim Van Pelt | | | Boardwalk | | WGQ Pipeline | S |  | INGAA strongly supports exclusion of communications between natural gas pipelines and RTOs/ISOs pursuant to FERC Order No. 787 from any proposed duty of candor. If FERC imposes the proposed duty of candor, the risk of an enforcement action and, ultimately, penalties will deter pipelines from communicating with RTOs/ISOs and undermine the goals of the GEH Forum. |
| Steven McCord | | | TC Energy Corporation | | WGQ Pipeline | S |  | INGAA strongly supports exclusion of communications between natural gas pipelines and RTOs/ISOs pursuant to FERC Order No. 787 from any proposed duty of candor. If FERC imposes the proposed duty of candor, the risk of an enforcement action and, ultimately, penalties will deter pipelines from communicating with RTOs/ISOs and undermine the goals of the GEH Forum. |
| Christopher Burden | | | Enbridge | | WGQ Pipeline | S |  | INGAA strongly supports exclusion of communications between natural gas pipelines and RTOs/ISOs pursuant to FERC Order No. 787 from any proposed duty of candor. If FERC imposes the proposed duty of candor, the risk of an enforcement action and, ultimately, penalties will deter pipelines from communicating with RTOs/ISOs and undermine the goals of the GEH Forum. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | O |  | Not seeing the direct connection to the duty of candor rule. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S |  | Finally, as discussed above, APGA is generally supportive of additional information sharing (Recommendations 16-26, 28-29), so long as it is available to all market participants and costs are allocated appropriately. |

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|  |  | *Recommendation 19* | | *Information Sharing – Consider the development of a mechanism by which generators can provide timely notice to regional operators regarding potential issues that may impact operations, including the sourcing of natural gas, such as possible reductions in firm supply or transportation commitments.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | S | 10 | 1. NAESB should create standards for the exchange of timely critical information between generators and regional operators using the same mechanisms described in Comment A.  Discussion: This recommendation should apply to both generators and regional operators. Both should share their knowledge with all effected parties. |
| Paul Hughes | | | Southern Company | | WEQ Generator | S | 8 | The Southern Balancing Authority already has communication protocols in place to operate the system effectively and efficiently. This visibility into the supply chain is a benefit of a vertically integrated system. |
| Gene Nowak | | | Kinder Morgan | | WGQ Pipeline | S | 3 | § Commenters support this recommendation with the following suggestions: § A mechanism could be developed for generators that supports the creation and upload of a critical notice (similar to what is provided by interstate pipelines to their customers) to regional operators. There should be a standardized format that accommodates easily indicating potential issues that may impact its operations, including the sourcing of its natural gas, such as possible reductions in its firm supply or scheduled transportation capacity. § This could be added to NAESB’s Annual Plan for the WEQ quadrant and prioritized as appropriate. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | This is already a feature of most organized markets. Do not see a need for this. Where we have seen problems with gas production with no or limited notice of suspension of gas production. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S |  | The reference to regional operators means pipeline operators? Yes, sounds like it would help pipelines to know if somebody is not going to use their gas or capacity. Though, at what point in the day? Harbinger of the ‘no-bump’ rule. But maybe shift the idea so that generators inform the pipeline once they know for sure? Or does this mean ISO/RTO operators? But how is it possible they do not have a duty to do that today? |
| Joshua Phillips | | | Southwest Power Pool | | WEQ Independent Grid Operator & Planner | O |  | These mechanisms exist today and occur during normal and emergency operations. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | O |  | These requirements already exist in RTO markets. Additional information from gas commodity suppliers and the secondary market for capacity release would help inform the information generators provide although it should be clear they are already obligated to provide this updated information to RTO dispatch. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S |  | Finally, as discussed above, APGA is generally supportive of additional information sharing (Recommendations 16-26, 28-29), so long as it is available to all market participants and costs are allocated appropriately. |

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|  |  | *Recommendation 20* | *Information Sharing – Consider the development of communication coordination protocols for natural gas pipeline operators and shippers to convey information regarding overtakes in order to help avoid operational flow orders and curtailments. This may include the ability of natural gas end users to be able to provide equipment information that can be used to help identify potential demand reductions.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | O |  | This information would not be reliable to provide as the information gathered in a real-time manner is an estimate. If end users are required to provide equipment, then the quality of this information would be improved, though still an estimate. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | S |  | Pipelines assume that flow will occur ratably over 24 hours; however, generation comes on and off-line during the day. Generators could communicate projected hourly flows giving pipelines better operational info before declaring curtailments. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | This already exists. AGA opposes additional protocols, as it would be redundant. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S |  | So if I am going to over take, we’re talking about a need to inform the pipeline? I should do that already. I recall ( Gas in Ontario telling me if they had the resources (and with their storage facilities they almost always would) they would let a shipper or generator overpull and the charge would be a penny per MMBtu. That was a long time ago, but the point is that it was the pipeline’s resources AND its attitude that provided flexibility if it helped a shipper/generator. Not sure what the reference to ‘equipment information’ here means. Now, there is a graphic PG&E posts on its Pipe Ranger website (https://www.pge.com/pipeline/index.page) that shows the high and low acceptable range for linepack and where they expect to fall in that range every single day. This graphic is very helpful in knowing whether the system is in or expects to be an over-take versus under-take situation and the pipeline’s limits on how big an imbalance it can tolerate. |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | S | 5 | To the extent not done today, this should be explored. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 4 | These could be helpful measures to improve liquidity during critical periods. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S |  | Finally, as discussed above, APGA is generally supportive of additional information sharing (Recommendations 16-26, 28-29), so long as it is available to all market participants and costs are allocated appropriately. |

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|  |  | *Recommendation 21* | | *Information Sharing – Consider the development of information sharing protocols between natural gas-fired generators and natural gas pipelines, such as natural gas facility information and/or mechanisms to provide information regarding expected hourly takes by natural gas-fired generators that could be used to create a baseline for allocating capacity during periods of constrained demand.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | | WGQ Producer | O |  | While NGSA supports improved information sharing to the market on hourly takes, pipelines have no authority to reallocate capacity based on anything other than contracts and nominations. Prioritization is based on contractual commitments and to do otherwise would discourage pipeline contracting. Also, pipelines cannot provide special treatment to one set of customers over others. |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | S |  | Actions:  1: NAESB develop standards and datasets for the information to be exchanged.  2: Industry participants either develop commercial solutions or group together to develop solutions relevant to their groups’ business interest. 3: Information available should be able to be subscribed to by any interested party.  Discussion: All referenced recommendations call for development of one or more commercial applications where industry participants can provide information for analysis of gas and power performance and availability as well as utilize the available data for access to analytics. This digitalization of a large quantity of data would provide insight into the market place, by participant role, that is requested in this list of recommendations. This commercial application should be a venture sponsored and developed by industry participants or independent software providers and available on a subscription or per-use basis.  NAESB’s responsibility in this would be to identify the data needed, the timing upon which it is provided, and the datasets for the information to be provided. NAESB would also develop related standards on data timing, quality, etc, as NAESB has done so well in other circumstances. Additionally the NAESB EDM subcommittee would evaluate any efficiencies and improvements to be used in exchange of this information.  The data provided by participants should be available to anyone (including commercial applications) who wants to subscribe to such data such as the Interstate Pipeline’s provision of system wide notices and capacity release today. (I believe publicly available, not sure). NAESB should not be the aggregator and distributor of this data. For NAESB to do this would discourage commercial development of analytic tools based on the data and would be a liability for NAESB in a whole new business channel.  The decision to require the data and the timeline for the data to be provided is up to the regulatory body governing that industry participant. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | This might provide some value, but believe that the market can solve this issue. Do not see this as an issue to be addressed through this forum. |
| Matthew Agen | | | American Gas Association | | WGQ Distributor | O |  | This appears as suggesting special treatment for natural gas fired generators who instead should be required to contract for firm capacity. Electric generators should not receive services that are not available to anyone. The system in general should not subsidize one group getting special treatment on peak days. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S |  | I like this. I would have thought it would be part of the platform or facilitation concept in Question 2. Though I don’t know if it is simply a protocol that needs developing versus a requirement to share a specific list of information (akin to my starter list for question 22). Now, is a list the same as a protocol? Maybe. I can also see some idea a generator might be somewhat reluctant to tell a pipeline too much because it might reduce its negotiating leverage on special tariffs or whatnot. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | | WGQ End User | O |  | AF&PA and PGC oppose any recommendation to reallocate or curtail deliveries of the firm gas supply and firm transportation services that they contracted for, and pay for, to ensure reliable service to their plants to provide delivery of natural gas to generators who did not contract for such services. There is no legal basis for taking away our firm contractual rights to our gas supply and transportation services. If gas-fired generators need to be relied upon by the operators of the electric grid for reliable electric services, the FERC and NERC should require generators have reliable gas supply and transportation on peak days. |
| Joshua Phillips | | | Southwest Power Pool | | WEQ Independent Grid Operator & Planner | S | 5 | To the extent not done today, this should be explored. |
| Nancy Bagot | | | Electric Power Supply Association | | WEQ Generator | O |  | The method and substance of communications between customers and their service providers should not be dictated by regulators. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 1 | This additional real time exchange of information would be most helpful. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S |  | Finally, as discussed above, APGA is generally supportive of additional information sharing (Recommendations 16-26, 28-29), so long as it is available to all market participants and costs are allocated appropriately. |

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|  |  | *Recommendation 22* | | *Information Sharing – Consider if there should be information sharing requirements between retail gas utilities and any natural gas-fired generation those utilities serve.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | S |  | Actions:  1: NAESB develop standards and datasets for the information to be exchanged.  2: Industry participants either develop commercial solutions or group together to develop solutions relevant to their groups’ business interest. 3: Information available should be able to be subscribed to by any interested party.  Discussion: All referenced recommendations call for development of one or more commercial applications where industry participants can provide information for analysis of gas and power performance and availability as well as utilize the available data for access to analytics. This digitalization of a large quantity of data would provide insight into the market place, by participant role, that is requested in this list of recommendations. This commercial application should be a venture sponsored and developed by industry participants or independent software providers and available on a subscription or per-use basis.  NAESB’s responsibility in this would be to identify the data needed, the timing upon which it is provided, and the datasets for the information to be provided. NAESB would also develop related standards on data timing, quality, etc, as NAESB has done so well in other circumstances. Additionally the NAESB EDM subcommittee would evaluate any efficiencies and improvements to be used in exchange of this information.  The data provided by participants should be available to anyone (including commercial applications) who wants to subscribe to such data such as the Interstate Pipeline’s provision of system wide notices and capacity release today. (I believe publicly available, not sure). NAESB should not be the aggregator and distributor of this data. For NAESB to do this would discourage commercial development of analytic tools based on the data and would be a liability for NAESB in a whole new business channel.  The decision to require the data and the timeline for the data to be provided is up to the regulatory body governing that industry participant. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | The market can already accommodate such information sharing if needed. Do not see this as an issue to be addressed through this forum. |
| Matthew Agen | | | American Gas Association | | WGQ Distributor | O |  | AGA does not support this recommendation. To the extent that this is determined to be helpful, it should be an option for the parties to collaborate on and not a requirement. Furthermore, this is for state commissions to decide and should not be federally mandated. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S |  | Oh if they are not communicating, that is bad. They at least need open, two-way communication. To put some color on this, we need a list of the required information. Demand conditions for both sectors. Any operating problems known. Any anticipated. Anticipated hourly gas burn and anticipated imbalance. Just a start. The generator and LDC might discuss reliability of supply and upstream transportation and at what demand level the LDC will become constrained. |
| Joshua Phillips | | | Southwest Power Pool | | WEQ Independent Grid Operator & Planner | S | 5 | To the extent not done today, this should be explored. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 1 | FERC Order 787 did not address this issue but generation on LDC systems behind the city gate are equally important as generation on the pipeline system so information sharing between LDCs and RTOs should be the norm. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S |  | Finally, as discussed above, APGA is generally supportive of additional information sharing (Recommendations 16-26, 28-29), so long as it is available to all market participants and costs are allocated appropriately. While supportive of the concept, APGA believes that any retail gas utility servicing a natural gas-fired generator will already be having regular communications with each other (Recommendation 22). In fact, several APGA members are combo utilities that also own and operate their own electric distribution utility that receives energy from behind the city gate natural gas-fired generation. These systems have been handling tricky supply issues with this unique situation for years and can be a valuable resource in planning discussions. |

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|  |  | *Recommendation 23* | | *Information Sharing – Consider the use of best practices for electric system operators to better assimilate, on a regional level, data shared by natural gas pipelines.* | | | | |
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| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | S |  | Actions:  1: NAESB develop standards and datasets for the information to be exchanged.  2: Industry participants either develop commercial solutions or group together to develop solutions relevant to their groups’ business interest. 3: Information available should be able to be subscribed to by any interested party.  Discussion: All referenced recommendations call for development of one or more commercial applications where industry participants can provide information for analysis of gas and power performance and availability as well as utilize the available data for access to analytics. This digitalization of a large quantity of data would provide insight into the market place, by participant role, that is requested in this list of recommendations. This commercial application should be a venture sponsored and developed by industry participants or independent software providers and available on a subscription or per-use basis.  NAESB’s responsibility in this would be to identify the data needed, the timing upon which it is provided, and the datasets for the information to be provided. NAESB would also develop related standards on data timing, quality, etc, as NAESB has done so well in other circumstances. Additionally the NAESB EDM subcommittee would evaluate any efficiencies and improvements to be used in exchange of this information.  The data provided by participants should be available to anyone (including commercial applications) who wants to subscribe to such data such as the Interstate Pipeline’s provision of system wide notices and capacity release today. (I believe publicly available, not sure). NAESB should not be the aggregator and distributor of this data. For NAESB to do this would discourage commercial development of analytic tools based on the data and would be a liability for NAESB in a whole new business channel.  The decision to require the data and the timeline for the data to be provided is up to the regulatory body governing that industry participant. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | Electric system operators already use and digest this information and practices to do this are improving. Do not see this as an issue to be addressed through this forum. |
| Rachel Hogge | | | BHE GT&S | | WGQ Pipeline | S | 6 | INGAA supports consideration of ways to aggregate and disseminate the extensive amount of data currently shared by natural gas pipelines. Because pipelines already share a substantial volume of information, INGAA does not support an expansion of reporting requirements. An expansion would impose additional burdens on natural gas customers without materially improving electric reliability. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S |  | I often say electric and gas don’t talk to each other and when they do it isn’t the same language. So this might in fact be helpful to generators and system operators. But I don’t have a strong sense here of what the electricity operators need help understanding and I think some of the ISO/RTOs have what they need. Now. Are there smaller regional systems that don’t know enough about gas to know what questions to ask? Probably. But I sense it is not just providing the electrics with gas information that is needed but helping them understand and apply it. I would support but the concept needs clarification in order to be useful. |
| Joshua Phillips | | | Southwest Power Pool | | WEQ Independent Grid Operator & Planner | S | 5 | Currently done through ISO RTO Council Task Force. Information gained through Interstate Critical Notices is supportive, but could be improved through increased standardization of the information or a common repository of those records. Intrastate information on pipelines and production remain an outstanding issue and should be included in these considerations. |
| Christopher Smith | | | INGAA | | WGQ Pipeline | S | 6 | INGAA supports consideration of ways to aggregate and disseminate the extensive amount of data currently shared by natural gas pipelines. Because pipelines already share a substantial volume of information, INGAA does not support an expansion of reporting requirements. An expansion would impose additional burdens on natural gas customers without materially improving electric reliability. |
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| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 3 | Although this is already done thru the ISO/RTO Council, it could be part of the NAESB discussions. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S |  | Finally, as discussed above, APGA is generally supportive of additional information sharing (Recommendations 16-26, 28-29), so long as it is available to all market participants and costs are allocated appropriately. |

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|  |  | *Recommendation 24* | | *Information Sharing – Consider the use of the NAESB and FERC processes to explore new technologies, mechanisms, and/or industry tools that can streamline and add efficiencies to reporting, posting, and data sharing processes of natural gas pipelines.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | S |  | Actions:  1: NAESB develop standards and datasets for the information to be exchanged.  2: Industry participants either develop commercial solutions or group together to develop solutions relevant to their groups’ business interest. 3: Information available should be able to be subscribed to by any interested party.  Discussion: All referenced recommendations call for development of one or more commercial applications where industry participants can provide information for analysis of gas and power performance and availability as well as utilize the available data for access to analytics. This digitalization of a large quantity of data would provide insight into the market place, by participant role, that is requested in this list of recommendations. This commercial application should be a venture sponsored and developed by industry participants or independent software providers and available on a subscription or per-use basis.  NAESB’s responsibility in this would be to identify the data needed, the timing upon which it is provided, and the datasets for the information to be provided. NAESB would also develop related standards on data timing, quality, etc, as NAESB has done so well in other circumstances. Additionally the NAESB EDM subcommittee would evaluate any efficiencies and improvements to be used in exchange of this information.  The data provided by participants should be available to anyone (including commercial applications) who wants to subscribe to such data such as the Interstate Pipeline’s provision of system wide notices and capacity release today. (I believe publicly available, not sure). NAESB should not be the aggregator and distributor of this data. For NAESB to do this would discourage commercial development of analytic tools based on the data and would be a liability for NAESB in a whole new business channel.  The decision to require the data and the timeline for the data to be provided is up to the regulatory body governing that industry participant. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | There is room for development of new tools but we do not see NAESB or FERC as the proper forum for exploration of new technologies. Do not see this as an issue to be addressed through this forum. |
| Matthew Agen | | | American Gas Association | | WGQ Distributor |  |  | To the extent this is not it should be facilitated by FERC and/or NAESB. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S |  | Do the pipelines really need help with this? If so, fine. It is interesting to look across a swatch of pipeline websites and they all differ as to ease of information access and quantity and quality of information. So maybe FERC and NAESB should push for more uniformity. And maybe start by identifying the best qualities of all the web posting boards and encourage application of them as a best practice. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 2 | To the extent this recommendation focuses on the gas industry standardizing what they report and provide, that would be helpful to enhance transparency and reliability planning. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S |  | Finally, as discussed above, APGA is generally supportive of additional information sharing (Recommendations 16-26, 28-29), so long as it is available to all market participants and costs are allocated appropriately. |

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| **1.** | **Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies** | | | | | | | |
|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | | |
|  |  | *Recommendation 25* | | *Information Sharing – Consider if communication protocols should be developed to facilitate real-time information sharing of system conditions by natural gas pipelines with natural gas end users. This information could include capacity and operational information as well as production, supply, and delivery issues.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | | WGQ Producer | NA |  | During a critical event, a supplier will be in direct communication with customer/generator and pipelines. Real-time flow information, if not anonymized and aggregated, is commercially sensitive and could divulge activity in the physical market before it can be hedged. |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | S |  | Actions:  1: NAESB develop standards and datasets for the information to be exchanged.  2: Industry participants either develop commercial solutions or group together to develop solutions relevant to their groups’ business interest. 3: Information available should be able to be subscribed to by any interested party.  Discussion: All referenced recommendations call for development of one or more commercial applications where industry participants can provide information for analysis of gas and power performance and availability as well as utilize the available data for access to analytics. This digitalization of a large quantity of data would provide insight into the market place, by participant role, that is requested in this list of recommendations. This commercial application should be a venture sponsored and developed by industry participants or independent software providers and available on a subscription or per-use basis.  NAESB’s responsibility in this would be to identify the data needed, the timing upon which it is provided, and the datasets for the information to be provided. NAESB would also develop related standards on data timing, quality, etc, as NAESB has done so well in other circumstances. Additionally the NAESB EDM subcommittee would evaluate any efficiencies and improvements to be used in exchange of this information.  The data provided by participants should be available to anyone (including commercial applications) who wants to subscribe to such data such as the Interstate Pipeline’s provision of system wide notices and capacity release today. (I believe publicly available, not sure). NAESB should not be the aggregator and distributor of this data. For NAESB to do this would discourage commercial development of analytic tools based on the data and would be a liability for NAESB in a whole new business channel.  The decision to require the data and the timeline for the data to be provided is up to the regulatory body governing that industry participant. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | There are opportunities for improvement in this area and we support natural gas pipelines and end users to collaborate. But we do not see this as an issue to be addressed through this forum. |
| Matthew Agen | | | American Gas Association | | WGQ Distributor | S |  | AGA supports this as long as it is legal and safety protocols receive appropriate consideration. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S | 10 | Should the information be pushed out to parties (thus requiring a protocol) or instead be posted and updated in more real time where parties can access? It is not clear to me that posting is inadequate. |
| Michele Richmond | | | Texas Competitive Power Advocates (TCPA) | | WEQ Generator | S | 1 | TCPA believes that interstate pipelines already provide real-time information sharing of system conditions data on their electronic bulletin boards. Intrastate pipelines and storage operators should be required to post actual system infromation similar to how interstate pipeline and storage operators report capacity and operational information as well as production, supply, and delivery issues. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S |  | Finally, as discussed above, APGA is generally supportive of additional information sharing (Recommendations 16-26, 28-29), so long as it is available to all market participants and costs are allocated appropriately. |

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|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | | |
|  |  | *Recommendation 26* | | *Information Sharing – Consider if there should be posting requirements for wellhead and mid-stream facility operators regarding any encountered operational issues.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | | WGQ Producer | O |  | This is sensitive competitively sensitive data that cannot be divulged in the market. However, pipelines can capture disruptions in their notices. |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | S | 3 | Actions:  1: NAESB develop standards and datasets for the information to be exchanged.  2: Industry participants either develop commercial solutions or group together to develop solutions relevant to their groups’ business interest. 3: Information available should be able to be subscribed to by any interested party.  Discussion: All referenced recommendations call for development of one or more commercial applications where industry participants can provide information for analysis of gas and power performance and availability as well as utilize the available data for access to analytics. This digitalization of a large quantity of data would provide insight into the market place, by participant role, that is requested in this list of recommendations. This commercial application should be a venture sponsored and developed by industry participants or independent software providers and available on a subscription or per-use basis.  NAESB’s responsibility in this would be to identify the data needed, the timing upon which it is provided, and the datasets for the information to be provided. NAESB would also develop related standards on data timing, quality, etc, as NAESB has done so well in other circumstances. Additionally the NAESB EDM subcommittee would evaluate any efficiencies and improvements to be used in exchange of this information.  The data provided by participants should be available to anyone (including commercial applications) who wants to subscribe to such data such as the Interstate Pipeline’s provision of system wide notices and capacity release today. (I believe publicly available, not sure). NAESB should not be the aggregator and distributor of this data. For NAESB to do this would discourage commercial development of analytic tools based on the data and would be a liability for NAESB in a whole new business channel.  The decision to require the data and the timeline for the data to be provided is up to the regulatory body governing that industry participant. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | We have experienced a lack of notice/communication from some gas suppliers regarding operational issues and view this as an area for improvement. We think more valuable information would be data on service interruptions due to well-freeze-offs. |
| Rachel Hogge | | | BHE GT&S | | WGQ Pipeline | S | 3 | INGAA supports consideration of posting requirements for wellhead and gathering facilities. Interstate natural gas pipelines already post information regarding issues that affect service, however, so INGAA does not support expanded reporting requirements for the interstate natural gas pipeline industry. |
| Matthew Agen | | | American Gas Association | | WGQ Distributor | O |  | This already exists at the mid-stream level and is handled bi-laterally at the wellhead with the appropriate counterparties. |
| Catherine Elder | | | Aspen Environmental Group | | N/A | S | 6 | Ok, mid-stream would capture our processing facilities but what facility operators would count for the wellhead? At that point it seems like we’re talking about individual producer/well operators experiencing either lack of electricity or freeze-offs. I would love a freeze-out tag by well to become public with the owner of the well ID’d so buyers could perhaps avoid purchasing that gas until that well is winterized. And if they had to post their issues then maybe a buyer could avoid buying gas involving that midstream operator or wellhead. GTI’s “differentiated gas” program or Project Canary might offer product frameworks that could be applied. |
| Joshua Phillips | | | Southwest Power Pool | | WEQ Independent Grid Operator & Planner | S | 1 | As noted earlier, improved transparency into the challenges occurring during extreme conditions will help both industries improve reliable service. |
| Christopher Smith | | | INGAA | | WGQ Pipeline | S |  | INGAA supports consideration of posting requirements for wellhead and gathering facilities. Interstate natural gas pipelines already post information regarding issues that affect service, however, so INGAA does not support expanded reporting requirements for the interstate natural gas pipeline industry. |
| Kim Van Pelt | | | Boardwalk | | WGQ Pipeline | S |  | INGAA supports consideration of posting requirements for wellhead and gathering facilities. Interstate natural gas pipelines already post information regarding issues that affect service, however, so INGAA does not support expanded reporting requirements for the interstate natural gas pipeline industry. |
| Steven McCord | | | TC Energy Corporation | | WGQ Pipeline | S |  | INGAA supports consideration of posting requirements for wellhead and gathering facilities. Interstate natural gas pipelines already post information regarding issues that affect service, however, so INGAA does not support expanded reporting requirements for the interstate natural gas pipeline industry. |
| Christopher Burden | | | Enbridge | | WGQ Pipeline | S |  | INGAA supports consideration of posting requirements for wellhead and gathering facilities. Interstate natural gas pipelines already post information regarding issues that affect service, however, so INGAA does not support expanded reporting requirements for the interstate natural gas pipeline industry. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 1 | During winter storm Elliott, issues developed about availability of commodity but there were no clear information sharing requirements from producers to generators or to RTOs other than last minute force majeure calls. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S |  | Finally, as discussed above, APGA is generally supportive of additional information sharing (Recommendations 16-26, 28-29), so long as it is available to all market participants and costs are allocated appropriately. |

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|  |  | *Recommendation 27* | | *Consider the expansion of generator performance risk assessment by ISOs/RTOs to incorporate an evaluation of the natural gas contracting practices for a natural gas-fired generator as well as the generator’s access to natural gas transport and supply, potentially through the creation of new NERC Reliability Standards. ISOs/RTOs could also monitor FERC’s Index of Customers.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | RTOs and ISOs already effectively do this by looking at performance when accrediting capacity. We do not believe it is appropriate for RTOs/ISOs to delve into generator contracts and do not support. |
| Rachel Hogge | | | BHE GT&S | | WGQ Pipeline | S | 7 | INGAA supports efforts to better understand the contracting practices of natural gas-fired generators. A more complete understanding will better enable the GEH Forum to identify and address risks to electric reliability. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S |  | Like a profile that evaluates the risk a generator can actually operate when needed given their supply and transport agreements? The RTO/ISO or FERC first needs to demand this information. Then we analysts could evaluate. But the Index of Customers is only going to tell us who holds firm capacity, isnt’ it? So I could tell that a generator does not hold FT by them not showing up on the Index. But that does not mean that the generator is not buying gas from a marketer who holds firm capacity. And if they are buying daily spot gas? Seems like the RTO/ISO/reliability planner needs to know a whole lot more about the contracts generators hold and their procurement practices. This is probably needed even if we have the facilitator/platform but if we want generators to buy/hold more firm, we have to give them a way to recover those costs, otherwise we simply put them in an impossible situation |
| Michele Richmond | | | Texas Competitive Power Advocates (TCPA) | | WEQ Generator |  |  | TCPA opposes this recommendation because it singles out natural gas-fired generators. Similar issues exist for all generators regardless of their fuel supply or reliance on weather conditions and will have different implications for different ISOs/RTOs so a uniform NERC Reliability Standard may be difficult to develop in a manner that is fair to all markets. Any required expansion of generator performance risk assessment should be done for all generator types on a non-discriminatory basis within the relevant ISO/RTO frameworks. |
| Joshua Phillips | | | Southwest Power Pool | | WEQ Independent Grid Operator & Planner | S | 10 | This is low on priority due to the lack of standard service levels for monitoring performance and lack of visibility into the causes, e.g. well head performance. Until standard tiers for fuel service, risk assessments will be an arbitrary assumption and could result in discriminatory behaviors for generation. |
| Nancy Bagot | | | Electric Power Supply Association | | WEQ Generator | O |  | This is being addressed by ISOs/RTOs in capacity accreditation stakeholder processes and should not be the subject of a standard or universal requirement |
| Christopher Smith | | | INGAA | | WGQ Pipeline | S | 7 | INGAA supports efforts to better understand the contracting practices of natural gas-fired generators. A more complete understanding will better enable the GEH Forum to identify and address risks to electric reliability. |
| Kim Van Pelt | | | Boardwalk | | WGQ Pipeline | S | 7 | INGAA supports efforts to better understand the contracting practices of natural gas-fired generators. A more complete understanding will better enable the GEH Forum to identify and address risks to electric reliability. |
| Steven McCord | | | TC Energy Corporation | | WGQ Pipeline | S | 7 | INGAA supports efforts to better understand the contracting practices of natural gas-fired generators. A more complete understanding will better enable the GEH Forum to identify and address risks to electric reliability. |
| Christopher Burden | | | Enbridge | | WGQ Pipeline | S | 7 | INGAA supports efforts to better understand the contracting practices of natural gas-fired generators. A more complete understanding will better enable the GEH Forum to identify and address risks to electric reliability. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 5 | This issue is being addressed in different RTO processes. The NAESB process should be informed of those processes but not seek to duplicate or supplant them. |

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|  |  | *Recommendation 28* | | *Critical Notices – Consider if there should be further standardization regarding the issuance and content of critical notices, such as specified minimum geographical locational information and an identification of the event leading to the notice being issued.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | S | 6 | Actions:  1: NAESB develop standards and datasets for the information to be exchanged.  2: Industry participants either develop commercial solutions or group together to develop solutions relevant to their groups’ business interest. 3: Information available should be able to be subscribed to by any interested party.  Discussion: All referenced recommendations call for development of one or more commercial applications where industry participants can provide information for analysis of gas and power performance and availability as well as utilize the available data for access to analytics. This digitalization of a large quantity of data would provide insight into the market place, by participant role, that is requested in this list of recommendations. This commercial application should be a venture sponsored and developed by industry participants or independent software providers and available on a subscription or per-use basis.  NAESB’s responsibility in this would be to identify the data needed, the timing upon which it is provided, and the datasets for the information to be provided. NAESB would also develop related standards on data timing, quality, etc, as NAESB has done so well in other circumstances. Additionally the NAESB EDM subcommittee would evaluate any efficiencies and improvements to be used in exchange of this information.  The data provided by participants should be available to anyone (including commercial applications) who wants to subscribe to such data such as the Interstate Pipeline’s provision of system wide notices and capacity release today. (I believe publicly available, not sure). NAESB should not be the aggregator and distributor of this data. For NAESB to do this would discourage commercial development of analytic tools based on the data and would be a liability for NAESB in a whole new business channel.  The decision to require the data and the timeline for the data to be provided is up to the regulatory body governing that industry participant. Convert contents of system wide notices to a digital format instead of a text format to enhance the ability to process the data.  Discussion: The transformation of critical and system wide notices from a text-based posting to a digitalized version would be beneficial here to enable processing and aggregation of the notices. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | S |  | These are largely driven by pipeline’s tariff requirements. |
| Matthew Agen | | | American Gas Association | | WGQ Distributor |  |  | This may already exist at a certain level. However, it is important to note that pipeline notices are tailored to that pipelines system. AGA would not want to lose pipeline specific data and detailed information LDCs need just to make the notices uniform. Moreover, who would pay for standardized systems that certain stakeholders do not need. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S |  | Don’t know if the critical notices should be standardized or should simply contain more content. What caused the problem? Example: Keystone storage declared force majeure during Uri; was it a freeze-off? Of what? More information, among other things, would help shippers understand more about when to expect resolution as well as evaluate whether purchase of the associated service was worthwhile. It could also help evaluate the need for and marketability of substitute or alternative services. But don’t see this as a huge part of the solution |
| Michele Richmond | | | Texas Competitive Power Advocates (TCPA) | | WEQ Generator | S | 2 | Intrastate pipelines and storage operators should be required to publicly post critical notices (similar to interstate pipelines) for issues that impact or could impact pipeline system capacity with sufficient details to allow shippers to adequately plan for contingent supplies or prepare for interruptions. |
| Nancy Bagot | | | Electric Power Supply Association | | WEQ Generator | S | 7 | More standardized or more detailed notice of expected events should assist market participants in preparing and understanding possible system constraints or tight conditions. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 2 | See comments re: value of additional communication prior to the calling of OFOs |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S |  | Finally, as discussed above, APGA is generally supportive of additional information sharing (Recommendations 16-26, 28-29), so long as it is available to all market participants and costs are allocated appropriately. |

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|  |  | *Recommendation 29* | | *Critical Notices – Consider if, similar to the Energy Emergency Alert system, a tiered approach can be utilized for the issuance of operational flow orders to allow for quicker, easier distinguishment in the expected level of impact.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | | WGQ Producer | S |  | Most pipelines already implement a tiered structure. |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | S | 9 | Actions:  1: NAESB develop standards and datasets for the information to be exchanged.  2: Industry participants either develop commercial solutions or group together to develop solutions relevant to their groups’ business interest. 3: Information available should be able to be subscribed to by any interested party.  Discussion: All referenced recommendations call for development of one or more commercial applications where industry participants can provide information for analysis of gas and power performance and availability as well as utilize the available data for access to analytics. This digitalization of a large quantity of data would provide insight into the market place, by participant role, that is requested in this list of recommendations. This commercial application should be a venture sponsored and developed by industry participants or independent software providers and available on a subscription or per-use basis.  NAESB’s responsibility in this would be to identify the data needed, the timing upon which it is provided, and the datasets for the information to be provided. NAESB would also develop related standards on data timing, quality, etc, as NAESB has done so well in other circumstances. Additionally the NAESB EDM subcommittee would evaluate any efficiencies and improvements to be used in exchange of this information.  The data provided by participants should be available to anyone (including commercial applications) who wants to subscribe to such data such as the Interstate Pipeline’s provision of system wide notices and capacity release today. (I believe publicly available, not sure). NAESB should not be the aggregator and distributor of this data. For NAESB to do this would discourage commercial development of analytic tools based on the data and would be a liability for NAESB in a whole new business channel.  The decision to require the data and the timeline for the data to be provided is up to the regulatory body governing that industry participant. Convert contents of system wide notices to a digital format instead of a text format to enhance the ability to process the data.  Discussion: The transformation of critical and system wide notices from a text-based posting to a digitalized version would be beneficial here to enable processing and aggregation of the notices. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | Unnecessary. |
| Matthew Agen | | | American Gas Association | | WGQ Distributor |  |  | It is not clear how a tiered structure adds transparency. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S |  | California’s large utility/transmission operators (i.e., PG&E and SoCalGas) use tiers now. The tier and the associated penalty is designed to capture the severity of the need and apply a penalty large enough to resolve the imbalance. If this is not in place elsewhere, then is probably a good idea to implement more broadly. |
| Joshua Phillips | | | Southwest Power Pool | | WEQ Independent Grid Operator & Planner | S | 8 | It is unclear how this could be implemented without standards to establish thresholds for each alert level. It would be detrimental to have different emergency level definitions across multiple pipelines. |
| Nancy Bagot | | | Electric Power Supply Association | | WEQ Generator | N/A |  | It’s unclear if a tiered approach to OFOs is feasible, though information regarding critical days, OFO triggers, could be standardized but may not be sufficient for prioritizing this recommendation. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 1 | This would be helpful as OFO practices of pipelines and their significance can markedly vary among different pipelines. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S |  | Finally, as discussed above, APGA is generally supportive of additional information sharing (Recommendations 16-26, 28-29), so long as it is available to all market participants and costs are allocated appropriately. |

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|  |  | *Recommendation 30* | | *Planning/Forecasting – Consider modifying ISO/RTO planning processes to include criteria regarding a generation resource’s supply portfolio in order to better ensure the scheduling of resources with the firmest supplies during peak periods. This could include consideration of incentives to encourage more competitive procurement practices and the implementation of reliable fuel practices that better account for the possibility of natural gas constraints during peak demand periods, such as requirements for generators to contract for back-up services.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | S | 5 | 1. Consider standards to support the described modifications if the results would encourage use of Firm Transportation.  Discussion: If this recommendation encourages use of Firm Transportation then it will benefit both the electric and gas marketplace. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | Most RTOs/ISOs already incorporate fuel firmness into resource accreditation, either directly or indirectly through performance criteria. We support mechanisms focused on performance rather than mandates. We do not support this proposal. |
| Rachel A. Hogge | | | BHE GT&S | | WGQ Pipeline | S | 8 | INGAA supports efforts to better understand the contracting practices of natural gas-fired generators. A more complete understanding will better enable the GEH Forum to identify and address risks to electric reliability. INGAA further supports efforts to incentivize the procurement of firm natural gas transportation capacity needed to maintain electric reliability. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S |  | This could be helpful insofar as lowest cost stops being the sole dispatch criterion. Maybe we add a price adder to incentivize firm supply and transport as well but I like the idea that they get dispatch priority. Ask a production cost/dispatch modelers how we could get the models to reflect that firm tag as I am not sure there is a zero/one qualitative tag option in the model – or do we fool the model by adding a penalty cost to those who bid without firm supply and transport? Still, the cost recovery uncertainty is the problem, so support but this seems like a half-step, not a full solution. |
| Nancy Bagot | | | Electric Power Supply Association | | WEQ Generator | O |  | Note that this addresses peak periods, not critical periods. Assumptions about the actual firmness of what are deemed “firm supplies” during emergencies are not reliable. The discussion of incentives for “more competitive fuel procurement” is misplaced with the ISO planning function, and is overly ill-defined. |
| Christopher Smith | | | INGAA | | WGQ Pipeline | S | 8 | INGAA supports efforts to better understand the contracting practices of natural gas-fired generators. A more complete understanding will better enable the GEH Forum to identify and address risks to electric reliability. INGAA further supports efforts to incentivize the procurement of firm natural gas transportation capacity needed to maintain electric reliability. |
| Kim Van Pelt | | | Boardwalk | | WGQ Pipeline | S | 8 | INGAA supports efforts to better understand the contracting practices of natural gas-fired generators. A more complete understanding will better enable the GEH Forum to identify and address risks to electric reliability. INGAA further supports efforts to incentivize the procurement of firm natural gas transportation capacity needed to maintain electric reliability. |
| Steven McCord | | | TC Energy Corporation | | WGQ Pipeline | S | 8 | INGAA supports efforts to better understand the contracting practices of natural gas-fired generators. A more complete understanding will better enable the GEH Forum to identify and address risks to electric reliability. INGAA further supports efforts to incentivize the procurement of firm natural gas transportation capacity needed to maintain electric reliability. |
| Christopher Burden | | | Enbridge | | WGQ Pipeline | S | 8 | INGAA supports efforts to better understand the contracting practices of natural gas-fired generators. A more complete understanding will better enable the GEH Forum to identify and address risks to electric reliability. INGAA further supports efforts to incentivize the procurement of firm natural gas transportation capacity needed to maintain electric reliability. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 4 | This suggestion needs to be ‘unbundled’ as between planning and operations. The planning and interconnection processes take place well ahead of the generator committing to a specific supply portfolio. These issues are best addressed thru accreditation of capacity which is already being considered in various RTO processes. Overall NAESB observations and recommendations would be helpful but the NAESB process should not supplant those individual RTO processes. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S |  | The energy industry has done a great job of finding workable efficiencies in the existing system, and APGA is supportive of reviewing the overarching industry’s planning and forecasting processes (Recommendations 30-36), but we appear to be at the existing infrastructure’s limit. Instead, we are faced with a much larger, underlying issue, which is that the market is demanding more natural gas than can currently be delivered with the existing natural gas pipeline network. Accordingly, the NAESB GEH Forum should support efforts to develop additional infrastructure through a modernized and streamlined permitting process, ensuring along the way that costs of developing such infrastructure are fairly allocated. |

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|  |  | *Recommendation 31* | | *Planning/Forecasting – Consider if there are modifications to planning processes and/or market design that will provide for greater predictability regarding the future dispatch of a generator in order to encourage firm fuel and transport procurement. This could include the procurement of generation to meet peak load and reserve needs at least a season in advance or additional contingencies as part of load forecasting.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | | WGQ Producer | S |  | RTOs/ISOs should consider developing a three- or five-day ahead market with guaranteed gas supply cost recovery for any prudent losses for generators that clear that market. |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | S |  | 1. Consider standards to support the described modifications if the results would encourage use of Firm Transportation.  Discussion: If this recommendation encourages use of Firm Transportation then it will benefit both the electric and gas marketplace. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | Most RTOs/ISOs already incorporate fuel firmness into resource accreditation, either directly or indirectly through performance criteria. We support mechanisms forcused on performance rather than mandates. We do not support this proposal. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | O |  | It isn’t the planning that needs modification so much as the market design, and it isn’t predictability that would encourage those generators to obtain FT and firm supply but certainty on the cost recovery so that generators are not left holding the bag on FT and firm supply needed for reliability. Planning won’t solve this problem |
| Joshua Phillips | | | Southwest Power Pool | | WEQ Independent Grid Operator & Planner | S | 8 | Consideration should be done through an open forum whereby existing planning practices can be evaluated between both industries. Additional concerns may exist with market sensitive information being exchanged during the planning process. |
| Nancy Bagot | | | Electric Power Supply Association | | WEQ Generator | N/A |  | This is not needed as power system operators know the general heat rates of resources, who will run economically and who will not, and who has dual fuel capability. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | O |  | RTO markets do not make seasonal commitments to generation. The markets provide shorter term day ahead and real time commitments. Changing to a longer term commitment has many implications for customers and the whole notion of a short term competitive market and are really beyond the kind of concrete recommendations that this forum should be considering. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S |  | The energy industry has done a great job of finding workable efficiencies in the existing system, and APGA is supportive of reviewing the overarching industry’s planning and forecasting processes (Recommendations 30-36), but we appear to be at the existing infrastructure’s limit. Instead, we are faced with a much larger, underlying issue, which is that the market is demanding more natural gas than can currently be delivered with the existing natural gas pipeline network. Accordingly, the NAESB GEH Forum should support efforts to develop additional infrastructure through a modernized and streamlined permitting process, ensuring along the way that costs of developing such infrastructure are fairly allocated. |

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| **1.** | **Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies** | | | | | | | |
|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | | |
|  |  | *Recommendation 32* | | *Planning/Forecasting – Consider increased transparency regarding natural gas planning processes, including long-term reliability and contingency planning.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | S |  | This is a FERC policy consideration. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | In our view this recommendation reflects a misunderstanding about how pipelines are planned and built. They are built to provide firm service to those with firm contracts. |
| Matthew Agen | | | American Gas Association | | WGQ Distributor | O |  | This appears to be overly broad. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S |  | Whose gas planning? On the interstates it comes down to basis differentials: someone will propose new capacity when the basis between two points exceeds the cost of building new pipe. For the large LDCs, most states have never paid close attention to pipeline additions but many are starting to as they consider decarbonization and realizing regulators have largely left this to the utilities to handle. New York, Colorado, possibly Rhode Island and California are examples. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | O |  | Not clear what this recommendation as written is getting at. Its very broadly written. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S |  | The energy industry has done a great job of finding workable efficiencies in the existing system, and APGA is supportive of reviewing the overarching industry’s planning and forecasting processes (Recommendations 30-36), but we appear to be at the existing infrastructure’s limit. Instead, we are faced with a much larger, underlying issue, which is that the market is demanding more natural gas than can currently be delivered with the existing natural gas pipeline network. Accordingly, the NAESB GEH Forum should support efforts to develop additional infrastructure through a modernized and streamlined permitting process, ensuring along the way that costs of developing such infrastructure are fairly allocated. |

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| **1.** | **Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies** | | | | | | | |
|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | | |
|  |  | *Recommendation 33* | | *Planning/Forecasting – Consider if there are mechanisms to increase interactions between the natural gas and electric industries during planning processes, such as the siting of natural gas generation and natural gas pipeline expansions, scenario based planning, and long-term planning processes.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | | WGQ Producer | S |  | This is essential. The power market needs to become involved in supporting gas infrastructure projects that improve reliability for the power market, including paying for infrastructure that allows for non-ratable takes. |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | S | 8 | This is a FERC policy consideration. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | Those building gas fired resources should be doing this as part of their planning. |
| Rachel Hogge | | | BHE GT&S | | WGQ Pipeline | S | 9 | INGAA is open to consideration of increased discussions regarding siting of natural gas-fired generation. Interstate natural gas pipelines might have limited ability to contribute to those conversations, however, because they do not have a complete understanding of each generator’s contracts (e.g., generator might have purchased bundle from marketer). INGAA encourages RTOs/ISOs to discuss these issues directly with generators.  INGAA supports mechanisms to allow ISOs/RTOs to purchase the capacity necessary to maintain long-term reliability. This type of firm commitment from ISOs/RTOs will support needed infrastructure expansion. |
| Matthew Agen | | | American Gas Association | | WGQ Distributor | S | 9 | This already exists and the market already does this. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S |  | Does this really not happen now? I have seen gas get left to the bottom of the list for planning a new power plant but at the same time there have been plants proposed and withdrawn after I told the Developer access to gas was bad. It does not seem like this is a key issue insofar as it relates to siting. Scenario-based planning, for sure and long-term should take into account need for continued access to gas. But isn’t the highest priority. |
| Joshua Phillips | | | Southwest Power Pool | | WEQ Independent Grid Operator & Planner | No Opinion |  | This will be an issue to be addressed by generation owners and the gas suppliers and pipelines. |
| Christopher Smith | | | INGAA | | WGQ Pipeline | S | 9 | INGAA is open to consideration of increased discussions regarding siting of natural gas-fired generation. Interstate natural gas pipelines might have limited ability to contribute to those conversations, however, because they do not have a complete understanding of each generator’s contracts (e.g., generator might have purchased bundle from marketer). INGAA encourages RTOs/ISOs to discuss these issues directly with generators.  INGAA supports mechanisms to allow ISOs/RTOs to purchase the capacity necessary to maintain long-term reliability. This type of firm commitment from ISOs/RTOs will support needed infrastructure expansion. |
| Kim Van Pelt | | | Boardwalk | | WGQ Pipeline | S | 9 | INGAA is open to consideration of increased discussions regarding siting of natural gas-fired generation. Interstate natural gas pipelines might have limited ability to contribute to those conversations, however, because they do not have a complete understanding of each generator’s contracts (e.g., generator might have purchased bundle from marketer). INGAA encourages RTOs/ISOs to discuss these issues directly with generators.  INGAA supports mechanisms to allow ISOs/RTOs to purchase the capacity necessary to maintain long-term reliability. This type of firm commitment from ISOs/RTOs will support needed infrastructure expansion. |
| Steven McCord | | | TC Energy Corporation | | WGQ Pipeline | S | 9 | INGAA is open to consideration of increased discussions regarding siting of natural gas-fired generation. Interstate natural gas pipelines might have limited ability to contribute to those conversations, however, because they do not have a complete understanding of each generator’s contracts (e.g., generator might have purchased bundle from marketer). INGAA encourages RTOs/ISOs to discuss these issues directly with generators.  INGAA supports mechanisms to allow ISOs/RTOs to purchase the capacity necessary to maintain long-term reliability. This type of firm commitment from ISOs/RTOs will support needed infrastructure expansion. |
| Christopher Burden | | | Enbridge | | WGQ Pipeline | S | 9 | INGAA is open to consideration of increased discussions regarding siting of natural gas-fired generation. Interstate natural gas pipelines might have limited ability to contribute to those conversations, however, because they do not have a complete understanding of each generator’s contracts (e.g., generator might have purchased bundle from marketer). INGAA encourages RTOs/ISOs to discuss these issues directly with generators.  INGAA supports mechanisms to allow ISOs/RTOs to purchase the capacity necessary to maintain long-term reliability. This type of firm commitment from ISOs/RTOs will support needed infrastructure expansion. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 1 | This is a very helpful suggestion where RTO planning processes could help inform need determinations for siting new pipelines. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S |  | The energy industry has done a great job of finding workable efficiencies in the existing system, and APGA is supportive of reviewing the overarching industry’s planning and forecasting processes (Recommendations 30-36), but we appear to be at the existing infrastructure’s limit. Instead, we are faced with a much larger, underlying issue, which is that the market is demanding more natural gas than can currently be delivered with the existing natural gas pipeline network. Accordingly, the NAESB GEH Forum should support efforts to develop additional infrastructure through a modernized and streamlined permitting process, ensuring along the way that costs of developing such infrastructure are fairly allocated. |

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| **1.** | **Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies** | | | | | | | |
|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | | |
|  |  | *Recommendation 34* | | *Planning/Forecasting – Consider the development of forecasting and/or planning best practices to assist ISOs/RTOs in managing unanticipated demand due to critical weather events.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | S |  | 1. As a low priority, develop and provide education on planning and forcasting best practices for ISOs/RTOs.   Discussion: This is a noble recommendation that should be worked on, however the amount of effort may result in a slow process. There are many recommendations here that will provide quicker and significant results.  Additionally, any outcome from this process should be viewed as a minimum capability to permit ISOs/RTOs to venture into new and better practices as situations evolve. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | We generally support improvements in load and VER forecasting, but do not believe there is value in this forum addressing this issue. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S |  | I suspect some or all of the ISOs/RTOs don’t have enough focus on extreme cases. The August 2020 heat event that caused blackouts in California, for example, was deemed by some to be a 1-in-100 event. The reliability standard, however, is 1-in-10. So contingency plans for events out in the probability distribution tails -- well, Uri is out there, too – needs to occur. Some of the planning could encompass demand response plans to voluntarily divert industrial gas demand to instead send that gas to power plants or human needs customers. |
| Nancy Bagot | | | Electric Power Supply Association | | WEQ Generator | N/A |  | What is important is that forecast models need continuous improvement and that operators need to be aware of weather when the forecasts do not make sense. This can be handled through operational tools RTOs already have. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | O |  | This is getting beyond the gas/electric harmonization issues that this forum is tasked with considering. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S |  | The energy industry has done a great job of finding workable efficiencies in the existing system, and APGA is supportive of reviewing the overarching industry’s planning and forecasting processes (Recommendations 30-36), but we appear to be at the existing infrastructure’s limit. Instead, we are faced with a much larger, underlying issue, which is that the market is demanding more natural gas than can currently be delivered with the existing natural gas pipeline network. Accordingly, the NAESB GEH Forum should support efforts to develop additional infrastructure through a modernized and streamlined permitting process, ensuring along the way that costs of developing such infrastructure are fairly allocated. |

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| **1.** | **Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies** | | | | | | | |
|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | | |
|  |  | *Recommendation 35* | | *Planning/Forecasting – Consider a mechanism by which input can be provided to planning entities by all market participants regarding established requirements for forecasting and planning.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | S | 4 | 1. Develop data sets and associated standards to provide useful data from market participants to aid in planning and forecasting.   Discussion: Is this data competitive data that should not be exchanged? We need to be careful on which data we exchange to enable and encourage a competitive marketplace. Developing standards and datasets to provide useful data from market participants will provide a mechanism for planning entities to subscribe to such data rather than develop independent solutions. 1. NAESB develop standard datasets, standards for required exchange of information and any EDM requirements for how the data is exchanged.   NAESB should set standards for the information that should be made available and should establish formats for the exchange of that information. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | This recommendation isn’t really clear as to who the planning entities to be included are. This is something we have talked about before. We are willing to provide our gas demand forecasts to our upstream pipelines so they can understand our hourly use profile. |
| Matthew Agen | | | American Gas Association | | WGQ Distributor | O |  | This is overly broad. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | O |  | Not sure what the intended planning entities are or what the established requirements would be; what this achieves is unclear to me. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | O |  | This is getting beyond the gas/electric harmonization issues that this forum is tasked with considering. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S |  | The energy industry has done a great job of finding workable efficiencies in the existing system, and APGA is supportive of reviewing the overarching industry’s planning and forecasting processes (Recommendations 30-36), but we appear to be at the existing infrastructure’s limit. Instead, we are faced with a much larger, underlying issue, which is that the market is demanding more natural gas than can currently be delivered with the existing natural gas pipeline network. Accordingly, the NAESB GEH Forum should support efforts to develop additional infrastructure through a modernized and streamlined permitting process, ensuring along the way that costs of developing such infrastructure are fairly allocated. |

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|  | 1.c | Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling) | | | | | | |
|  |  | *Recommendation 36* | | *Planning/Forecasting – Consider if there would be a benefit in providing, as part of electric demand forecast, specific information regarding anticipated natural gas needs.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | S |  | Who would provide this data? If it would come from individual generators, then is it required? And who would subscribe to the data? This would be achieved through comments A and B above. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | This recommendation isn’t really clear as to who the planning entities to be included are. This is something we have talked about before. We are willing to provide our gas demand forecasts to our upstream pipelines so they can understand our hourly use profile. |
| Catherine Elder | | | Aspen Environmental Group | | N/A | S |  | Oh yes, the electric demand forecast as an input to resource adequacy should evaluate whether the gas needed will be available. We have to stop assuming that the gas will be available and we have to stop assuming that the capacity will be there when needed. This should be part of the standard reliability check. And it should include consideration of peak events. |
| Nancy Bagot | | | Electric Power Supply Association | | WEQ Generator | N/A |  | This is an example of a business/commercial decision about future gas procurement and arrangements made by generators based on if and when they expect to run. General data on future system needs is assessed and reported by ISOs/RTOs, NERC’s Regional Entities, and others and should continue as an informational view looking ahead. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 2 | Bringing this information into the planning processes of each industry would allow for more holistic planning of both natural gas and electric grid infrastructure. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S |  | The energy industry has done a great job of finding workable efficiencies in the existing system, and APGA is supportive of reviewing the overarching industry’s planning and forecasting processes (Recommendations 30-36), but we appear to be at the existing infrastructure’s limit. Instead, we are faced with a much larger, underlying issue, which is that the market is demanding more natural gas than can currently be delivered with the existing natural gas pipeline network. Accordingly, the NAESB GEH Forum should support efforts to develop additional infrastructure through a modernized and streamlined permitting process, ensuring along the way that costs of developing such infrastructure are fairly allocated. |

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| **2.** | **Measures to improve reliability of natural gas facilities during cold weather (freeze protection, electric supply)** | | | | | | |
|  | 2.a | Additional state actions (including possibly establishing an organization to set standards, as NERC does for Bulk Electric System entities) to enhance the reliability of intrastate natural gas pipelines and other intrastate natural gas facilities | | | | | |
|  |  | *Recommendation 1* | *Consider state mandated information sharing/transparency requirements between intrastate pipelines, storage operators, state regulatory bodies, generators, and other end users related to capacity, planned outages, operations, gathering and receipt point production issues, and other delivery issues, which may require the use of Electronic Bulletin Boards.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | S | 1 | The posted information should be limited to pipeline data and not commercially sensitive production data. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 3 | Action:  These are the same actions as Comment A above: 1. NAESB should develop datasets and standards for provision of the described data, including which data should come from which parties.  2. Information made available should be able to be subscribed to, from the provider, by any interested party.  3. Policy is required to establish rules for industry participants to provide meaningful data in both a digital format for processing and an EBB format for viewing and searching.   Discussion: The resulting information would be available for any relevant industry participant to subscribe to receive from the original source. If a state determines to require EBBs from participants, the EBBs should be populated by this same information as is available in a digital format. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | The force majeure language has existed “as is” in the NAESB base contract for a long period of time and was originally intended to address offshore supply risks. With the move to onshore production, a review of the NAESB base contract may be appropriate. However, we are unsure if language changes alone can effectively drive weatherization efforts. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | S |  | Xcel Energy supports this recommendation, specifically in the context of intrastate pipelines. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | This seems overly broad, and markets already determine this. AGA supports proposals that improve line of sight into upstream reliability at the pipelines or producer level. However, there is preference for the focus of this effort to be on federal matters and not state matters. |
| Michele Richmond | | | Texas Competitive Power Advocates (TCPA) | WEQ Generator | S | 1 | An increased level of transparency is needed in the intrastate pipeline and storage markets to help ensure gas and electric reliability and affordability. In Texas, it is also needed to establish fair and reasonable pricing for services as required by the Texas Utility Code. Intrastate gas pipeline and storage operators should publicly post their available capacity, planned outages, operations, gathering and receipt point production issues, and other delivery issues similar to how interstate pipelines post this information on electronic bulletin boards. Since most intrastate pipeline operators also own and operate interstate pipelines, they already have the necessary infrastructure and knowledge of how to accomplish this information sharing at minimal cost and effort. Publicly posting this information will increase the overall gas-electric system efficiency and reliability and help level the commercial playing field to prevent companies that can exert market power from financially harming gas and electric end-use customers |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S | 2 | AF&PA and PGC support states mandating increased transparency regarding the intrastate activities, as the lack of transparency was evident during the recent storm events. States should implement this change as soon as practical, and, hopefully, before the next major weather event. |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | S | 8 | This could be helpful, however states should use consistent approach. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S |  | Greater transparency of intrastate pipeline systems is needed, particularly in the posting of actual flow data that can assist in validating force majeure claims and posting of available capacity to assist in identifying locations for additional supply/capacity. This should be deemed a high priority recommendation or state commissions and authorities. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S |  | As discussed above, APGA is generally supportive of additional information sharing and added transparency (Recommendations 1-2, 4), so long as it is available to all market participants |

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| **2.** | **Measures to improve reliability of natural gas facilities during cold weather (freeze protection, electric supply)** | | | | | | |
|  | 2.a | Additional state actions (including possibly establishing an organization to set standards, as NERC does for Bulk Electric System entities) to enhance the reliability of intrastate natural gas pipelines and other intrastate natural gas facilities | | | | | |
|  |  | *Recommendation 2* | *Consider the development of or modification to capacity release markets for intrastate pipelines, including needed transparency requirements.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 6 | This is a policy issue for the states and would only apply in a deregulated or partially deregulated environment. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | S |  | Xcel Energy supports this recommendation, specifically in the context of intrastate pipelines. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | This should be left up to the state commissions. |
| Michele Richmond | | | Texas Competitive Power Advocates (TCPA) | WEQ Generator | S | 3 | TCPA believes that to increase reliability and efficiency of the intrastate pipeline markets, it is necessary to implement a capacity release market similar to what interstate pipelines already have in place. Unused pipeline capacity can only be utilized by intrastate pipelines that sell interruptible services or by their marketing affiliates. In both scenarios, there is no mechanism to purchase the unused capacity directly from the shipper in a transparent marketplace. A well-functioning capacity release market on intrastate pipeline systems would provide opportunities for willing buyers and sellers to buy and sell unused firm pipeline capacity and allocate such capacity at competitive pricing. The lack of a well-functioning, transparent capacity market allows intrastate pipelines to capture windfall profits during extreme weather events and these costs are ultimately passed on to both electric and gas end-use customers. Well-functioning capacity release markets on intrastate pipelines would also increase the incentive for electric generators to procure firm transportation capacity since they could monetize that capacity in times when is cannot be fully utilized for their own purposes. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S | 6 | Information yes, modifications no. We support development of capacity release programs for intrastate capacity release markets, but it is unclear as to what modifications to these programs are being recommended where they already exist. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S |  | Greater transparency of intrastate pipeline systems is needed, particularly in the posting of actual flow data that can assist in validating force majeure claims and posting of available capacity to assist in identifying locations for additional supply/capacity. This should be deemed a high priority recommendation or state commissions and authorities. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S |  | As discussed above, APGA is generally supportive of additional information sharing and added transparency (Recommendations 1-2, 4), so long as it is available to all market participants |

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| **2.** | **Measures to improve reliability of natural gas facilities during cold weather (freeze protection, electric supply)** | | | | | | |
|  | 2.a | Additional state actions (including possibly establishing an organization to set standards, as NERC does for Bulk Electric System entities) to enhance the reliability of intrastate natural gas pipelines and other intrastate natural gas facilities | | | | | |
|  |  | *Recommendation 3* | *Consider separation of intrastate pipeline operational and marketing functions as well as intrastate pipeline affiliates and other entities that compete for transportation and storage contracts.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 9 | This is a policy decision. Is this a recommendation for a federal policy to require all states to have open access such as Interstate Pipelines? Or to require all states to allow partial or full open access? Before recommending such action, the group should hear from the successes and difficulties of open access states such as Georgia where AGL is the only LDC that adopted full open access. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | S |  | Support open access to intrastate transportation |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | This should be left up to the state commissions. |
| Michele Richmond | | | Texas Competitive Power Advocates (TCPA) | WEQ Generator | S | 2 | The lack of separation between pipeline operational and marketing functions allows intrastate pipelines to operate as regional monopolies and exert market power in the pricing of gas supply services particularly during time of high demand during extreme weather events, such as Winter Storm Uri. Customers are then forced to choose between exorbitant prices or the real prospect of having no access to natural gas supplies. This lack of competitive choice affects both the system reliability as well as the cost to gas and electric end-use customers. |

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| **2.** | **Measures to improve reliability of natural gas facilities during cold weather (freeze protection, electric supply)** | | | | | | |
|  | 2.a | Additional state actions (including possibly establishing an organization to set standards, as NERC does for Bulk Electric System entities) to enhance the reliability of intrastate natural gas pipelines and other intrastate natural gas facilities | | | | | |
|  |  | *Recommendation 4* | *Consider greater visibility into the firm contracting practices and circumstances creating force majeure events in the intrastate markets.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | S | 4 | This proposal must be limited to intrastate pipelines. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 4 | This information is difficult to obtain from many states. Visibility through development of datasets and standards (Comment B above) would create better transparency for marketers and generators to provide the correct services. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Southern Companies are supportive of efforts which appropriately recognize emergency situations where safety must be prioritized in the near term. The ability to apply a waiver or suspend certain limits or rules during emergency events is prudent and appropriately recognizes the safety of the customer as the priority. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | S |  | Xcel Energy supports this recommendation, specifically in the context of intrastate supply and transportation. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | This should be left up to the state commissions. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S | 3 | AF&PA and PGC support states mandating increased transparency regarding the intrastate activities, as the lack of transparency was evident during the recent storm events. States should implement this change as soon as practical, and, hopefully, before the next major weather event |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | S | 1 | Many of the considerations proposed will have limited or no benefit if a winter storm can eliminate any responsibility to produce and deliver fuel. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S |  | More transparency around pipeline flow data and possible modifications of Force Majeure provisions in standard NAESB base contract would increase the ability to validate any force majeure claims in both interstate and intrastate markets. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S |  | As discussed above, APGA is generally supportive of additional information sharing and added transparency (Recommendations 1-2, 4), so long as it is available to all market participants |

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| **2.** | **Measures to improve reliability of natural gas facilities during cold weather (freeze protection, electric supply)** | | | | | | |
|  | 2.a | Additional state actions (including possibly establishing an organization to set standards, as NERC does for Bulk Electric System entities) to enhance the reliability of intrastate natural gas pipelines and other intrastate natural gas facilities | | | | | |
|  |  | *Recommendation 5* | *Consider the adoption or expansion of applicability of FERC transparency requirements to Hinshaw Pipelines and intrastate pipelines subject to FERC jurisdiction under section 311(a)(2) of the Natural Gas Policy Act.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 5 | This information is difficult to obtain from many states. Visibility through development of datasets and standards (Comment B above) would create better transparency for marketers and generators to provide the correct services. |
| Michele Richmond | | | Texas Competitive Power Advocates (TCPA) | WEQ Generator | S | 5 | TCPA agrees with this recommendation but does not believe it should be limited to 311 Service, rather it should apply to all intrastate gas pipelines and storage operators. Transparency is needed in the intrastate pipeline and storage markets to ensure gas and electric reliability and affordability. In Texas, it is also needed to establish fair and reasonable pricing for services as required by the Texas Utility Code. Intrastate gas pipeline and storage operators should publicly post their available capacity, planned outages, operations, gathering and receipt point production issues, and other delivery issues similar to how interstate pipelines post this information on electronic bulletin boards. Since most interstate pipeline operators also own and operate interstate pipelines, they already have the necessary infrastructure and knowledge of how to accomplish this information sharing at minimal cost and effort. Publicly posting this information will increase the overall gas-electric system efficiency and reliability and help level the commercial playing field to prevent companies that can exert market power from financially harming gas and electric end-users. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S |  | Greater transparency of intrastate pipeline systems is needed, particularly in the posting of actual flow data that can assist in validating force majeure claims and posting of available capacity to assist in identifying locations for additional supply/capacity. This should be deemed a high priority recommendation or state commissions and authorities. |

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| **2.** | **Measures to improve reliability of natural gas facilities during cold weather (freeze protection, electric supply)** | | | | | | |
|  | 2.a | Additional state actions (including possibly establishing an organization to set standards, as NERC does for Bulk Electric System entities) to enhance the reliability of intrastate natural gas pipelines and other intrastate natural gas facilities | | | | | |
|  |  | *Recommendation 6* | *Consider requirements for LDCs to develop methodologies to reforecast demand, specify reserve margin calculations, and release excess capacity and/or natural gas during extreme weather events.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | O |  | Interstate pipeline customers should be able to make their own determination of when they can release their reserved pipeline capacity. Some LDCs are not allowed by their state regulator to share in the profits of releasing their capacity so they retain it to ensure reliability and do not spend money towards evaluating capacity release options like AMAs. If the proper incentives were in place, you may see more LDCs willing to evaluate daily customer requirements and release excess capacity/supply. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 8 | What is the problem this is trying to solve? It is only relevant in an open access market. Possibly consider the same process as is suggested for ISO’s/RTO’s in recommendation 1.1.c.34 above. Then comment AH applies to this recommendation. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Generally LDCs are pro-active in revising forecasting methodologies in response to changing circumstances. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | AGA does not support this recommendation. This process is generally standard practice for all LDCs of meaningful size. Operating requirements are subject to change based on weather, upstream operations, and utility operations. Available capacity determined by a reforecast does not necessarily mean it would be prudent operations to release capacity not needed to meet the utility’s instantaneous demand at that point in the day. Moreover, this should be left up to the state commissions. Additionally, there should not be a requirement to release capacity, as LDCs have an obligation to serve which takes precedent. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | O |  | This would appear to make gas service less reliable. Proposals to require LDCs to re-forecast demand and reserve calculations appear to have the potential impact of degrading the reliability of natural gas distribution service for our members who purchase such services. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S |  | The issue of LDC capacity reserves and release practices should be examined in certain regions. However, a recommendation to modify procurement practices implies more regulatory interference than may be warranted in advance of inquiries into the practices and impacts on gas availability during critical periods. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 1 | As LDCs are one of the largest customers of pipelines, this planning would be helpful to avoid potential hoarding of capacity and its eventual release. It would also inform state PUCs on what constitutes reasonable procurement practices. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | O |  | APGA is opposed to any requirements for LDCs to develop methodologies to reforecast demand, specify reserve margin calculations, and release excess capacity and/or natural gas during extreme weather events (Recommendation 6). As discussed above, significant time and resources go into LDC, including public gas utilities, supply purchasing methodologies to ensure each system can meet its obligation to serve its customers on the highest demand days. Public gas systems already have in place mechanisms to release excess capacity when appropriate; however, such releases almost never occur during extreme weather events because of the high demand from customers. |

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| **2.** | **Measures to improve reliability of natural gas facilities during cold weather (freeze protection, electric supply)** | | | | | | |
|  | 2.a | Additional state actions (including possibly establishing an organization to set standards, as NERC does for Bulk Electric System entities) to enhance the reliability of intrastate natural gas pipelines and other intrastate natural gas facilities | | | | | |
|  |  | *Recommendation 7* | *Consider resiliency requirements for gas infrastructure similar to those of other critical facilities.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | NA |  | There is not enough information to fully understand this recommendation. The Texas Railroad Commission has acted in this space and their actions could be informative for other regions. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 1 | Action:  1. NAESB or another organization should identify the available options for each component of the gas and electric supply chain to be able to provide reliable service. See discussion for more detail.  2. State and Federal policy should establish that All participants in the gas and electric industries must do their part to ensure that their equipment functions during critical times. 3. State and Federal policy should set requirements for reporting of a: Resiliency actions taken and b: scheduled maintenance and c: unscheduled down times, much like the notices required by pipelines today.  4. NAESB should set standards for provision of the information described in Action 3 above.   Discussion: This is one of the most important recommendations in this survey. This evaluation should begin with the American Gas Foundation Resiliency Study. Resiliency must be evaluated for each component, solutions to prevent down time identified, and standards set. These components should include, but not be limited to: Wellheads, Gathering interconnects, Compression, Meters, Gas Processing Plants (multiple components), Pipeline interconnects, In-ground storage (including compression and metering), Above Ground Storage (including compression and metering), deliver meters, consumer meters (including to generators), electric generators (all sizes, multiple components), long haul transmission, electric substations, battery storage units, local transmission and electric delivery meters. Electric supply should include review of solar generation, fueled generation (gas, coal, oil), wind, hydro, battery, nuclear and geothermal in this process – it is not a solely gas issue on the electric side. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | S |  | Xcel Energy strongly supports this proposal. This would dovetail with removal of standard NAESB contract forms dictating that cold weather constitutes a force majeure event. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | Blanket requirements could add significant costs and this seems overly broad. Moreover, this is a matter for the states and LDCs work with their state regulators on such matters, |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S | 1 | AF&PA and PGC support the FERC and the states adopting additional resiliency requirements for gas infrastructure, subject to their jurisdictions, to prevent weather-related freeze-ups and fuel shortages, which appear to have been the primary issue in recent cold-weather events. However, it is important to demonstrate that they are cost-effective. To the extent they are cost-effective, additional resiliency requirements for gas infrastructure should be implemented as soon as practical and the costs allocated to the beneficiaries of such services. |
| John Stevenson | | | NYISO | WEQ Independent Grid Operator & Planner | S | 1 | While the NYISO’s Day-Ahead Market scheduling process works efficiently with natural gas nomination opportunities, enhancements to the natural gas scheduling process could provide electric generators with increased flexibility that will be necessary to support electric system reliability under the changing generation and load conditions discussed throughout this report.  Additional nomination opportunities over weekends and holidays would more efficiently support electric generation. Generators would be able to procure gas that aligns closer to their electric generation needs, which could vary dramatically over a two- or three-day weekend, or the five-day period around the Thanksgiving holiday. Forecasting electric generation and corresponding natural gas needs several days in advance increases uncertainty today and will prove more difficult in the future with higher penetration of intermittent generation.   The NYISO is planning for the eventual deactivation of natural gas-fired electric generators in response to public policy in New York State. However, natural gas-fueled generators will be required to maintain electric system reliability until sufficient new resources with similar operating attributes are developed and connected to the electric system. Flexible natural gas nominations will be critical to balance the intermittency of wind and solar resources until new flexible clean technologies are developed and deployed consistent with New York State’s CLCPA mandates.  The NYISO encourages consideration of the following potential improvements:  1. Aligning natural gas nomination scheduling requirements more closely with actual deliveries (i.e., permit hourly gas nominations).  2. Shortening the time commitments associated with natural gas deliveries (i.e., hourly gas nominations), particularly when actual temperatures deviate from forecasts.  3. Development of non-traditional gas market products and a secondary market for the resale of unused gas that are responsive to changing electric market system needs (e.g., the ability to start or ramp-up natural gas fired generation to address wind lulls, or the ramp-down of solar production on summer afternoons).  4. Hardening/winterization of natural gas infrastructure and designation/identification of critical interdependent facilities (natural gas and other fuel supply infrastructure, communication infrastructure, etc.).    With the increasing number of intermittent electricity resources being installed and increasing variability in electric load, natural gas-fired power plants will be called on to utilize their fast start and quick ramping capability to respond and serve as a backstop to maintain the reliability of the power grid. As a result, pipelines will be asked to deliver large volumes of natural gas on short notice, a major shift from the traditional model of supplying natural gas to industrial and local distribution markets. The potential improvements proposed here by the NYISO would increase market opportunities for natural gas producers and pipelines and increase flexibility for electric generators. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S |  | Consideration of weatherization for natural gas facilities is needed to address critical supply chain concerns as experienced in Winter Storm Elliott. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 1 | This is an appropriate physical and cybersecurity step although it should happen irrespective of whether there is additional gas/electric harmonization. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S |  | APGA is also generally supportive of measures to increase resiliency (Recommendations 7-8), so long as such costs are appropriately allocated. |

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| **2.** | **Measures to improve reliability of natural gas facilities during cold weather (freeze protection, electric supply)** | | | | | | |
|  | 2.a | Additional state actions (including possibly establishing an organization to set standards, as NERC does for Bulk Electric System entities) to enhance the reliability of intrastate natural gas pipelines and other intrastate natural gas facilities | | | | | |
|  |  | *Recommendation 8* | *Consider the implementation of recommendations from the American Gas Foundation Resiliency Study as appropriate within state jurisdictions.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 2 | Action:  1. NAESB or another organization should identify the available options for each component of the gas and electric supply chain to be able to provide reliable service. See discussion for more detail.  2. State and Federal policy should establish that All participants in the gas and electric industries must do their part to ensure that their equipment functions during critical times. 3. State and Federal policy should set requirements for reporting of a: Resiliency actions taken and b: scheduled maintenance and c: unscheduled down times, much like the notices required by pipelines today.  4. NAESB should set standards for provision of the information described in Action 3 above.   Discussion: This is one of the most important recommendations in this survey. This evaluation should begin with the American Gas Foundation Resiliency Study. Resiliency must be evaluated for each component, solutions to prevent down time identified, and standards set. These components should include, but not be limited to: Wellheads, Gathering interconnects, Compression, Meters, Gas Processing Plants (multiple components), Pipeline interconnects, In-ground storage (including compression and metering), Above Ground Storage (including compression and metering), deliver meters, consumer meters (including to generators), electric generators (all sizes, multiple components), long haul transmission, electric substations, battery storage units, local transmission and electric delivery meters. Electric supply should include review of solar generation, fueled generation (gas, coal, oil), wind, hydro, battery, nuclear and geothermal in this process – it is not a solely gas issue on the electric side. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Many of the items listed above are already considered in the state review of integrated resource plans in place in a vertically integrated market. Additional requirements would be duplicative. Additionally, none of the recommendations have the potential to increase gas capacity or the gas commodity. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | N/A |  | We are not familiar with this study. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | This should be left up to each state. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S |  | APGA is also generally supportive of measures to increase resiliency (Recommendations 7-8), so long as such costs are appropriately allocated. |

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| **2.** | **Measures to improve reliability of natural gas facilities during cold weather (freeze protection, electric supply)** | | | | | | |
|  | 2.a | Additional state actions (including possibly establishing an organization to set standards, as NERC does for Bulk Electric System entities) to enhance the reliability of intrastate natural gas pipelines and other intrastate natural gas facilities | | | | | |
|  |  | *Recommendation 9* | *Consider a review of state policies to ensure that requirements placed upon LDCs to procure reserves are appropriate, efficient and align with other state policies, such as electrification and decarbonization.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 7 | Who would be the entity to provide this data. Pipelines are not involved in the pricing of gas. The price of the gas transportation is already disclosed in the Capacity Release Award process. That is the pipeline’s only involvement in pricing. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Many of the items listed are already considered in the state review of integrated resource plans in place in a vertically integrated market. Additional requirements would be duplicative. Additionally, none of the recommendations have the potential to increase gas capacity or the gas commodity. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Not clear what the problem is here. Do not see a role for this forum on this issue. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | AGA does not support this recommendation as the demand characteristics, operational requirements, and available upstream resources (and ultimately the required reserves) are unique and different for every LDC. Moreover, this should be left up to each state. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | O |  | Proposals to require LDCs to re-forecast demand and reserve calculations appear to have the potential impact of degrading the reliability of natural gas distribution service for our members who purchase such services. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 2 | As LDCs are one of the largest customers of pipelines, this planning would be helpful to avoid potential hoarding of capacity and its eventual release. It would also inform state PUCs on what constitutes reasonable procurement practices. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | O |  | APGA would also like to reiterate the fact that almost all of its members are owned, operated, and governed by the communities that they serve. This means each locality sets rates and policies for its natural gas distribution system, not the state public utility commission. In this way, communities are able to set policies for their utility that best meet the needs and resources of the community. Accordingly, requiring the 1,000 public gas systems across the country to change their procurement practices (Recommendation 9) is not a viable solution to the issues with which the GEH Forum has been tasked to addressed. |

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| **2.** | **Measures to improve reliability of natural gas facilities during cold weather (freeze protection, electric supply)** | | | | | | |
|  | 2.b | Programs to encourage and provide compensation opportunities for natural gas infrastructure facility winterization | | | | | |
|  |  | *Recommendation 1* | *Consider targeted requirements for critical gas facilities reliant on electric power for operations, along the supply chain to maintain on-site gas generation, deploy resiliency strategies, such as microgrids, or maintain other forms of back-up generation.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | O |  | This recommendation is overly broad and any requirements must be carefully considered prior to mandating any specific strategies given that each facility is unique. States can further analyze specific needs and potential solutions that may be more tailored than those proposed in this recommendation. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S |  | Action:  1. NAESB or another organization should identify the available options for each component of the gas and electric supply chain to be able to provide reliable service. See discussion for more detail.  2. State and Federal policy should establish that All participants in the gas and electric industries must do their part to ensure that their equipment functions during critical times. 3. State and Federal policy should set requirements for reporting of a: Resiliency actions taken and b: scheduled maintenance and c: unscheduled down times, much like the notices required by pipelines today.  4. NAESB should set standards for provision of the information described in Action 3 above.   Discussion: This is one of the most important recommendations in this survey. This evaluation should begin with the American Gas Foundation Resiliency Study. Resiliency must be evaluated for each component, solutions to prevent down time identified, and standards set. These components should include, but not be limited to: Wellheads, Gathering interconnects, Compression, Meters, Gas Processing Plants (multiple components), Pipeline interconnects, In-ground storage (including compression and metering), Above Ground Storage (including compression and metering), deliver meters, consumer meters (including to generators), electric generators (all sizes, multiple components), long haul transmission, electric substations, battery storage units, local transmission and electric delivery meters. Electric supply should include review of solar generation, fueled generation (gas, coal, oil), wind, hydro, battery, nuclear and geothermal in this process – it is not a solely gas issue on the electric side. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | rather, use market tools that devalue unreliable gas service. |
| Catherine Elder | | | Aspen Environmental Group | N/A | S |  | Need to more carefully define “facilities” but some sort of back up to electricity is a good idea now that we depend on gas to generate electricity |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S |  | FERC, working with the electric system operators and pipelines, should provide requirements for critical gas facilities. However, the costs of meeting such requirements should be allocated to electric service to follow cost causation principles. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | O |  | APGA is concerned that the costs of the proposed recommendations (Recommendations 1-2) would be so high that they may actually discourage natural gas supply and transportation in certain parts of the country, which would be contrary to the Forum’s goals of ensuring sufficient supplies. Furthermore, APGA is also extremely cautious about making potential language changes to the NASEB Base Contract’s force majeure clause and would need additional details before taking a position on whether such change would be an effective tool to improve the reliability and resiliency of the natural gas delivery system. |

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| **2.** | **Measures to improve reliability of natural gas facilities during cold weather (freeze protection, electric supply)** | | | | | | |
|  | 2.b | Programs to encourage and provide compensation opportunities for natural gas infrastructure facility winterization | | | | | |
|  |  | *Recommendation 2* | *Consider strategies or requirements to incentivize the modernization and weatherization of production, gathering, processing, transmission and storage of natural gas infrastructure, such as changes to force majeure language in the NAESB Base Contract for Sale and Purchase of Natural Gas.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | O |  | While NGSA would be open to consideration of incentives for weatherization improvements, removing force majeure outs in contracts would increase risks and costs to gas customers. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S |  | This list should include components on the electric side so that the correct incentives are in place for all participants in the value chain. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | S |  | Strongly support elimination of the force majeure cold weather language in the standard NAESB gas supply contract. Elimination of this language would create a market incentive for gas suppliers to weatherize their equipment. In addition, requiring postings of gas supplier freeze-offs would provide a measure of transparency that would help purchasers identify more reliable gas suppliers. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | S |  | While there may be practical concerns related to implementation, AGA supports strategies or requirements to incent weatherization and resiliency upgrades of natural gas infrastructure, recognizing there are challenging jurisdictional questions that would need to be addressed. AGA supports legislation or economic incentives that make weatherization or resilience investment likely or otherwise mandatory, compared to strictly voluntary standards. AGA supports the consideration of revisions to the NAESB based contract, e.g., the force majeure provision. Moreover, such efforts should be prioritized. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S |  | Totally support. Winterization is not that expensive and we paid more than enough during Uri to cover the cost. It is unconscionable that a producer or operator or gatherer or processor can claim force majeure when they failed to winterize their facilities: freeze off should be excluded from the allowed causes of force majeure. Winterizing (and modifying the associated contract language) is among the very most important steps we can take to preserve gas service to power plants and protect life. The NAESB base contract could also be modified to add a check box indicating whether the gas is known to come from a winterized source or has a certificate verifying it to be winterized. That in and of itself might be a good starting point. |
| Michele Richmond | | | Texas Competitive Power Advocates (TCPA) | WEQ Generator |  |  | Further work is needed to modify the force majeure language in the NAESB Base Contract for Sale and Purchase of Natural Gas to remove any ambiguity from the current language as to what constitutes a true force majeure event. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S |  | FERC, relying on its jurisdiction over matters affecting interstate transportation of natural gas service, should work with the states to take any necessary steps to require changes to contracts or modernization and weatherization of facilities that adversely impact such service. |
| John Stevenson | | | NYISO | WEQ Independent Grid Operator & Planner | S |  | While the NYISO’s Day-Ahead Market scheduling process works efficiently with natural gas nomination opportunities, enhancements to the natural gas scheduling process could provide electric generators with increased flexibility that will be necessary to support electric system reliability under the changing generation and load conditions discussed throughout this report.  Additional nomination opportunities over weekends and holidays would more efficiently support electric generation. Generators would be able to procure gas that aligns closer to their electric generation needs, which could vary dramatically over a two- or three-day weekend, or the five-day period around the Thanksgiving holiday. Forecasting electric generation and corresponding natural gas needs several days in advance increases uncertainty today and will prove more difficult in the future with higher penetration of intermittent generation.   The NYISO is planning for the eventual deactivation of natural gas-fired electric generators in response to public policy in New York State. However, natural gas-fueled generators will be required to maintain electric system reliability until sufficient new resources with similar operating attributes are developed and connected to the electric system. Flexible natural gas nominations will be critical to balance the intermittency of wind and solar resources until new flexible clean technologies are developed and deployed consistent with New York State’s CLCPA mandates.  The NYISO encourages consideration of the following potential improvements:  1. Aligning natural gas nomination scheduling requirements more closely with actual deliveries (i.e., permit hourly gas nominations).  2. Shortening the time commitments associated with natural gas deliveries (i.e., hourly gas nominations), particularly when actual temperatures deviate from forecasts.  3. Development of non-traditional gas market products and a secondary market for the resale of unused gas that are responsive to changing electric market system needs (e.g., the ability to start or ramp-up natural gas fired generation to address wind lulls, or the ramp-down of solar production on summer afternoons).  4. Hardening/winterization of natural gas infrastructure and designation/identification of critical interdependent facilities (natural gas and other fuel supply infrastructure, communication infrastructure, etc.).   With the increasing number of intermittent electricity resources being installed and increasing variability in electric load, natural gas-fired power plants will be called on to utilize their fast start and quick ramping capability to respond and serve as a backstop to maintain the reliability of the power grid. As a result, pipelines will be asked to deliver large volumes of natural gas on short notice, a major shift from the traditional model of supplying natural gas to industrial and local distribution markets. The potential improvements proposed here by the NYISO would increase market opportunities for natural gas producers and pipelines and increase flexibility for electric generators. |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | S |  | Forecasted extreme temperatures should not be a justification for force majeure. A transportation provider or producer selling firm transportation or supply and then shutting down due to expected cold temperatures should not be in the same category for force majeure as earthquakes, tornadoes or other acts of god. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S |  | More transparency around pipeline flow data and possible modifications of Force Majeure provisions in the standard NAESB base contract would increase the ability to validate any force majeure claims in both interstate and intrastate markets. Consideration of weatherization for natural gas facilities is needed to address critical supply chain concerns as experienced in Winter Storm Elliott. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S |  | This is a very important issue that would clearly be in the scope of this forum. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | O |  | APGA is concerned that the costs of the proposed recommendations (Recommendations 1-2) would be so high that they may actually discourage natural gas supply and transportation in certain parts of the country, which would be contrary to the Forum’s goals of ensuring sufficient supplies. Furthermore, APGA is also extremely cautious about making potential language changes to the NASEB Base Contract’s force majeure clause and would need additional details before taking a position on whether such change would be an effective tool to improve the reliability and resiliency of the natural gas delivery system. |

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| **2.** | **Measures to improve reliability of natural gas facilities during cold weather (freeze protection, electric supply)** | | | | | | |
|  | 2.c | Methods to streamline the process for, and eliminate barriers to, identifying, protecting, and prioritizing critical natural gas infrastructure load [See also Recommendation 28 – Guidelines to identify critical natural gas facility loads] | | | | | |
|  |  | *Recommendation 1* | *Consider a federal and state information sharing effort between electric system operators and critical natural gas facility operators to identify the circuits for critical natural gas facilities that are powered solely by electricity and ensure that they are protected from load shed.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | S | 2 | The Texas Railroad Commission has acted in this space and their actions could be informative to other regions. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 2 | Action:  1. NAESB or another organization should identify the available options for each component of the gas and electric supply chain to be able to provide reliable service. See discussion for more detail.  2. State and Federal policy should establish that All participants in the gas and electric industries must do their part to ensure that their equipment functions during critical times. 3. State and Federal policy should set requirements for reporting of a: Resiliency actions taken and b: scheduled maintenance and c: unscheduled down times, much like the notices required by pipelines today.  4. NAESB should set standards for provision of the information described in Action 3 above.   Discussion: This is one of the most important recommendations in this survey. This evaluation should begin with the American Gas Foundation Resiliency Study. Resiliency must be evaluated for each component, solutions to prevent down time identified, and standards set. These components should include, but not be limited to: Wellheads, Gathering interconnects, Compression, Meters, Gas Processing Plants (multiple components), Pipeline interconnects, In-ground storage (including compression and metering), Above Ground Storage (including compression and metering), deliver meters, consumer meters (including to generators), electric generators (all sizes, multiple components), long haul transmission, electric substations, battery storage units, local transmission and electric delivery meters. Electric supply should include review of solar generation, fueled generation (gas, coal, oil), wind, hydro, battery, nuclear and geothermal in this process – it is not a solely gas issue on the electric side. |
| Gene Nowak | | | Kinder Morgan | WGQ Pipeline | S | 1 | § Commenters support this recommendation and provide the following suggestions: § Gas facility operators should identify and update as necessary inventories of critical gas facilities that are powered solely by electricity. Critical gas facility operators should make the information available to electric system operators via a standardized format in a mutually agreeable electronic method. § This should apply to all gas facility operators (producers, gatherers, LDC etc.), not just interstate pipelines. § Some of this effort has already been requested by various state regulatory bodies. The process could be enhanced by developing NAESB standards for consistency of content and timing of updates. If needed it could be added to NAESB’s Annual Plan for each quadrant as applicable. Each quadrant would then prioritize this work as appropriate. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | These processes are generally already in place. Do not see a need for further engagement on this issue through this forum. |
| Rachel A. Hogge | | | BHE GT&S | WGQ Pipeline | S | 1 | If the Forum Panel pursues this recommendation, INGAA urges the Forum to consider how other regulators determine whether facilities are “critical” to avoid conflicting definitions of the term. For example, TSA issues Pipeline Security Guidelines which include a list of criteria for criticality developed by the agency and in consultation with industry. |
| Catherine Elder | | | Aspen Environmental Group | Observer |  |  | Circuits? Is the need to identify circuits or is it the facilities themselves? If the latter, then this duplicates item 1 from the prior question. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S | 1 | States and the federal government should identify critical circuits and critical natural gas facilities to make sure they are not subject to load shedding as soon as possible, as this was an issue in Storm Uri. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S | 3 | For Recommendations 1-5 in this section, properly designed market incentives should signal and support the desired resource, service, or behavior. |
| Christopher Smith | | | INGAA | WGQ Pipeline | S | 1 | If the Forum Panel pursues this recommendation, INGAA urges the Forum to consider how other regulators determine whether facilities are “critical” to avoid conflicting definitions of the term. For example, TSA issues Pipeline Security Guidelines which include a list of criteria for criticality developed by the agency and in consultation with industry. |
| Kim Van Pelt | | | Boardwalk | WGQ Pipeline | S | 1 | If the Forum Panel pursues this recommendation, INGAA urges the Forum to consider how other regulators determine whether facilities are “critical” to avoid conflicting definitions of the term. For example, TSA issues Pipeline Security Guidelines which include a list of criteria for criticality developed by the agency and in consultation with industry. |
| Steven McCord | | | TC Energy Corporation | WGQ Pipeline | S | 1 | If the Forum Panel pursues this recommendation, INGAA urges the Forum to consider how other regulators determine whether facilities are “critical” to avoid conflicting definitions of the term. For example, TSA issues Pipeline Security Guidelines which include a list of criteria for criticality developed by the agency and in consultation with industry. |
| Christopher Burden | | | Enbridge | WGQ Pipeline | S | 1 | If the Forum Panel pursues this recommendation, INGAA urges the Forum to consider how other regulators determine whether facilities are “critical” to avoid conflicting definitions of the term. For example, TSA issues Pipeline Security Guidelines which include a list of criteria for criticality developed by the agency and in consultation with industry. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 4 | Electric-fired compression is already considered a critical load in PJM |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S | 1 | APGA is extremely supportive of information sharing efforts that will help identify critical natural gas facilities that are powered by electricity to ensure that they are protected from load shed (Recommendation 1). This will help to alleviate some of the issues experienced during 2021’s Winter Storm Uri and help prevent the energy industry from “shooting itself in the foot” by further perpetuating energy shortages during extreme weather events. |

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| **2.** | **Measures to improve reliability of natural gas facilities during cold weather (freeze protection, electric supply)** | | | | | | |
|  | 2.c | Methods to streamline the process for, and eliminate barriers to, identifying, protecting, and prioritizing critical natural gas infrastructure load [See also Recommendation 28 – Guidelines to identify critical natural gas facility loads] | | | | | |
|  |  | *Recommendation 2* | *Consider the establishment of natural gas curtailment plans as part of tariffs or state commission orders that define priorities for natural gas customers.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | O |  | Interstate pipelines determine priority by contract and eliminating the sanctity of contracts in that market would undermine existing contracts and discourage generators from contracting, which should be a priority objective in this Forum. Curtailment plans should only be considered for LDC system load where LDCs (unlike pipelines) perform a merchant function and are buying system supply gas for human needs customers and others. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 1 | 1. Establish a Force Majeure priority plan that is consistent between gas and electric users (considering that some categories will not apply in both cases) and that is consistent across states.  2. Establish standards for utilization of Force Majeure priority plan when both gas users and electric users are dependent on the same flow of gas.  Discussion: This should apply to both natural gas and electric customers. Gas and electric distributors have the technological ability today to electronically control the flow of gas and electricity to critical customers in the event of a force majeure. A comprehensive curtailment priority definition across states would allow appropriate forecasting of gas and electric demands during an event so that all parties in the supply chain can respond to the entire customer base. Otherwise there may be conflicting priorities for supply chain participants in the interstate marketplace and upstream of interstate transportation. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | These processes are generally already in place. Do not see a need for further engagement on this issue through this forum. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | AGA does not support this recommendation as this is generally already done by each utility as required by statute or for operational procedures. Moreover, pipelines already do this. |
| Catherine Elder | | | Aspen Environmental Group | Observer |  |  | This should already exist pursuant to the NGPA. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | O |  | AF&PA and PGC oppose any changes to the pro-rata curtailment of firm transportation services provide in the FERC tariffs for services that the contract for. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 2 | The human needs definition should be reviewed as human needs require both the maintenance of electric as well as natural gas service. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | O |  | APGA is not supportive of establishing natural gas curtailment plans as part of tariffs or state commission orders that define natural gas curtailment orders (Recommendation 3). There are over 1,000 publicly owned natural gas utility systems throughout the country. Almost all set the rates at the local level. Any overarching curtailment or prioritization plan is inappropriate and impractical to implement. Furthermore, APGA members purchase natural gas at a premium under firm contracts to ensure delivery on the highest demand days. Any action that may interfere with these contracts, which require significant planning and resources to execute appropriately, is not a viable solution to the issues the GEH Forum has been addressing. |

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| **2.** | **Measures to improve reliability of natural gas facilities during cold weather (freeze protection, electric supply)** | | | | | | |
|  | 2.c | Methods to streamline the process for, and eliminate barriers to, identifying, protecting, and prioritizing critical natural gas infrastructure load [See also Recommendation 28 – Guidelines to identify critical natural gas facility loads] | | | | | |
|  |  | *Recommendation 3* | *Consider increased collaboration between pipelines and RTOs to shift generation to areas where gas is available in accordance with planning targets.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | O |  | Too vague to understand what is being requested. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | RTOs and ISOs are not responsible for resource planning. Their role is to interconnect generators and provide transmission service. Developers have awareness of the location of gas infrastructure and do not need involvement from RTOs/ISOs on that point. Do not support this proposal. |
| Rachel A. Hogge | | | BHE GT&S | WGQ Pipeline | S | 2 | INGAA is open to consideration of increased discussions regarding siting of natural gas-fired generation. Interstate natural gas pipelines might have limited ability to contribute to those conversations, however, because they do not have a complete understanding of each generator’s contracts (e.g., generator might have purchased bundle from marketer). INGAA encourages RTOs/ISOs to discuss these issues directly with generators. In addition, historic information will not necessarily indicate where capacity is “available” going forward. Shippers may choose not to renew contract on a fully subscribed pipe or firm shippers may execute a contract for available capacity prior to the gas generator coming online. |
| Matthew Agen | | | American Gas Association | WGQ Distributor |  |  | Natural gas fired generators should be doing this during planning stages and should not receive special legislative backing. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S | 1 | FERC allows CAISO today to shift generation away from generation served by SoCalGas -- an outcome after the Aliso Canyon leak. This could be expanded within RTO’s so that the dispatcher can shift to any facility when needed to keep the lights on. |
| Christopher Smith | | | INGAA | WGQ Pipeline | S | 2 | INGAA is open to consideration of increased discussions regarding siting of natural gas-fired generation. Interstate natural gas pipelines might have limited ability to contribute to those conversations, however, because they do not have a complete understanding of each generator’s contracts (e.g., generator might have purchased bundle from marketer). INGAA encourages RTOs/ISOs to discuss these issues directly with generators. In addition, historic information will not necessarily indicate where capacity is “available” going forward. Shippers may choose not to renew contract on a fully subscribed pipe or firm shippers may execute a contract for available capacity prior to the gas generator coming online. |
| Kim Van Pelt | | | Boardwalk | WGQ Pipeline | S | 2 | INGAA is open to consideration of increased discussions regarding siting of natural gas-fired generation. Interstate natural gas pipelines might have limited ability to contribute to those conversations, however, because they do not have a complete understanding of each generator’s contracts (e.g., generator might have purchased bundle from marketer). INGAA encourages RTOs/ISOs to discuss these issues directly with generators. In addition, historic information will not necessarily indicate where capacity is “available” going forward. Shippers may choose not to renew contract on a fully subscribed pipe or firm shippers may execute a contract for available capacity prior to the gas generator coming online. |
| Steven McCord | | | TC Energy Corporation | WGQ Pipeline | S | 2 | INGAA is open to consideration of increased discussions regarding siting of natural gas-fired generation. Interstate natural gas pipelines might have limited ability to contribute to those conversations, however, because they do not have a complete understanding of each generator’s contracts (e.g., generator might have purchased bundle from marketer). INGAA encourages RTOs/ISOs to discuss these issues directly with generators. In addition, historic information will not necessarily indicate where capacity is “available” going forward. Shippers may choose not to renew contract on a fully subscribed pipe or firm shippers may execute a contract for available capacity prior to the gas generator coming online. |
| Christopher Burden | | | Enbridge | WGQ Pipeline | S | 2 | INGAA is open to consideration of increased discussions regarding siting of natural gas-fired generation. Interstate natural gas pipelines might have limited ability to contribute to those conversations, however, because they do not have a complete understanding of each generator’s contracts (e.g., generator might have purchased bundle from marketer). INGAA encourages RTOs/ISOs to discuss these issues directly with generators. In addition, historic information will not necessarily indicate where capacity is “available” going forward. Shippers may choose not to renew contract on a fully subscribed pipe or firm shippers may execute a contract for available capacity prior to the gas generator coming online. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S | 2 | APGA is also supportive of increased collaboration between pipelines and RTOs to shift generation to areas where gas is available (Recommendation 3), so long as it does not impact those who contract for firm capacity, such as public gas utilities |

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| **2.** | **Measures to improve reliability of natural gas facilities during cold weather (freeze protection, electric supply)** | | | | | | |
|  | 2.c | Methods to streamline the process for, and eliminate barriers to, identifying, protecting, and prioritizing critical natural gas infrastructure load [See also Recommendation 28 – Guidelines to identify critical natural gas facility loads] | | | | | |
|  |  | *Recommendation 4* | *Consider the adoption of emergency preparedness plans that include items such as Jones Act waivers as well as short-term waivers of air emission limits, RPS requirements, and pipeline quality specifications.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Matthew Agen | | | American Gas Association | WGQ Distributor |  |  | This is overly broad. Additionally, it could lead to low quality gas flowing from the interstate pipelines. That gas may not be approved at the state level which would cause issues for LDCs. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S | 3 | Not sure pipeline quality needs to be on this list. On the Jones Act, would there really be tankers out there that we could ever divert quickly enough to get them to a US port if they were not already in port? Otherwise fine. Make reliability the priority. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S | 3 | Support emergency plans and waivers except gas quality. We support the adoption of an emergency preparedness plan to all items listed except for waiver of pipeline quality specifications. Some of our members use this gas as a feedstock and may not be able to withstand changes in quality specifications of the gas that they consume. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S | 1 | Defining conditions which trigger Jones Act and related environmental waivers in preparation for emergency periods is critical for such operations, as is prioritization of generators as human needs resources to ensure service during curtailment periods. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 1 | RTOs have used Section 202c applications for just this purpose. DOE has been responsive but an approach that doesn’t require the naming of specific generators would be helpful to allow for flexibility at the start of and not during an event |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S | 3 | Additionally, APGA supports the adoption of emergency preparedness plans (Recommendation 4). In concept, APGA supports Jones Act waivers as a part of these plans. However, such a plan would be short-sighted, as the waiver of the Jones Act is an indication that insufficient infrastructure exists to deliver gas safely and reliably to the places that need it most. Instead, NAESB and others should focus on addressing the larger issue: our country’s need for additional natural gas infrastructure, including but not limited to new pipelines, capacity expansions on existing pipelines, storage, and peak shaving. Similarly, any repeated need to waive air emissions limits and renewable portfolio standards (RPS) requirements suggest flaws in the underlying permits and policies. With regards to such emergency plans, APGA is opposed to the waiver of pipeline quality specifications unless it can be demonstrated that such a waiver would not impact the safe delivery and use of natural gas from transportation through to the end customer. |

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| **3.** | **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased** | | | | | | |
|  | 3.a | Which entity has authority to require certain natural gas-fired generating units to obtain either firm supply and/or transportation or dual fuel capability, under what circumstances such requirements would be cost-effective, and how such requirements could be structured, including associated compensation mechanisms, whether additional infrastructure buildout would be needed, and the consumer cost impacts of such a buildout | | | | | |
|  |  | *Recommendation 1* | *Consider electric market reforms/mechanisms that allow for cost recovery for certainty in fuel procurement and transportation costs, similar to those in place by LDCs and vertically integrated utilities.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Gene Nowak | | | Kinder Morgan | WGQ Pipeline | S | 2 | Commenters support this recommendation and offers that the aggregated pipeline EBB information should be made available by each ISO/RTO applicable to its service area and market participants and could include applicable: • Critical Notice information • Planned Service Outages • Available Capacity • Unsubscribed Capacity This is only the aggregation of information provided according to NAESB standards and could be added to NAESB’s Annual Plan for the WEQ Quadrant and prioritized as appropriate. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Do not support this proposal broadly, but do support cost recovery mechanisms for generators during extreme weather when coupled with forward unit commitments. |
| Rachel A. Hogge | | | BHE GT&S | WGQ Pipeline | S | 1 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services.   INGAA urges the Forum Panel to jointly pursue all the recommendations within this section that INGAA supports. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Matthew Agen | | | American Gas Association | WGQ Distributor |  |  | AGA is concerned about items that shift risk from generators onto customers. AGA could support new market mechanisms so long as risk remains with generators and there are concerns about cost-of-service recovery for generators for fuel contracts. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S | 1 | Totally support; this is so critical and once they can recover the cost, impose penalties for not operating when called. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S | 1 | Cost recovery mechanisms for fuel supply is particularly necessary for critical periods – and is allowed in some markets but not utilized. Cost recovery needs to include make whole payments when a generator is on notice for dispatch but is not run and thus purchased gas which is not used and often sold at a financial loss. |
| Christopher Smith | | | INGAA | WGQ Pipeline | S | 1 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services.   INGAA urges the Forum Panel to jointly pursue all the recommendations within this section that INGAA supports. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Kim Van Pelt | | | Boardwalk | WGQ Pipeline | S | 1 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services.   INGAA urges the Forum Panel to jointly pursue all the recommendations within this section that INGAA supports. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Steven McCord | | | TC Energy Corporation | WGQ Pipeline | S | 1 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services.   INGAA urges the Forum Panel to jointly pursue all the recommendations within this section that INGAA supports. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Christopher Burden | | | Enbridge | WGQ Pipeline | S | 1 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services.   INGAA urges the Forum Panel to jointly pursue all the recommendations within this section that INGAA supports. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | In PJM there is an established system for generators to recover their fuel costs. There is not recovery presently for gas purchased for generation which is ultimately not otherwise committed (the ‘stranded gas’ issue) . There are many facets and trade-offs on this issue which need to be considered and could be discussed although these rules are specific to each RTO and are being considered in individual RTO planning processes. |

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| **3.** | **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased** | | | | | | |
|  | 3.a | Which entity has authority to require certain natural gas-fired generating units to obtain either firm supply and/or transportation or dual fuel capability, under what circumstances such requirements would be cost-effective, and how such requirements could be structured, including associated compensation mechanisms, whether additional infrastructure buildout would be needed, and the consumer cost impacts of such a buildout | | | | | |
|  |  | *Recommendation 2* | *Consider firm service or storage requirements or the adoption of reliability or must-run agreements for generators as a condition of participation in the wholesale electric markets.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | S |  | NGSA supports developing market mechanisms that encourage a reliable portfolio, but we do not support a mandate on specific actions given the unique situation of each generator. |
| Gene Nowak | | | Kinder Morgan | WGQ Pipeline | S | 1 | § Commenters support this recommendation and provide the following comments: § Commenters believe that firm transportation and/or storage capacity is critical when assessing the reliability of a particular generator. The specific facts and circumstances around each particular generator would dictate the level of each unit’s contracting portfolio.  § Commenters believe that gas supply reliability requires (1) access to reliable supply, ideally from diversified supply sources, (2) firm transportation to move gas from supply areas to the generator, and (3) some level of storage service, or no-notice service that relies on balancing through line pack.  § For generators that bid into wholesale electric markets under some form of reliability or must-run service, commenters believe that there must be requirements on firm fuel supply that support these reliability/must run obligations. § This change could be accomplished by FERC rule promulgation, tariff changes within the organized markets, or perhaps through new NERC standards and prioritized as appropriate. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | This is overly broad. |
| Catherine Elder | | | Aspen Environmental Group | Observer | O |  | Not as a condition of participating in the wholesale market; maybe as a condition of counting towards resource adequacy. But this is unfair unless and until there is a way for generators to recover these costs. |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | O |  | This could be discriminatory, and with current force majeure language would not justify the requirement |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | The part of this recommendation on firm service as a condition of participation in capacity markets is already underway in a number of RTO contracts. The reference to RMR agreements is not particularly germane to the recommendation. |

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|  | 3.a | Which entity has authority to require certain natural gas-fired generating units to obtain either firm supply and/or transportation or dual fuel capability, under what circumstances such requirements would be cost-effective, and how such requirements could be structured, including associated compensation mechanisms, whether additional infrastructure buildout would be needed, and the consumer cost impacts of such a buildout | | | | | |
|  |  | *Recommendation 3* | *Consider the development of new market-based products, such as Firm Fuel Supply Services, and services that provide rapid/fast ramping and frequency services, pay-for-performance programs, and other incentives for long-term contracting arrangements.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | S | 3 | These service will likely require added gas infrastructure, which should be supported in electricity markets either through generator contracting or some other vehicle such as cost socialization in an RTO. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | These services already exist and are subject to expansion. Do not support this proposal. |
| Matthew Agen | | | American Gas Association | WGQ Distributor |  |  | Markets should determine relevant services. |
| Catherine Elder | | | Aspen Environmental Group | Observer | O | 8 | New services will do no good until there is a way for generators to recover the cost for them to purchase those services. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S |  | ISOs/RTOs are working on firm services and pay-for-performance programs/improvements at the regional level. There should be discussion on any additional vehicles or mechanisms to incent and support long-term gas contracts and/or firm fuel supply service. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 3 | See prior comments. This issue is being considered in each of the RTOs. Those processes could be informed by the NAESB process but the NAESB process should not supplant them. |

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|  |  | *Recommendation 4* | *Consider grid reliability reservation charges for utilities and renewable generators for the cost of fast-ramping resources to balance variations and volatility from renewable resource output or proof of firm, dispatchable fuel supply.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | This type of market service is already provided. Do not support this proposal. |
| Catherine Elder | | | Aspen Environmental Group | Observer | O |  | Make the renewables pay for being intermittent? But that doesn’t address freezeoffs of gas supply or frozen compressors on a gas pipeline. Nah, this does not help solve the problem. |
| John Ulloa | | | Pacific Gas & Electric Co/Electric Fuels | WEQ Generator | S | 1 | Investments in the Natural Gas Infrastructure are critical to safe and reliable operations of both the electric grid and pipeline systems. The addition of intermittent renewable resources changed the way natural gas generating resources are being utilized form their design, creating challenges in the markets. |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | O |  | This could be discriminatory, and with current force majeure language would not justify the requirement |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | Providing a tariff for ramping and related services is already being discussed. Because it is not specific to gas/electric harmonization, it appears outside the scope of this forum. |

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|  | 3.a | Which entity has authority to require certain natural gas-fired generating units to obtain either firm supply and/or transportation or dual fuel capability, under what circumstances such requirements would be cost-effective, and how such requirements could be structured, including associated compensation mechanisms, whether additional infrastructure buildout would be needed, and the consumer cost impacts of such a buildout | | | | | |
|  |  | *Recommendation 5* | *Consider the development of fuel-neutral policies to provide certainty in long-term cost recovery by electric generators that align with obligations to run, such as dual-fuel capabilities, additional transmission or transportation capabilities, storage, and/or onsite LNG.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Generally Xcel Energy supports this proposal. |
| Catherine Elder | | | Aspen Environmental Group | Observer | O |  | What has fuel neutrality got to do with anything or how would it provide cost recovery certainty? Winterization is a solution. More storage, including LNG needle peakers where underground storage is not possible is also a potential solution. But fuel neutrality? |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S | 3 | FERC should revise wholesale electric markets to the extent needed to provide long-term cost recovery for generators for their costs incurred that are required to ensure reliable electric service. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | As written, the comment is premised on ‘long term cost recovery by generators’. The RTO competitive markets are not designed to provide long term guarantees but do provide a place for procurement of competitive generation and demand response capacity on a three year forward basis or energy and ancillary services on a day ahead basis. Focusing on ‘long term’ procurement beyond those appears to be an entire redesign of the competitive market model and beyond the scope of this forum. |

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|  |  | *Recommendation 6* | *Consider de-rating generators that do not provide adequate reliability.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Gene Nowak | | | Kinder Morgan | WGQ Pipeline | S | 3 | § Commenters support these recommendations and provide the following comments: § As stated in commenter’s response to Page 16, Recommendation 2, commenters believe that firm transportation and/or storage capacity is critical when assessing the reliability of a particular generator. The specific facts and circumstances around each particular generator would dictate the level of each unit’s contracting portfolio.  § To the extent a generator cannot provide adequate reliability through an objective and documented evaluation, it stands to reason that the particular generator in question cannot be relied on by the wholesale markets to reliably provide generation to the grid. If a generator cannot reliably offer its services, de-rating, or risk weighting, that particular generator seems warranted. § These three items (recommendations 1, 2, and 6) would go a long way to provide reliability for electric generation by requiring firm gas supply and transportation and a mechanism to recoup the costs. § Reliance of day of or mid-day interruptible gas has proven to be unreliable. Firm gas purchased and scheduled ahead of the gas day is reliable (especially combined with winterization efforts being implemented by states and their regulatory agencies). § This could be assigned to NERC for further discussion, prioritization, and further development. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Such consequences already exist in terms of resource accreditation. Do not support this proposal. |
| Catherine Elder | | | Aspen Environmental Group | Observer |  |  | On the fence here. It would be nice to punish generators who don’t have the fuel to operate when we need them. But. As long as we do not allow them to recover the costs to be able to operate, this would be unfair. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | O |  | This recommendation is unclear; this issue should be addressed in thermal resource capacity accreditation in ISO/RTO stakeholder processes. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | As written, the comment is premised on ‘long term cost recovery by generators’. The RTO competitive markets are not designed to provide long term guarantees but do provide a place for procurement of competitive generation and demand response capacity on a three year forward basis or energy and ancillary services on a day ahead basis. Focusing on ‘long term’ procurement beyond those appears to be an entire redesign of the competitive market model and beyond the scope of this forum. |

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| **3.** | **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased** | | | | | | |
|  | 3.a | Which entity has authority to require certain natural gas-fired generating units to obtain either firm supply and/or transportation or dual fuel capability, under what circumstances such requirements would be cost-effective, and how such requirements could be structured, including associated compensation mechanisms, whether additional infrastructure buildout would be needed, and the consumer cost impacts of such a buildout | | | | | |
|  |  | *Recommendation 7* | *Consider new incentives to spur infrastructure investments and forward energy supply chain arrangements to meet reliability and flexibility needs of generators.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | S | 1 | Market-based and fuel-neutral mechanisms and market design that provide the right price signals that encourage commitments that support gas infrastructure investment is the best approach. However, there may instances in which the reliability risks support socialization of the costs of gas infrastructure. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Such incentives are already provided through various mechanisms, including resource accreditation and revenue for market services. |
| Rachel A. Hogge | | | BHE GT&S | WGQ Pipeline | S | 9 | In many parts of the United States, interstate natural gas pipelines are fully subscribed, and additional infrastructure is needed to meet the reliability needs of natural gas fired-generators. INGAA supports measures that incentivize and facilitate this critical infrastructure expansion, including incentives to invest in infrastructure and reforms to improve the permitting process for new infrastructure. |
| Matthew Agen | | | American Gas Association | WGQ Distributor |  |  | This should be market based, not federally incentivized. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S | 5 | Sounds great. But what does it really mean without a way for generators to recover the cost to participate in those arrangements or facilities spurred by those incentives. Maybe we mean incentives to the generators. |
| John Ulloa | | | Pacific Gas & Electric Co/Electric Fuels | WEQ Generator | S | 1 | Investments in the Natural Gas Infrastructure are critical to safe and reliable operations of both the electric grid and pipeline systems. The addition of intermittent renewable resources changed the way natural gas generating resources are being utilized form their design, creating challenges in the markets. |
| Christopher Smith | | | INGAA | WGQ Pipeline | S | 9 | In many parts of the United States, interstate natural gas pipelines are fully subscribed, and additional infrastructure is needed to meet the reliability needs of natural gas fired-generators. INGAA supports measures that incentivize and facilitate this critical infrastructure expansion, including incentives to invest in infrastructure and reforms to improve the permitting process for new infrastructure. |
| Kim Van Pelt | | | Boardwalk | WGQ Pipeline | S | 9 | In many parts of the United States, interstate natural gas pipelines are fully subscribed, and additional infrastructure is needed to meet the reliability needs of natural gas fired-generators. INGAA supports measures that incentivize and facilitate this critical infrastructure expansion, including incentives to invest in infrastructure and reforms to improve the permitting process for new infrastructure. |
| Steven McCord | | | TC Energy Corporation | WGQ Pipeline | S | 9 | In many parts of the United States, interstate natural gas pipelines are fully subscribed, and additional infrastructure is needed to meet the reliability needs of natural gas fired-generators. INGAA supports measures that incentivize and facilitate this critical infrastructure expansion, including incentives to invest in infrastructure and reforms to improve the permitting process for new infrastructure. |
| Christopher Burden | | | Enbridge | WGQ Pipeline | S | 9 | In many parts of the United States, interstate natural gas pipelines are fully subscribed, and additional infrastructure is needed to meet the reliability needs of natural gas fired-generators. INGAA supports measures that incentivize and facilitate this critical infrastructure expansion, including incentives to invest in infrastructure and reforms to improve the permitting process for new infrastructure. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | As written, the comment is premised on ‘long term cost recovery by generators’. The RTO competitive markets are not designed to provide long term guarantees but do provide a place for procurement of competitive generation and demand response capacity on a three year forward basis or energy and ancillary services on a day ahead basis. Focusing on ‘long term’ procurement beyond those appears to be an entire redesign of the competitive market model and beyond the scope of this forum. |

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|  |  | *Recommendation 8* | *Consider providing input by stakeholders and electric market operators regarding the need for natural gas as a balancing resource and/or information regarding the types of resources capabilities that may be necessary to ensure electric reliability, such as dispatchable fast ramping, if FERC moves forward in consideration of broader factors in determinations of the public interest for new infrastructure.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Forums for such input already exist. |
| Rachel A. Hogge | | | BHE GT&S | WGQ Pipeline | S | 8 | See comments on Recommendation 7. INGAA maintains its position on the factors to be considered in determining the public interest for new infrastructure. See Comments of the Interstate Natural Gas Association of America at Section II, Certification of New Interstate Natural Gas Facilities, FERC Docket No. PL18-1-000 (Apr. 25, 2022). |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | Stakeholders can already intervene. No special incentives are needed. |
| Catherine Elder | | | Aspen Environmental Group | Observer | O |  | Doesn’t address the real problem. Balancing and fast ramping is a problem in places and will probably become more of one with more electrification. But the reliability problem is due to freeze offs amid adverse weather conditions that cause higher demand yet lower supply. |
| Christopher Smith | | | INGAA | WGQ Pipeline | S | 8 | See comments on Recommendation 7. INGAA maintains its position on the factors to be considered in determining the public interest for new infrastructure. See Comments of the Interstate Natural Gas Association of America at Section II, Certification of New Interstate Natural Gas Facilities, FERC Docket No. PL18-1-000 (Apr. 25, 2022). |
| Kim Van Pelt | | | Boardwalk | WGQ Pipeline | S | 8 | See comments on Recommendation 7. INGAA maintains its position on the factors to be considered in determining the public interest for new infrastructure. See Comments of the Interstate Natural Gas Association of America at Section II, Certification of New Interstate Natural Gas Facilities, FERC Docket No. PL18-1-000 (Apr. 25, 2022). |
| Steven McCord | | | TC Energy Corporation | WGQ Pipeline | S | 8 | See comments on Recommendation 7. INGAA maintains its position on the factors to be considered in determining the public interest for new infrastructure. See Comments of the Interstate Natural Gas Association of America at Section II, Certification of New Interstate Natural Gas Facilities, FERC Docket No. PL18-1-000 (Apr. 25, 2022). |
| Christopher Burden | | | Enbridge | WGQ Pipeline | S | 8 | See comments on Recommendation 7. INGAA maintains its position on the factors to be considered in determining the public interest for new infrastructure. See Comments of the Interstate Natural Gas Association of America at Section II, Certification of New Interstate Natural Gas Facilities, FERC Docket No. PL18-1-000 (Apr. 25, 2022). |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | To the extent this recommendation invites stakeholders to provide input to existing processes, that is certainly welcome but it is unclear as to what the recommendation means as to potential action of this forum. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S | 2 | Additionally, APGA supports the consideration of the need for natural gas as a balancing resource when it comes to FERC public interest determinations for new gas infrastructure (Recommendation 8). It is important to note that generators and other participants in the BES will need to raise this need in the appropriate FERC proceedings. |

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|  | 3.a | Which entity has authority to require certain natural gas-fired generating units to obtain either firm supply and/or transportation or dual fuel capability, under what circumstances such requirements would be cost-effective, and how such requirements could be structured, including associated compensation mechanisms, whether additional infrastructure buildout would be needed, and the consumer cost impacts of such a buildout | | | | | |
|  |  | *Recommendation 9* | *Consider creating a reliability surcharge for electric customers to address costs associated with building out additional needed capacity for electric generation.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | S |  | NGSA supports this recommendation if the surcharge is intended for organized markets but not a pipeline surcharge to support what should be a contracted service. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Southern Companies do not support the use of a reliability surcharge as it socializes the cost among a large group, without defining who will be granted access to the infrastructure. We believe electric utilities already have an inherent responsibility to provide reliable and affordable energy to its customers. The establishment of a “reliability surcharge” is inconsistent with our view of the customer-centric markets. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Customers already pay for such capacity. |
| Rachel A. Hogge | | | BHE GT&S | WGQ Pipeline | S | 9 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services.   INGAA urges the Forum Panel to jointly pursue all the recommendations within this section that INGAA supports. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | This is up to the states. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S | 3 | Yes, customers ultimately have to pay for reliability. A surcharge would make it obvious and spur discussion that current rates do not cover these costs. |
| Christopher Smith | | | INGAA | WGQ Pipeline | S | 9 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services.   INGAA urges the Forum Panel to jointly pursue all the recommendations within this section that INGAA supports. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Kim Van Pelt | | | Boardwalk | WGQ Pipeline | S | 9 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services.   INGAA urges the Forum Panel to jointly pursue all the recommendations within this section that INGAA supports. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Steven McCord | | | TC Energy Corporation | WGQ Pipeline | S | 9 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services.   INGAA urges the Forum Panel to jointly pursue all the recommendations within this section that INGAA supports. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Christopher Burden | | | Enbridge | WGQ Pipeline | S | 9 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services.   INGAA urges the Forum Panel to jointly pursue all the recommendations within this section that INGAA supports. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | There is not a need for a ‘reliability surcharge’ as these costs are already recoverable through bids in the competitive market. |

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|  | 3.a | Which entity has authority to require certain natural gas-fired generating units to obtain either firm supply and/or transportation or dual fuel capability, under what circumstances such requirements would be cost-effective, and how such requirements could be structured, including associated compensation mechanisms, whether additional infrastructure buildout would be needed, and the consumer cost impacts of such a buildout | | | | | | |
|  |  | *Recommendation 10* | | *Consider incentives for additional storage infrastructure in production areas and along the pipeline system and/or additional compression.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Paul Hughes | | | Southern Company | | WEQ Generator | O |  | Southern Companies do not support the use of incentives for the development of additional capacity. Such an approach undermines and penalizes entities who have already contracted for capacity. We believe recommendations to align the regulatory framework to accommodate the pace of the energy transition would be a better approach. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | Do not support subsidies. Market should drive incremental value for such infrastructure. |
| Rachel A. Hogge | | | BHE GT&S | | WGQ Pipeline | S | 9 | In many parts of the United States, interstate natural gas pipelines are fully subscribed, and additional infrastructure is needed to meet the reliability needs of natural gas fired-generators. INGAA supports measures that incentivize and facilitate this critical infrastructure expansion, including incentives to invest in infrastructure and reforms to improve the permitting process for new infrastructure. |
| Matthew Agen | | | American Gas Association | | WGQ Distributor | O |  | AGA does not support this recommendation. Incentives for the development of incremental capacity (transportation, storage, or peak shaving) would effective subsidize the participating shippers and penalize those shippers who have already contracted for the capacity necessary to reliably meet their firm demand. Moreover, market forces should determine if additional infrastructure is needed. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S |  | Could help, but until generators can recover the cost of buying those services … Katie is becoming a broken record. |
| Christopher Smith | | | INGAA | | WGQ Pipeline | S | 9 | In many parts of the United States, interstate natural gas pipelines are fully subscribed, and additional infrastructure is needed to meet the reliability needs of natural gas fired-generators. INGAA supports measures that incentivize and facilitate this critical infrastructure expansion, including incentives to invest in infrastructure and reforms to improve the permitting process for new infrastructure. |
| Kim Van Pelt | | | Boardwalk | | WGQ Pipeline | S | 9 | In many parts of the United States, interstate natural gas pipelines are fully subscribed, and additional infrastructure is needed to meet the reliability needs of natural gas fired-generators. INGAA supports measures that incentivize and facilitate this critical infrastructure expansion, including incentives to invest in infrastructure and reforms to improve the permitting process for new infrastructure. |
| Steven McCord | | | TC Energy Corporation | | WGQ Pipeline | S | 9 | In many parts of the United States, interstate natural gas pipelines are fully subscribed, and additional infrastructure is needed to meet the reliability needs of natural gas fired-generators. INGAA supports measures that incentivize and facilitate this critical infrastructure expansion, including incentives to invest in infrastructure and reforms to improve the permitting process for new infrastructure. |
| Christopher Burden | | | Enbridge | | WGQ Pipeline | S | 9 | In many parts of the United States, interstate natural gas pipelines are fully subscribed, and additional infrastructure is needed to meet the reliability needs of natural gas fired-generators. INGAA supports measures that incentivize and facilitate this critical infrastructure expansion, including incentives to invest in infrastructure and reforms to improve the permitting process for new infrastructure. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 1 | This would be an appropriate area for further review in this forum. |

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|  |  | *Recommendation 11* | | *Consider methods to streamline the certificate review process to avoid delays and help natural gas companies better manage federal, state, and local permitting processes that can be overlapping, inconsistent, and duplicative.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Paul Hughes | | | Southern Company | | WEQ Generator | S | 2 | Southern Companies support policies designed to ensure the infrastructure supporting the natural gas supply chain can perform and keep pace with the energy transition. Such policies are critical to ensuring reliability for customers and can have broad positive impacts. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | S |  | Generally support streamlining of permitting processes but do not believe this issue should be a priority for this forum. |
| Rachel A. Hogge | | | BHE GT&S | | WGQ Pipeline | S | 4 | In many parts of the United States, interstate natural gas pipelines are fully subscribed, and additional infrastructure is needed to meet the reliability needs of natural gas fired-generators. INGAA supports measures that incentivize and facilitate this critical infrastructure expansion, including incentives to invest in infrastructure and reforms to improve the permitting process for new infrastructure. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | O |  | Hard to believe this is a real problem. Is it more of one with the War on Gas? So we need to make clear to folks that reliability hinges on these facilities? Of course, if the wells freeze there won’t be any gas so still, do winterization first! |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | | WGQ End User | S | 1 | FERC should work with states to streamline the certificate review process as soon practical. |
| Christopher Smith | | | INGAA | | WGQ Pipeline | S | 4 | In many parts of the United States, interstate natural gas pipelines are fully subscribed, and additional infrastructure is needed to meet the reliability needs of natural gas fired-generators. INGAA supports measures that incentivize and facilitate this critical infrastructure expansion, including incentives to invest in infrastructure and reforms to improve the permitting process for new infrastructure. |
| Kim Van Pelt | | | Boardwalk | | WGQ Pipeline | S | 4 | In many parts of the United States, interstate natural gas pipelines are fully subscribed, and additional infrastructure is needed to meet the reliability needs of natural gas fired-generators. INGAA supports measures that incentivize and facilitate this critical infrastructure expansion, including incentives to invest in infrastructure and reforms to improve the permitting process for new infrastructure. |
| Steven McCord | | | TC Energy Corporation | | WGQ Pipeline | S | 4 | In many parts of the United States, interstate natural gas pipelines are fully subscribed, and additional infrastructure is needed to meet the reliability needs of natural gas fired-generators. INGAA supports measures that incentivize and facilitate this critical infrastructure expansion, including incentives to invest in infrastructure and reforms to improve the permitting process for new infrastructure. |
| Christopher Burden | | | Enbridge | | WGQ Pipeline | S | 4 | In many parts of the United States, interstate natural gas pipelines are fully subscribed, and additional infrastructure is needed to meet the reliability needs of natural gas fired-generators. INGAA supports measures that incentivize and facilitate this critical infrastructure expansion, including incentives to invest in infrastructure and reforms to improve the permitting process for new infrastructure. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 2 | Not clear if this is the forum for this discussion but we are very supportive of this proposal. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | S | 1 | APGA is especially supportive of the recommendation to streamline the certificate review and permitting process for new natural gas infrastructure (Recommendation 11). |

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|  |  | *Recommendation 12* | | *Consider legislation to ensure sufficient interstate natural gas pipeline capacity at peak demand for the reliability of natural gas and electricity supply, including expediting pipeline permitting and construction and providing national oversight to ensure a smooth transition to decarbonization.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | | WGQ Producer | S |  | #11 becomes moot if permitting legislation is adopted and vice versa. |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | S | 9 | 1. Legislation for development of pipeline capacity should be evaluated to consider peak demand in light of reliability actions taken through this GEH effort. The required capacity and reserve capacity needed may change.  Discussion: The recommended legislation will be valuable but should not be in place of setting standards for reliability and hardening across the supply chain. The pipeline can have capacity, but if the upstream compressors aren’t run and don’t delivery the gas then the capacity has no value. This is a good recommendation but is not the highest priority. |
| Paul Hughes | | | Southern Company | | WEQ Generator | S | 1 | Southern Companies support policies designed to ensure the infrastructure supporting the natural gas supply chain can perform and keep pace with the energy transition. Such policies are critical to ensuring reliability for customers and can have broad positive impacts. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | The case for such legislation has not been made. Do not support without more detail on why legislation is needed. |
| Rachel A. Hogge | | | BHE GT&S | | WGQ Pipeline | S | 5 | In many parts of the United States, interstate natural gas pipelines are fully subscribed, and additional infrastructure is needed to meet the reliability needs of natural gas fired-generators. INGAA supports measures that incentivize and facilitate this critical infrastructure expansion, including incentives to invest in infrastructure and reforms to improve the permitting process for new infrastructure. |
| Matthew Agen | | | American Gas Association | | WGQ Distributor | O |  | The Natural Gas Act already exists. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | O |  | Mixes and matches unrelated concepts. Pipelines aren’t designed to meet peak demand, they’re designed to meet shipper contracts. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | | WGQ End User | S | 2 | FERC should identify any legislation it believes is necessary to ensure sufficient gas pipeline capacity on peak periods as soon as practical. |
| Christopher Smith | | | INGAA | | WGQ Pipeline | S | 5 | In many parts of the United States, interstate natural gas pipelines are fully subscribed, and additional infrastructure is needed to meet the reliability needs of natural gas fired-generators. INGAA supports measures that incentivize and facilitate this critical infrastructure expansion, including incentives to invest in infrastructure and reforms to improve the permitting process for new infrastructure. |
| Kim Van Pelt | | | Boardwalk | | WGQ Pipeline | S | 5 | In many parts of the United States, interstate natural gas pipelines are fully subscribed, and additional infrastructure is needed to meet the reliability needs of natural gas fired-generators. INGAA supports measures that incentivize and facilitate this critical infrastructure expansion, including incentives to invest in infrastructure and reforms to improve the permitting process for new infrastructure. |
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| Christopher Burden | | | Enbridge | | WGQ Pipeline | S | 5 | In many parts of the United States, interstate natural gas pipelines are fully subscribed, and additional infrastructure is needed to meet the reliability needs of natural gas fired-generators. INGAA supports measures that incentivize and facilitate this critical infrastructure expansion, including incentives to invest in infrastructure and reforms to improve the permitting process for new infrastructure. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 2 | Not clear if this is the forum for this discussion but we are very supportive of this proposal. |

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|  |  | *Recommendation 13* | | *Consider if allowing pipelines to build in reserve capacity within expansion projects to account for contingencies when faced with constrained transportation conditions and allowing pipelines to facilitate the use of third-party storage for short notice/no notice service could help in the short term.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | | WGQ Producer | NA |  | It is not a matter of allowing pipelines to expand, it is a matter of financial supporting these expansions (and showing purpose and need) and purchasing this flexibility from third-party storage providers. |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | S | 8 | 1. Legislation for development of pipeline capacity should be evaluated to consider peak demand in light of reliability actions taken through this GEH effort. The required capacity and reserve capacity needed may change.  Discussion: The recommended legislation will be valuable but should not be in place of setting standards for reliability and hardening across the supply chain. The pipeline can have capacity, but if the upstream compressors aren’t run and don’t delivery the gas then the capacity has no value. This is a good recommendation but is not the highest priority. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | S |  | Support, subject to pipeline bearing the cost (and earning the revenue) for excess usage. We do not support having the cost of excess capacity allocated to subscribers. |
| Rachel A. Hogge | | | BHE GT&S | | WGQ Pipeline | S | 6 | INGAA supports consideration of measures to expand critical natural gas infrastructure. If the Forum Panel chooses to pursue this recommendation, the Forum must determine who will pay for the “reserve capacity” on the pipeline. There is significant financial risk—in some circumstances prohibitive risk—to building pipeline capacity without a customer for that capacity. As discussed in the attached comments, pipelines should not bear that risk to the benefit of electric customers. The Forum should identify a mechanism for electric customers to pay for the reliability benefits that this recommendation provides them.  Further, pipelines should have the discretion to build “reserve capacity”; there should not be a requirement to do so. |
| Matthew Agen | | | American Gas Association | | WGQ Distributor | O |  | This is overly vague and may add incremental costs and it is not clear who would pay for this. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | O |  | No, just winterize. Who pays for the reserve capacity? Now, that latter phrase about allowing pipes to use third-party storage for short or no-notice service … maybe that is useful. But still, the pipe has to be able to bill somebody for that cost. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | | WGQ End User | O |  | Oppose unless it is clear that Gas Customers will not pay costs required for electric generators who do not purchase necessary capacity. AF&PA and PGC oppose any recommendations to build extra pipeline capacity unless FERC ensures that natural gas customers will not pay for the costs incurred to provide service to electric generators who do not pay for such capacity. |
| Joshua Phillips | | | Southwest Power Pool | | WEQ Independent Grid Operator & Planner | S | 9 | From an electrical perspective, maintaining some capacity flexibility seems prudent, however this should be explored by the industry since that is where the costs would be recovered. |
| Nancy Bagot | | | Electric Power Supply Association | | WEQ Generator | O |  | The utilization of 3rd party storage for no notice service may be feasible but this recommendation addresses different concepts with varied degrees of feasibility. |
| Christopher Smith | | | INGAA | | WGQ Pipeline | S | 6 | INGAA supports consideration of measures to expand critical natural gas infrastructure. If the Forum Panel chooses to pursue this recommendation, the Forum must determine who will pay for the “reserve capacity” on the pipeline. There is significant financial risk—in some circumstances prohibitive risk—to building pipeline capacity without a customer for that capacity. As discussed in the attached comments, pipelines should not bear that risk to the benefit of electric customers. The Forum should identify a mechanism for electric customers to pay for the reliability benefits that this recommendation provides them.  Further, pipelines should have the discretion to build “reserve capacity”; there should not be a requirement to do so. |
| Kim Van Pelt | | | Boardwalk | | WGQ Pipeline | S | 6 | INGAA supports consideration of measures to expand critical natural gas infrastructure. If the Forum Panel chooses to pursue this recommendation, the Forum must determine who will pay for the “reserve capacity” on the pipeline. There is significant financial risk—in some circumstances prohibitive risk—to building pipeline capacity without a customer for that capacity. As discussed in the attached comments, pipelines should not bear that risk to the benefit of electric customers. The Forum should identify a mechanism for electric customers to pay for the reliability benefits that this recommendation provides them.  Further, pipelines should have the discretion to build “reserve capacity”; there should not be a requirement to do so. |
| Steven McCord | | | TC Energy Corporation | | WGQ Pipeline | S | 6 | INGAA supports consideration of measures to expand critical natural gas infrastructure. If the Forum Panel chooses to pursue this recommendation, the Forum must determine who will pay for the “reserve capacity” on the pipeline. There is significant financial risk—in some circumstances prohibitive risk—to building pipeline capacity without a customer for that capacity. As discussed in the attached comments, pipelines should not bear that risk to the benefit of electric customers. The Forum should identify a mechanism for electric customers to pay for the reliability benefits that this recommendation provides them.  Further, pipelines should have the discretion to build “reserve capacity”; there should not be a requirement to do so. |
| Christopher Burden | | | Enbridge | | WGQ Pipeline | S | 6 | INGAA supports consideration of measures to expand critical natural gas infrastructure. If the Forum Panel chooses to pursue this recommendation, the Forum must determine who will pay for the “reserve capacity” on the pipeline. There is significant financial risk—in some circumstances prohibitive risk—to building pipeline capacity without a customer for that capacity. As discussed in the attached comments, pipelines should not bear that risk to the benefit of electric customers. The Forum should identify a mechanism for electric customers to pay for the reliability benefits that this recommendation provides them.  Further, pipelines should have the discretion to build “reserve capacity”; there should not be a requirement to do so. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 2 | This question goes to the planning of pipeline proposals. To the extent it calls for building in excess reserves that may not be covered by the ‘anchor tenant’ this is a ripe area for discussion in this forum. |
| Renee Lani | | | APGA | | RMQ Retail Gas Market Company | O |  | For any infrastructure development intended to solely benefit the BES, those costs should be borne by the customers of the BES and not spread across all pipeline shippers, as traditional customers, including the communities that are served by public gas utilities, have already borne the majority of costs for the development of the existing natural gas infrastructure system. Similarly, any cost spreading mechanisms developed for electric generation fuel procurement costs should be applicable only to electric customers. APGA cannot support Recommendation 13 in this category, as it is not clear who would be bearing the costs of such reserve capacity and third-party storage options, nor would such solutions necessarily be an appropriate fix in the case where supply itself is limited. |

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| **3.** | **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased** | | | | | | | |
|  | 3.a | Which entity has authority to require certain natural gas-fired generating units to obtain either firm supply and/or transportation or dual fuel capability, under what circumstances such requirements would be cost-effective, and how such requirements could be structured, including associated compensation mechanisms, whether additional infrastructure buildout would be needed, and the consumer cost impacts of such a buildout | | | | | | |
|  |  | *Recommendation 14* | | *Consider requirements for firm supply/transportation or dual fuel capability for electric generators as part of resource adequacy planning, potentially modeled on Western Power Pool’s proposed Western Resource Adequacy Program.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | | WGQ Producer | S | 10 | As noted earlier, such practices should be encouraged through market approaches but not mandated. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | O |  | Do not support imposing new requirements on WRAP at this time. |
| Rachel A. Hogge | | | BHE GT&S | | WGQ Pipeline | S | 7 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services.   INGAA urges the Forum Panel to jointly pursue all the recommendations within this section that INGAA supports. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Matthew Agen | | | American Gas Association | | WGQ Distributor |  |  | AGA could consider supporting dual-fuel capabilities that are fuel-neutral. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S | 4 | I wasn’t aware this was in the WRAP. I recall that Southern Company required dual-fuel in order to count towards resource adequacy. Isn’t a bad idea but still need to winterize the wells or build nearby above-ground storage. |
| Nancy Bagot | | | Electric Power Supply Association | | WEQ Generator | O |  | Addressing fuel firmness needs to be assessed on a regional basis and needs to be addressed through incentives for investment, cost recovery for procurement decisions, and short-term forecasting (i.e., Day Ahead) allowing for sufficient notice to generators for the arrangement of fuel in advance of expected critical conditions. As written, this recommendation would make it more costly to get gas to plants and is not actually feasible in many places including the Chicago area and Long Island or California if dual fuel is not yet in place due to air quality needs. |
| Christopher Smith | | | INGAA | | WGQ Pipeline | S | 7 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services.   INGAA urges the Forum Panel to jointly pursue all the recommendations within this section that INGAA supports. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Kim Van Pelt | | | Boardwalk | | WGQ Pipeline | S | 7 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services.   INGAA urges the Forum Panel to jointly pursue all the recommendations within this section that INGAA supports. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Steven McCord | | | TC Energy Corporation | | WGQ Pipeline | S | 7 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services.   INGAA urges the Forum Panel to jointly pursue all the recommendations within this section that INGAA supports. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Christopher Burden | | | Enbridge | | WGQ Pipeline | S | 7 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services.   INGAA urges the Forum Panel to jointly pursue all the recommendations within this section that INGAA supports. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | S | 1 | This is already being addressed in various RTO forums but we welcome comments and input coming out of this forum. |
| Renee Lani | | | American Public Gas Association | | RMQ Retail Gas Market Company | S |  | APGA is generally not opposed to most of the suggested recommendations but defers to participants directly involved in the BES to determine which options are most likely to encourage generators to acquire sufficient fuel supply for severe weather events. For any infrastructure development intended to solely benefit the BES, those costs should be borne by the customers of the BES and not spread across all pipeline shippers, as traditional customers, including the communities that are served by public gas utilities, have already borne the majority of costs for the development of the existing natural gas infrastructure system. Similarly, any cost spreading mechanisms developed for electric generation fuel procurement costs should be applicable only to electric customers. APGA cannot support Recommendation 13 in this category, as it is not clear who would be bearing the costs of such reserve capacity and third-party storage options, nor would such solutions necessarily be an appropriate fix in the case where supply itself is limited. APGA is especially supportive of the recommendation to streamline the certificate review and permitting process for new natural gas infrastructure (Recommendation 11). Additionally, APGA supports the consideration of the need for natural gas as a balancing resource when it comes to FERC public interest determinations for new gas infrastructure (Recommendation 8). It is important to note that generators and other participants in the BES will need to raise this need in the appropriate FERC proceedings. |

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| **3.** | **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased** | | | | | | | |
|  | 3.a | Which entity has authority to require certain natural gas-fired generating units to obtain either firm supply and/or transportation or dual fuel capability, under what circumstances such requirements would be cost-effective, and how such requirements could be structured, including associated compensation mechanisms, whether additional infrastructure buildout would be needed, and the consumer cost impacts of such a buildout | | | | | | |
|  |  | *Recommendation 15* | | *Consider the development of mechanisms to evenly disperse fuel procurement costs during critical events among all consumers within a region.* | | | | |
| **Representative** | | | **Organization** | | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | | WGQ Producer | S | 7 | Socialization of these costs may be appropriate in some instances in which a region must find a means to mitigate reliability risks. If independent generators were still vertically integrated, these costs would be socialized through the utility. |
| Sylvia Munson | | | Consultant - 44 Farris | | WGQ Services or Technology Company | O |  | This recommendation would benefit the generators and their customers who do poor planning in critical events and would penalize the generators and customers who to excellent planning. This would be a disincentive to efficient planning overall. |
| Hannah Crites | | | Xcel Energy | | WEQ Marketer/Broker | S |  | Support, subject to the following restatement: The proposal is that markets implement a forward unit commitment process, ahead of the gas market, when extreme weather conditions are anticipated. Generators that are committed would be made whole in the event of fuel price volatility or in the event that their specific units were not ultimately called upon by the market. The notion is that to ensure reliability in extreme weather events, deviation from normal market mechanics is warranted to ensure reliability. |
| Matthew Agen | | | American Gas Association | | WGQ Distributor | O |  | This does not provide the right market signals. |
| Catherine Elder | | | Aspen Environmental Group | | Observer | S | 10 | Don’t know if it should be all consumers or not. I would like it better if the wells got winterized so there was no unreasonable price spike to begin with. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | | WGQ End User | O |  | To the extent the fuel is procured to supply electric service, it should be allocated to electric consumers. To the extent the fuel is procured to supply electric service, it should be allocated to electric consumers only under cost causation principles. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | | WEQ Independent Grid Operator & Planner | O |  | This is a matter of rate design both at the federal and state level and appears beyond the scope of this forum. |

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| **3.** | **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased** | | | | | | |
|  | 3.b | [Recommendation 24] Possible options for increased regasification of liquid natural gas (including possible Jones Act Waivers) | | | | | |
|  |  | *Recommendation 1* | *Consider cost recovery mechanisms and emergency response programs that support the utilization of LNG including short-term or temporary waivers to the Jones Act and other requirements such as air emissions and RPS to respond to emergency situations.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Paul Hughes | | | Southern Company | WEQ Generator | S |  | Southern Companies are supportive of efforts which appropriately recognize emergency situations where safety must be prioritized in the near term. The ability to apply a waiver or suspend certain limits or rules during emergency events is prudent and appropriately recognizes our view that energy is a necessity and safety of the customer is the priority in such events. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Not entirely clear how this relates to gas-electric harmonization. Without more context, do not support. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | This is overly broad. Additionally, it could lead to low quality gas flowing from the interstate pipelines. That gas may not be approved at the state level which would cause issues for LDCs. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S |  | This came up in question 2.4 above; air emission waivers, RPS waivers fine but is pipeline quality gas really an issue and I am just not sure the Jones Act waiver helps recognizing the time it would take to find a tanker cargo and get it to port. No reason I guess not to allow the waiver, but I have a hard time seeing it result in real-time emergency gas supply. Suspending LNG export during an emergency would make more sense, actually. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S |  | AF&PA and PGC reiterate that, to the extent that a cost recovery mechanism is adopted to improve the ability of electric generators to obtain fuels, those costs must be borne only by electric consumers. |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | S |  | Contingency plans should be developed that allow temporary emission limit flexibility during emergency operating conditions |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S |  | Defining conditions which trigger Jones Act and related environmental waivers in preparation for emergency periods is critical for such operations, as is prioritization of generators as human needs resources to ensure service during curtailment periods. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S |  | This is a matter of rate design both at the federal and state level and appears beyond the scope of this forum. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S |  | As discussed above, in concept, APGA supports the development of new cost recovery mechanisms and emergency response programs that support the utilization of LNG, including short-term or temporary waivers to the Jones Act. However, any Jones Act waiver is an indication that insufficient infrastructure exists to deliver gas safely and reliably to the places that need it most. Such a solution is only short-term and does not address the larger issue at hand (i.e., our country’s need for additional natural gas infrastructure, whether pipelines, storage, peak shaving, etc.). The same goes for the need to repeatedly waive air emissions caps and RPS mandates – if these need to be continuously waived, then the underlying permits and policies need to be reevaluated. |

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| **3.** | **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased** | | | | | | |
|  | 3.c | Which entity has authority, and under what circumstances, to take emergency actions to give critical electric generating units pipeline transportation priority second only to residential heating load, during cold weather events in which natural gas supply and transportation is limited but demand is high | | | | | |
|  |  | *Recommendation 1* | *Consider new transparency and information sharing requirements between RTOs, generators and large end users concerning actual gas flows, available capacity and price formulation to determine allocations during extreme weather events, in conjunction with regulators and emergency service offices.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | O |  | There is no legal authority to re-prioritize the flow of gas in the interstate market other than by contract. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Southern Companies believe focusing on allocation of resources does not address the fundamental issues at hand. Recommendations should focus on ensuring (and increasing) pipeline capacity and gas supply. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | S |  | Such transparency already exists with interstate pipelines. Similar transparency requirements should be applied to intrastate pipelines. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | AGA believes it is unfair and discriminatory to provide information that is not available to all market participants. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S | 2 | I like including large end users here; may be some question on how large is large because that may vary by service area … maybe define as a percentage of system gas use. Increased transparency and information sharing in an emergency seems like a good idea and goes back with ideas above about communication and maybe an emergency facilitator and maybe the facilitator can be an emergency service office or maybe the LDC, pipe and RTO should create one. Regulators may need to be part of that loop, too, for briefing elected officials in real time. Is hard to see how this can hurt. It would take time to set up. I thought ISONE already did this. CAISO does it to a degree but does not share the information much. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | O |  | Oppose reallocation of pipeline capacity and supply that industrials contracted for and paid for to subsidize electric generation. AF&PA and PGC oppose any recommendation to reallocate or curtail deliveries of their firm gas supply and firm transportation services that they contract for, and pay for, to ensure reliable delivery of natural gas to generators who fail to contract for firm supply or firm transportation. We do not think any entity has the authority to take emergency action to interfere with our contractual rights. |

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|  |  | *Recommendation 2* | *Consider the development of regulatory requirements to address prioritization of service among firm natural gas service customers in situations where firm customers, including electric generators, may face curtailment due to operational, physical, or cyber incidents that disrupt natural gas pipelines or otherwise cause reductions in firm service. The prioritization should recognize the human needs value of maintaining short term reliability of electric service along with other human need requirements and may require federal and/or state regulators to mandate that existing firm service to “non-critical” customers be shifted to critical entities.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | O |  | Any actions that fail to recognize contractual commitments in the interstate market will be the death knell in firm contracting, which this forum should be encouraging/ not discouraging. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 1 | Additionally the following standardization should be considered: 1. Define an established “threshold” category which should be contracted for minimum Firm supply by the distributor or by the parties responsible for gas supply to the distributor (in case of deregulated gas or electric distribution). Gas and Electric distribution companies should apply these priorities based on their known consumer usage.  2. Electric metering in both gas and electric deliveries should be used to manage the consumption of commercial entities.  3. Entities with non-Firm service should be cut first.  4. Entities with Firm service are the only entities to whom Force Majeure should apply.  5. If a Firm Service holder has a Force Majeure requirement greater than their Firm Service contract then there should be a limited ‘take’ available at standard contract overrun rates before a penalty rate applies.  6. Commercial entities with firm service (whether gas or electric), who are cut because they are non-critical services, should be contracted to receive compensation for their relinquishment of capacity in emergencies.  7. There should not need to be state or federal intervention or mandates for the use of Force Majeure. The gas or electric service provider should be able to declare this in case of a local interruption or a wide span service interruption. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Southern Companies believe focusing on allocation of resources does not address the fundamental issues at hand. Recommendations should focus on ensuring (and increasing) pipeline capacity and gas supply. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Generally this authority already exists at the state level. We oppose. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | This should be determined at the LDC and state commission level. To the extent the suggestion is related to interstate pipelines, this is already approved by FERC in the tariffs. Any proposed solution should not be at the expense of retail gas customers. This should be a governing principle when reviewing all the recommendations including with respect to prioritization proposals, etc |
| Catherine Elder | | | Aspen Environmental Group | Observer |  |  | There should be curtailment orders in place already. What those orders may need is a review to make sure they properly account for gas-fired generation being needed for reliability. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | O |  | AF&PA and PGC oppose any recommendation to reallocate or curtail deliveries of their firm gas supply and firm transportation services that they contract for, and pay for, to ensure reliable delivery of natural gas to generators who fail to contract for firm supply or firm transportation. We do not think any entity has the authority to take emergency action to interfere with our contractual rights. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S | 1 | This is critical to address load shedding during emergency conditions and the acknowledgement of electricity as a human need requirement equal to natural gas service during those periods. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 1 | See prior comments supporting a review of the human needs definition |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | O |  | Any type of pipeline prioritization should remain squarely in FERC’s jurisdiction, through its approved tariffs and non-discrimination policy. Furthermore, APGA is not aware of any overarching entity that has authority to abrogate contractual agreements. In fact, granting such authority could undermine goals of ensuring electric generation plants are sufficiently incentivized to proactively procure adequate quantities of fuel in preparation for emergency situations. |

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|  | 3.c | Which entity has authority, and under what circumstances, to take emergency actions to give critical electric generating units pipeline transportation priority second only to residential heating load, during cold weather events in which natural gas supply and transportation is limited but demand is high | | | | | |
|  |  | *Recommendation 3* | *Consider the development of standardized best practices regarding natural gas prioritization tiers, including the categories of consumers that should be considered part of critical human need.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | O |  | Lack of legal authority under NGA to void contractual arrangements; undermines fundamental underpinning of interstate gas market stability. |
| Sylvia Munson | | | Consultant - 44 Farris | WGQ Services or Technology Company | S | 2 | Additionally the following standardization should be considered: 1. Define an established “threshold” category which should be contracted for minimum Firm supply by the distributor or by the parties responsible for gas supply to the distributor (in case of deregulated gas or electric distribution). Gas and Electric distribution companies should apply these priorities based on their known consumer usage.  2. Electric metering in both gas and electric deliveries should be used to manage the consumption of commercial entities.  3. Entities with non-Firm service should be cut first.  4. Entities with Firm service are the only entities to whom Force Majeure should apply.  5. If a Firm Service holder has a Force Majeure requirement greater than their Firm Service contract then there should be a limited ‘take’ available at standard contract overrun rates before a penalty rate applies.  6. Commercial entities with firm service (whether gas or electric), who are cut because they are non-critical services, should be contracted to receive compensation for their relinquishment of capacity in emergencies.  7. There should not need to be state or federal intervention or mandates for the use of Force Majeure. The gas or electric service provider should be able to declare this in case of a local interruption or a wide span service interruption. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Southern Companies believe focusing on allocation of resources does not address the fundamental issues at hand. Recommendations should focus on ensuring (and increasing) pipeline capacity and gas supply. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Generally this authority already exists at the state level. We oppose. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | This should be determined at the LDC and state commission level. To the extent the suggestion is related to interstate pipelines, this is already approved by FERC in the tariffs. Any proposed solution should not be at the expense of retail gas customers. this should be a governing principle when reviewing all the recommendations including with respect to prioritization proposals, etc. |
| Catherine Elder | | | Aspen Environmental Group | Observer |  |  | Don’t see how this is different than item 2, immediately above here. If we winterized the wells against freeze off, of course, there would be less need to revisit curtailment orders. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | O |  | AF&PA and PGC oppose any recommendation to reallocate or curtail deliveries of their firm gas supply and firm transportation services that they contract for, and pay for, to ensure reliable delivery of natural gas to generators who fail to contract for firm supply or firm transportation. We do not think any entity has the authority to take emergency action to interfere with our contractual rights. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S | 2 | This is critical to address load shedding during emergency conditions and the acknowledgement of electricity as a human need requirement equal to natural gas service during those periods. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 2 | See prior comments supporting a review of the human needs definition |

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| **3.** | **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased** | | | | | | |
|  | 3.d | Whether resource accreditation requirements for certain natural gas-fired generating units should factor in the firmness of a generating unit’s gas commodity and transportation arrangements and the potential for correlated outages for units served by the same pipeline(s) | | | | | |
|  |  | *Recommendation 1* | *Consider fuel security as a capacity attribute or required for participation in the wholesale electric markets rather than penalty-based systems.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | S | 5 | There are ways to value different levels of reliability without dictating participation requirements in fuel-neutral manner (e.g., accreditation, capacity payments) |
| Paul Hughes | | | Southern Company | WEQ Generator | S | 1 | As referenced in other earlier comments, Southern Companies believe the state facilitated IRP process ensures that we remain directly accountable to our customers. Our planning efforts combined with fuel policies results ensures that all our generation relied upon for resource adequacy is backed by firm capacity and firm fuel supply. We believe direct accountability creates more effective response than price signals alone can create and that an obligation to serve is more powerful than a solution which simply creates more opportunities to serve, particularly during extreme events. |
| Gene Nowak | | | Kinder Morgan | WGQ Pipeline | S | 1 | § Commenters support these recommendations and provide the following comments: § The reliability of gas-fired only generators to obtain fuel is directly dependent upon the firmness of its gas supply, the firmness of its associated pipeline transportation capacity and the generator’s knowledge of how to optimally use the contracted services within pipeline/producer operating practices. § It seems logical that gas-fired only generators with firm supply and firm transportation capacity and the skill to manage its associated services should be afforded a better accreditation then those gas-fired only generators without those same factors. § This could be assigned to NERC for further discussion, prioritization, and any development. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | This is already being done, either directly or indirectly. Do not support forum action on this issue. |
| Matthew Agen | | | American Gas Association | WGQ Distributor |  |  | This should be situational. Costs of providing certainty 100% of the time would be prohibitive. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S | 4 | This could work, maybe, as a way of compensating generators to purchasing reliability tools. |
| Andrea Chambers | | | Process Gas Consumers Group | WGQ End User | S | 2 | FERC, as the entity with authority over wholesale markets, and NERC, as the reliability entity, should consider these three recommendations to ensure that the electric system operators can rely upon accredited generators and participating generators to be available when they are called upon. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | O |  | This is under consideration in capacity accreditation processes at the ISOs/RTOs. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 1 | As noted, this issue is being considered in various RTO forums. Input from this forum would be helpful but should not supplant those forums. |

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| **3.** | **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased** | | | | | | |
|  | 3.d | Whether resource accreditation requirements for certain natural gas-fired generating units should factor in the firmness of a generating unit’s gas commodity and transportation arrangements and the potential for correlated outages for units served by the same pipeline(s) | | | | | |
|  |  | *Recommendation 2* | *Consider enhancing capacity performance/pay-for-performance programs and price signals that encourage fuel procurement in advance of critical weather events.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | As referenced in other earlier comments, Southern Companies believe the state facilitated IRP process ensures that we remain directly accountable to our customers. Our planning efforts combined with fuel policies results ensures that all our generation relied upon for resource adequacy is backed by firm capacity and firm fuel supply. We believe direct accountability creates more effective response than price signals alone can create and that an obligation to serve is more powerful than a solution which simply creates more opportunities to serve, particularly during extreme events. |
| Gene Nowak | | | Kinder Morgan | WGQ Pipeline | S | 3 | Commenters support these recommendations and provide the following comments: § The reliability of gas-fired only generators to obtain fuel is directly dependent upon the firmness of its gas supply, the firmness of its associated pipeline transportation capacity and the generator’s knowledge of how to optimally use the contracted services within pipeline/producer operating practices. § It seems logical that gas-fired only generators with firm supply and firm transportation capacity and the skill to manage its associated services should be afforded a better accreditation then those gas-fired only generators without those same factors. § This could be assigned to NERC for further discussion, prioritization, and any development. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Xcel supports forward unit commitment processes in RTOs ahead of gas market trading and make whole payments for generators that buy gas. Do not support additional forum action on this issue. |
| Catherine Elder | | | Aspen Environmental Group | Observer |  |  | Unclear how this is different than item 1 above. This almost sounds like the generator would only get paid if a critical even occurred and that won’t work. The cost of these reliability -assuring services needs to be treated like insurance: we pay for protection whether the bad event occurs or not. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S |  | This is under consideration in capacity accreditation processes, but additional energy or ancillary service price signals or critical period dispatch allowances may be discussed to encourage fuel procurement in advance of critical weather events. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 2 | As noted, this issue is being considered in various RTO forums. Input from this forum would be helpful but should not supplant those forums. |

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| **3.** | **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased** | | | | | | |
|  | 3.d | Whether resource accreditation requirements for certain natural gas-fired generating units should factor in the firmness of a generating unit’s gas commodity and transportation arrangements and the potential for correlated outages for units served by the same pipeline(s) | | | | | |
|  |  | *Recommendation 3* | *Consider alternative service options that value reliability, fast-ramping, and frequency attributes.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | As referenced in other earlier comments, Southern Companies believe the state facilitated IRP process ensures that we remain directly accountable to our customers. Our planning efforts combined with fuel policies results ensures that all our generation relied upon for resource adequacy is backed by firm capacity and firm fuel supply. We believe direct accountability creates more effective response than price signals alone can create and that an obligation to serve is more powerful than a solution which simply creates more opportunities to serve, particularly during extreme events. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | This is already being done. |
| Matthew Agen | | | American Gas Association | WGQ Distributor |  |  | This already exists in the tariffs. |
| Catherine Elder | | | Aspen Environmental Group | Observer |  |  | Not sure that which means but it doesn’t sound like insurance to me. |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | O |  | Most if not all electric markets already doing this. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | It is not clear if this recommendation is tied to natural gas harmonization issues. To the extent not, it appears beyond the scope of this forum. |

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| **3.** | **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased** | | | | | | |
|  | 3.d | Whether resource accreditation requirements for certain natural gas-fired generating units should factor in the firmness of a generating unit’s gas commodity and transportation arrangements and the potential for correlated outages for units served by the same pipeline(s) | | | | | |
|  |  | *Recommendation 4* | *Consider reexamining the duration of commitments in capacity auctions.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | As referenced in other earlier comments, Southern Companies believe the state facilitated IRP process ensures that we remain directly accountable to our customers. Our planning efforts combined with fuel policies results ensures that all our generation relied upon for resource adequacy is backed by firm capacity and firm fuel supply. We believe direct accountability creates more effective response than price signals alone can create and that an obligation to serve is more powerful than a solution which simply creates more opportunities to serve, particularly during extreme events. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | This is already being done. |
| Rachel A. Hogge | | | BHE GT&S | WGQ Pipeline | S | 5 | INGAA supports longer commitments in capacity auctions. The additional certainty afforded by longer commitments will incentivize natural gas-fired generators to procure firm transportation services, which will promote electric reliability. |
| Catherine Elder | | | Aspen Environmental Group | N/A | O |  | Don’t see how this would help but maybe I am not familiar enough with capacity auctions. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S | 3 | FERC, as the entity with authority over wholesale markets, and NERC, as the reliability entity, should consider these three recommendations to ensure that the electric system operators can rely upon accredited generators and participating generators to be available when they are called upon. |
| Christopher Smith | | | INGAA | WGQ Pipeline | S | 5 | INGAA supports longer commitments in capacity auctions. The additional certainty afforded by longer commitments will incentivize natural gas-fired generators to procure firm transportation services, which will promote electric reliability. |
| Kim Van Pelt | | | Boardwalk | WGQ Pipeline | S | 5 | INGAA supports longer commitments in capacity auctions. The additional certainty afforded by longer commitments will incentivize natural gas-fired generators to procure firm transportation services, which will promote electric reliability. |
| Steven McCord | | | TC Energy Corporation | WGQ Pipeline | S | 5 | INGAA supports longer commitments in capacity auctions. The additional certainty afforded by longer commitments will incentivize natural gas-fired generators to procure firm transportation services, which will promote electric reliability. |
| Christopher Burden | | | Enbridge | WGQ Pipeline | S | 5 | INGAA supports longer commitments in capacity auctions. The additional certainty afforded by longer commitments will incentivize natural gas-fired generators to procure firm transportation services, which will promote electric reliability. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | It is not clear if this recommendation is tied to natural gas harmonization issues. To the extent not, it appears beyond the scope of this forum. |

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|  | 3.d | Whether resource accreditation requirements for certain natural gas-fired generating units should factor in the firmness of a generating unit’s gas commodity and transportation arrangements and the potential for correlated outages for units served by the same pipeline(s) | | | | | |
|  |  | *Recommendation 5* | *Consider developing capacity accreditation requirements that take into account actual expected generation availability for all resources.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Paul Hughes | | | Southern Company | WEQ Generator | S | 2 | As referenced in other earlier comments, Southern Companies believe the state facilitated IRP process ensures that we remain directly accountable to our customers. Our planning efforts combined with fuel policies results ensures that all our generation relied upon for resource adequacy is backed by firm capacity and firm fuel supply. We believe direct accountability creates more effective response than price signals alone can create and that an obligation to serve is more powerful than a solution which simply creates more opportunities to serve, particularly during extreme events. |
| Gene Nowak | | | Kinder Morgan | WGQ Pipeline | S | 2 | Commenters support these recommendations and provide the following comments: § The reliability of gas-fired only generators to obtain fuel is directly dependent upon the firmness of its gas supply, the firmness of its associated pipeline transportation capacity and the generator’s knowledge of how to optimally use the contracted services within pipeline/producer operating practices. § It seems logical that gas-fired only generators with firm supply and firm transportation capacity and the skill to manage its associated services should be afforded a better accreditation then those gas-fired only generators without those same factors. § This could be assigned to NERC for further discussion, prioritization, and any development. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | This is already being done. |
| Catherine Elder | | | Aspen Environmental Group | Observer | O |  | Didn’t this come up somewhere above? I don’t see it as solving the problem of needing reliability insurance or winterizing wells. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S | 1 | FERC, as the entity with authority over wholesale markets, and NERC, as the reliability entity, should consider these three recommendations to ensure that the electric system operators can rely upon accredited generators and participating generators to be available when they are called upon. |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | O |  | Capacity accreditation exists. Depending upon market this may also be captured within Capacity markets themselves. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S |  | This is under consideration in capacity accreditation processes, but additional energy or ancillary service price signals or critical period dispatch allowances may be discussed to encourage fuel procurement in advance of critical weather events. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | It is not clear if this recommendation is tied to natural gas harmonization issues. To the extent not, it appears beyond the scope of this forum. |

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| **3.** | **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased** | | | | | | |
|  | 3.e | Whether there are barriers to the use of dual-fuel capability that could be addressed by changes in state or federal rules or regulations. Dual-fuel capability can help mitigate the risk of loss of natural gas fuel supply, and issues to consider include facilitating testing to run on the alternate fuel, ensuring an adequate supply of the alternate fuel and obtaining the necessary air permits and air permit waivers. The forum could also consider the use of other resources which could mitigate the risk of loss of natural gas fuel supply | | | | | |
|  |  | *Recommendation 1* | *Consider incentives for power customers to make investments in additional infrastructure for dual fuel capability to meet peak demand.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | S | 4 | There are other options that should also be considered such as on-site LNG storage. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | As referenced in other earlier comments, Southern Companies believe the state facilitated IRP process ensures that we remain directly accountable to our customers. To that end, Southern Companies have multiple units with dual-fuel capabilities. We remain skeptical of incentive-based recommendations. |
| Gene Nowak | | | Kinder Morgan | WGQ Pipeline | S | 3 | § Commenters support these recommendations and provide the following comments: § Both generators and customers with dual fuel capability have options which enhance reliability, however, this enhanced reliability is not without an associated cost. § Requiring generators and, where applicable, customers to have dual fuel capability will improve the overall reliability of the energy grid during periods of peak demand. § Absent a regulatory requirement, generators and customers would have very little economic incentive to incorporate fuel redundancy into their projects to ensure such reliability. § Moreover, regulatory and economic incentives to invest in dual fuel capability during project development will further encourage generators and customers to fully explore dual fuel capabilities at the opportune development phase and choose advantageous infrastructure sites. § State regulators and/or FERC would need to enact rules to effectuate. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Such incentives already exist. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S | 3 | sure. But winterizing wells would obviate this need. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S |  | All four recommendations in this study should include discussion to support properly designed market incentives to reward the installation and maintenance of dual fuel capabilities. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 1 | As noted previously, this is being discussed in RTO forums. Input from this forum would be helpful but should not supplant those efforts. |

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| **3.** | **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased** | | | | | | |
|  | 3.e | Whether there are barriers to the use of dual-fuel capability that could be addressed by changes in state or federal rules or regulations. Dual-fuel capability can help mitigate the risk of loss of natural gas fuel supply, and issues to consider include facilitating testing to run on the alternate fuel, ensuring an adequate supply of the alternate fuel and obtaining the necessary air permits and air permit waivers. The forum could also consider the use of other resources which could mitigate the risk of loss of natural gas fuel supply | | | | | |
|  |  | *Recommendation 2* | *Consider passing costs of developing fast-ramping resources to balance intermittent volatility to operators of renewable generation.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | As referenced in other earlier comments, Southern Companies believe the state facilitated IRP process ensures that we remain directly accountable to our customers. To that end, Southern Companies have multiple units with dual-fuel capabilities. We remain skeptical of incentive-based recommendations. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | N/A |  | Do not see this issue within the scope of this forum. |
| Rachel A. Hogge | | | BHE GT&S | WGQ Pipeline | S | 4 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services. |
| Catherine Elder | | | Aspen Environmental Group | Observer | O |  | I agree that the market should have some way of valuing reliability each hour and the inability to operate in all hours or hours needed might reasonably be reflected in prices. But but but intermittency is not the issue here. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S | 3 | FERC, NERC, and the states should take cost-effective actions to require grid operators to ensure firm fuel supply for generators and resource adequacy requirements to the extent necessary to ensure the reliable operations of the wholesale electricity markets and retail electric service. |
| Christopher Smith | | | INGAA | WGQ Pipeline | S | 4 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services. |
| Kim Van Pelt | | | Boardwalk | WGQ Pipeline | S | 4 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services. |
| Steven McCord | | | TC Energy Corporation | WGQ Pipeline | S | 4 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services. |
| Christopher Burden | | | Enbridge | WGQ Pipeline | S | 4 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | This proposal seems beyond the scope of this forum. |

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| **3.** | **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased** | | | | | | |
|  | 3.e | Whether there are barriers to the use of dual-fuel capability that could be addressed by changes in state or federal rules or regulations. Dual-fuel capability can help mitigate the risk of loss of natural gas fuel supply, and issues to consider include facilitating testing to run on the alternate fuel, ensuring an adequate supply of the alternate fuel and obtaining the necessary air permits and air permit waivers. The forum could also consider the use of other resources which could mitigate the risk of loss of natural gas fuel supply | | | | | |
|  |  | *Recommendation 3* | *Consider regulatory requirements to provide evidence of firm supply/transportation or dual fuel capability as part of resource adequacy planning.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | As referenced in other earlier comments, Southern Companies believe the state facilitated IRP process ensures that we remain directly accountable to our customers. To that end, Southern Companies have multiple units with dual-fuel capabilities. We remain skeptical of incentive-based recommendations. |
| Gene Nowak | | | Kinder Morgan | WGQ Pipeline | S | 1 | § Commenters support these recommendations and provide the following comments: § Both generators and customers with dual fuel capability have options which enhance reliability, however, this enhanced reliability is not without an associated cost. § Requiring generators and, where applicable, customers to have dual fuel capability will improve the overall reliability of the energy grid during periods of peak demand. § Absent a regulatory requirement, generators and customers would have very little economic incentive to incorporate fuel redundancy into their projects to ensure such reliability. § Moreover, regulatory and economic incentives to invest in dual fuel capability during project development will further encourage generators and customers to fully explore dual fuel capabilities at the opportune development phase and choose advantageous infrastructure sites. § State regulators and/or FERC would need to enact rules to effectuate. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Such requirements already exist. |
| Rachel A. Hogge | | | BHE GT&S | WGQ Pipeline | S | 1 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | This is overly broad. |
| Catherine Elder | | | Aspen Environmental Group | Observer | O |  | Ok to require but not without addressing cost recovery issue |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S | 1 | FERC, NERC, and the states should take cost-effective actions to require grid operators to ensure firm fuel supply for generators and resource adequacy requirements to the extent necessary to ensure the reliable operations of the wholesale electricity markets and retail electric service. |
| Christopher Smith | | | INGAA | WGQ Pipeline | S | 1 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services. |
| Kim Van Pelt | | | Boardwalk | WGQ Pipeline | S | 1 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services. |
| Steven McCord | | | TC Energy Corporation | WGQ Pipeline | S | 1 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services. |
| Christopher Burden | | | Enbridge | WGQ Pipeline | S | 1 | INGAA supports consideration of market reforms and mechanisms that facilitate electric customers’ procurement of the services that they need to maintain electric reliability. This recommendation furthers that goal by incentivizing electric generators to purchase firm transportation services. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 2 | This is a ideal area for review in this forum. |

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| **3.** | **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased** | | | | | | |
|  | 3.e | Whether there are barriers to the use of dual-fuel capability that could be addressed by changes in state or federal rules or regulations. Dual-fuel capability can help mitigate the risk of loss of natural gas fuel supply, and issues to consider include facilitating testing to run on the alternate fuel, ensuring an adequate supply of the alternate fuel and obtaining the necessary air permits and air permit waivers. The forum could also consider the use of other resources which could mitigate the risk of loss of natural gas fuel supply | | | | | |
|  |  | *Recommendation 4* | *Consider fuel-neutral policies to provide certainty in long-term investments in dual fuel capabilities for electric generators.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | S | 3 | This should also include on-site LNG options. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | As referenced in other earlier comments, Southern Companies believe the state facilitated IRP process ensures that we remain directly accountable to our customers. To that end, Southern Companies have multiple units with dual-fuel capabilities. We remain skeptical of incentive-based recommendations. |
| Gene Nowak | | | Kinder Morgan | WGQ Pipeline | S | 2 | § Commenters support these recommendations and provide the following comments: § Both generators and customers with dual fuel capability have options which enhance reliability, however, this enhanced reliability is not without an associated cost. § Requiring generators and, where applicable, customers to have dual fuel capability will improve the overall reliability of the energy grid during periods of peak demand. § Absent a regulatory requirement, generators and customers would have very little economic incentive to incorporate fuel redundancy into their projects to ensure such reliability. § Moreover, regulatory and economic incentives to invest in dual fuel capability during project development will further encourage generators and customers to fully explore dual fuel capabilities at the opportune development phase and choose advantageous infrastructure sites. § State regulators and/or FERC would need to enact rules to effectuate. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Do not see this as an issue for this forum. |
| Catherine Elder | | | Aspen Environmental Group | Observer | O |  | Dual fuel could help but so could batteries or more gas storage and winterizing wells. There are certainly places when even if one wanted to waive AQ regs and allow burning diesel, say, in place of natgas, that the fuel handling equipment would not fit in the power plant footprint, so this has some practical problems, too. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S | 2 | FERC, NERC, and the states should take cost-effective actions to require grid operators to ensure firm fuel supply for generators and resource adequacy requirements to the extent necessary to ensure the reliable operations of the wholesale electricity markets and retail electric service. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | See prior comment re: existing RTO processes on this issue. |

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| **3.** | **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased** | | | | | | |
|  | 3.f | Increasing the amount or use of market-area and behind-the-city-gate natural gas storage | | | | | |
|  |  | *Recommendation 1* | *Consider requirements to increase line-pack in the pipeline one to two days prior and during times of anticipated critical weather events modeled on the emergency facility ratings utilized by the electric industry.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | O |  | It would be discriminatory to reserve line pack just for generators. Regulators cannot mandate a pipeline operational issue because they are liable for safety issues. Pipelines understand their system limitations better than regulators, and pipes should have operational discretion. Regulators should not tell them what pressures to operate at, which dictates the amount of line pack. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Pipelines already utilize line-pack based on demand forecasts. Pipeline operators are in the best position to determine how to operate their pipeline systems safely and reliably. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Pipeline operators should operate their facilities in a safe/reliable manner. |
| Rachel A. Hogge | | | BHE GT&S | WGQ Pipeline | O |  | This recommendation appears to misapprehend the role of line pack. Line pack supports the operation of the pipeline from hour to hour but does not create additional capacity on the pipeline. It is used by gas system operators as a means of balancing the system or meeting customer demand even when supply delivered to the system on a given day does not match consumption. Line pack allows the pipeline operator to temporarily balance out mismatches between timely injections of gas and withdrawals of gas to maintain ongoing flows, pressures and gas velocity.  System operators continually manage the amount of gas in their pipes to ensure customer demands can be met while not exceeding safe pressure levels. Line pack is limited. It is not a substitute for shippers injecting gas into the system (or taking their gas off of the system). Pipelines must carefully manage line pack because if line pack is not reasonably stable across the pipeline system, the resulting fluctuations affect delivery pressure and, in extreme circumstances, can impact system integrity.   There are upper and lower limits on the amount of line pack on a pipeline. Pipelines cannot “increase” line-pack and hold excess gas on the pipeline for days. While pipelines do “pack up” their systems in anticipation of weather, the pipeline is doing that to prepare its system for heavy throughput, not for customers to use line pack in lieu of injecting volumes of their own gas into the system. If customers withdraw pipeline line pack, it could cause pressures to drop on the pipeline, impairing service to all customers.  Further, natural gas pipelines transport natural gas for others; pipelines do not own the natural gas that they transport. The recommendation does not explain who will purchase the excess gas to be packed and stored onto the pipeline. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | AGA does not support this recommendation. Pipeline operators should not have policy requirements that dictate how they safely and reliably operate their transmission systems. To the extent that pipelines accurately forecast expected demand, this type of practice is already used. |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | O |  | Currently done |
| Christopher Smith | | | INGAA | WGQ Pipeline | O |  | This recommendation appears to misapprehend the role of line pack. Line pack supports the operation of the pipeline from hour to hour but does not create additional capacity on the pipeline. It is used by gas system operators as a means of balancing the system or meeting customer demand even when supply delivered to the system on a given day does not match consumption. Line pack allows the pipeline operator to temporarily balance out mismatches between timely injections of gas and withdrawals of gas to maintain ongoing flows, pressures and gas velocity.  System operators continually manage the amount of gas in their pipes to ensure customer demands can be met while not exceeding safe pressure levels. Line pack is limited. It is not a substitute for shippers injecting gas into the system (or taking their gas off of the system). Pipelines must carefully manage line pack because if line pack is not reasonably stable across the pipeline system, the resulting fluctuations affect delivery pressure and, in extreme circumstances, can impact system integrity.   There are upper and lower limits on the amount of line pack on a pipeline. Pipelines cannot “increase” line-pack and hold excess gas on the pipeline for days. While pipelines do “pack up” their systems in anticipation of weather, the pipeline is doing that to prepare its system for heavy throughput, not for customers to use line pack in lieu of injecting volumes of their own gas into the system. If customers withdraw pipeline line pack, it could cause pressures to drop on the pipeline, impairing service to all customers.  Further, natural gas pipelines transport natural gas for others; pipelines do not own the natural gas that they transport. The recommendation does not explain who will purchase the excess gas to be packed and stored onto the pipeline. |
| Kim Van Pelt | | | Boardwalk | WGQ Pipeline | O |  | This recommendation appears to misapprehend the role of line pack. Line pack supports the operation of the pipeline from hour to hour but does not create additional capacity on the pipeline. It is used by gas system operators as a means of balancing the system or meeting customer demand even when supply delivered to the system on a given day does not match consumption. Line pack allows the pipeline operator to temporarily balance out mismatches between timely injections of gas and withdrawals of gas to maintain ongoing flows, pressures and gas velocity.  System operators continually manage the amount of gas in their pipes to ensure customer demands can be met while not exceeding safe pressure levels. Line pack is limited. It is not a substitute for shippers injecting gas into the system (or taking their gas off of the system). Pipelines must carefully manage line pack because if line pack is not reasonably stable across the pipeline system, the resulting fluctuations affect delivery pressure and, in extreme circumstances, can impact system integrity.   There are upper and lower limits on the amount of line pack on a pipeline. Pipelines cannot “increase” line-pack and hold excess gas on the pipeline for days. While pipelines do “pack up” their systems in anticipation of weather, the pipeline is doing that to prepare its system for heavy throughput, not for customers to use line pack in lieu of injecting volumes of their own gas into the system. If customers withdraw pipeline line pack, it could cause pressures to drop on the pipeline, impairing service to all customers.  Further, natural gas pipelines transport natural gas for others; pipelines do not own the natural gas that they transport. The recommendation does not explain who will purchase the excess gas to be packed and stored onto the pipeline. |
| Steven McCord | | | TC Energy Corporation | WGQ Pipeline | O |  | This recommendation appears to misapprehend the role of line pack. Line pack supports the operation of the pipeline from hour to hour but does not create additional capacity on the pipeline. It is used by gas system operators as a means of balancing the system or meeting customer demand even when supply delivered to the system on a given day does not match consumption. Line pack allows the pipeline operator to temporarily balance out mismatches between timely injections of gas and withdrawals of gas to maintain ongoing flows, pressures and gas velocity.  System operators continually manage the amount of gas in their pipes to ensure customer demands can be met while not exceeding safe pressure levels. Line pack is limited. It is not a substitute for shippers injecting gas into the system (or taking their gas off of the system). Pipelines must carefully manage line pack because if line pack is not reasonably stable across the pipeline system, the resulting fluctuations affect delivery pressure and, in extreme circumstances, can impact system integrity.   There are upper and lower limits on the amount of line pack on a pipeline. Pipelines cannot “increase” line-pack and hold excess gas on the pipeline for days. While pipelines do “pack up” their systems in anticipation of weather, the pipeline is doing that to prepare its system for heavy throughput, not for customers to use line pack in lieu of injecting volumes of their own gas into the system. If customers withdraw pipeline line pack, it could cause pressures to drop on the pipeline, impairing service to all customers.  Further, natural gas pipelines transport natural gas for others; pipelines do not own the natural gas that they transport. The recommendation does not explain who will purchase the excess gas to be packed and stored onto the pipeline. |
| Christopher Burden | | | Enbridge | WGQ Pipeline | O |  | This recommendation appears to misapprehend the role of line pack. Line pack supports the operation of the pipeline from hour to hour but does not create additional capacity on the pipeline. It is used by gas system operators as a means of balancing the system or meeting customer demand even when supply delivered to the system on a given day does not match consumption. Line pack allows the pipeline operator to temporarily balance out mismatches between timely injections of gas and withdrawals of gas to maintain ongoing flows, pressures and gas velocity.  System operators continually manage the amount of gas in their pipes to ensure customer demands can be met while not exceeding safe pressure levels. Line pack is limited. It is not a substitute for shippers injecting gas into the system (or taking their gas off of the system). Pipelines must carefully manage line pack because if line pack is not reasonably stable across the pipeline system, the resulting fluctuations affect delivery pressure and, in extreme circumstances, can impact system integrity.   There are upper and lower limits on the amount of line pack on a pipeline. Pipelines cannot “increase” line-pack and hold excess gas on the pipeline for days. While pipelines do “pack up” their systems in anticipation of weather, the pipeline is doing that to prepare its system for heavy throughput, not for customers to use line pack in lieu of injecting volumes of their own gas into the system. If customers withdraw pipeline line pack, it could cause pressures to drop on the pipeline, impairing service to all customers.  Further, natural gas pipelines transport natural gas for others; pipelines do not own the natural gas that they transport. The recommendation does not explain who will purchase the excess gas to be packed and stored onto the pipeline. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 4 | Further review of line pack policies during critical events would be ripe for discussion in this forum. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S |  | While APGA is supportive of most of the recommendations (Recommendations 1-3, 5), we are concerned about cost allocation. It is important that those requiring and benefiting from any additional infrastructure be the entities that carry the costs of such development. |

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| **3.** | **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased** | | | | | | |
|  | 3.f | Increasing the amount or use of market-area and behind-the-city-gate natural gas storage | | | | | |
|  |  | *Recommendation 2* | *Consider mechanisms that incentivize investment in reliability through natural gas services and infrastructure, including storage options.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Paul Hughes | | | Southern Company | WEQ Generator | S | 2 | Southern Companies are generally supportive of actions that will expand and/or enhance the natural gas infrastructure. However, these measures should be based on proven cost-causation principles. |
| Gene Nowak | | | Kinder Morgan | WGQ Pipeline | S | 1 | § Commenters support these recommendations and provide the following comments: § Commenters believe that firm transportation and storage capacity (particularly market-area storage capacity) is critical to reliability. § Commenters believe that reliability requires (1) access to reliable supply, ideally from diversified supply sources, (2) firm transportation to move gas from supply areas to market areas, and (3) some level of storage service, or no-notice service that relies on balancing through line pack. § Regulatory mechanisms that incentivize operators to develop comprehensive transportation, storage, and balancing portfolios are essential to reliability, and should be coupled with corresponding regulatory mechanisms that incentivize customers to purchase these essential services. § Allowing pipelines to build infrastructure beyond the narrow confines of current market need is proactive and facilitates the ability of transportation and storage assets to compliment the burgeoning hourly demand associated with renewable energy penetration. § This change could be accomplished via the promulgation of new rules at the state or federal level (FERC or NERC), tariff changes within the organized markets. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Such incentives already exist. |
| Rachel A. Hogge | | | BHE GT&S | WGQ Pipeline | S | 1 | INGAA supports consideration of market reforms and mechanisms that facilitate investment in natural gas services and infrastructure, including natural gas storage and the associated pipeline infrastructure.  INGAA urges the Forum Panel to jointly pursue this recommendation along with the recommendations relating to permitting reform. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Matthew Agen | | | American Gas Association | WGQ Distributor |  |  | There are already market mechanisms in place and federal government intervention is not necessary. AGA could consider supporting this recommendation if there is appropriate cost allocation based on proven cost‐causation rate design principles. Moreover, if there are investments in interstate pipeline reliability there should be with greater transparency into pipeline reliability/integrity investments. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S | 1 | AF&PA and PGC support increasing the reliability of natural gas services to generators through integration of alternative fuels, LNG, storage, and line pack, so long as FERC ensures that the costs for these services are allocated to the generators based on cost causation principles and not to natural gas consumers. |
| Christopher Smith | | | INGAA | WGQ Pipeline | S | 1 | INGAA supports consideration of market reforms and mechanisms that facilitate investment in natural gas services and infrastructure, including natural gas storage and the associated pipeline infrastructure.  INGAA urges the Forum Panel to jointly pursue this recommendation along with the recommendations relating to permitting reform. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Kim Van Pelt | | | Boardwalk | WGQ Pipeline | S | 1 | INGAA supports consideration of market reforms and mechanisms that facilitate investment in natural gas services and infrastructure, including natural gas storage and the associated pipeline infrastructure.  INGAA urges the Forum Panel to jointly pursue this recommendation along with the recommendations relating to permitting reform. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Steven McCord | | | TC Energy Corporation | WGQ Pipeline | S | 1 | INGAA supports consideration of market reforms and mechanisms that facilitate investment in natural gas services and infrastructure, including natural gas storage and the associated pipeline infrastructure.  INGAA urges the Forum Panel to jointly pursue this recommendation along with the recommendations relating to permitting reform. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Christopher Burden | | | Enbridge | WGQ Pipeline | S | 1 | INGAA supports consideration of market reforms and mechanisms that facilitate investment in natural gas services and infrastructure, including natural gas storage and the associated pipeline infrastructure.  INGAA urges the Forum Panel to jointly pursue this recommendation along with the recommendations relating to permitting reform. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 1 | Further review of line pack policies during critical events would be ripe for discussion in this forum. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S |  | While APGA is supportive of most of the recommendations (Recommendations 1-3, 5), we are concerned about cost allocation. It is important that those requiring and benefiting from any additional infrastructure be the entities that carry the costs of such development. |

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| **3.** | **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased** | | | | | | |
|  | 3.f | Increasing the amount or use of market-area and behind-the-city-gate natural gas storage | | | | | |
|  |  | *Recommendation 3* | *Consider expanding third-party storage opportunities or more storage along mainline pipeline systems for short notice/no-notice service.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| NGSA | | | WGQ Producer | WGQ Producer | S | 2 | Customers must financially support such expansions. |
| Paul Hughes | | | Southern Company | WEQ Generator | S | 1 | Southern Companies are generally supportive of actions that will expand and/or enhance the natural gas infrastructure. However, these measures should be based on proven cost-causation principles. |
| Gene Nowak | | | Kinder Morgan | WGQ Pipeline | S | 2 | § Commenters support these recommendations and provide the following comments: § Commenters believe that firm transportation and storage capacity (particularly market-area storage capacity) is critical to reliability. § Commenters believe that reliability requires (1) access to reliable supply, ideally from diversified supply sources, (2) firm transportation to move gas from supply areas to market areas, and (3) some level of storage service, or no-notice service that relies on balancing through line pack. § Regulatory mechanisms that incentivize operators to develop comprehensive transportation, storage, and balancing portfolios are essential to reliability, and should be coupled with corresponding regulatory mechanisms that incentivize customers to purchase these essential services. § Allowing pipelines to build infrastructure beyond the narrow confines of current market need is proactive and facilitates the ability of transportation and storage assets to compliment the burgeoning hourly demand associated with renewable energy penetration. § This change could be accomplished via the promulgation of new rules at the state or federal level (FERC or NERC), tariff changes within the organized markets. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Generally support storage expansion as a cost-effective solution to gas supply issues. Do not see this as an issue to be addressed through this forum. |
| Rachel A. Hogge | | | BHE GT&S | WGQ Pipeline | S | 2 | INGAA supports consideration of market reforms and mechanisms that facilitate investment in natural gas services and infrastructure, including natural gas storage and the associated pipeline infrastructure.  INGAA urges the Forum Panel to jointly pursue this recommendation along with the recommendations relating to permitting reform. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Matthew Agen | | | American Gas Association | WGQ Distributor |  |  | There are already market mechanisms in place and federal government intervention is not necessary. AGA could consider supporting this recommendation if there is appropriate cost allocation based on proven cost‐causation rate design principles. |
| Andrea Chambers | | | Process Gas Consumers Group | WGQ End User | S | 3 | So long as gas industry not subsidize electric generation. AF&PA and PGC support increasing the reliability of natural gas services to generators through integration of alternative fuels, LNG, storage, and line pack, so long as FERC ensures that the costs for these services are allocated to the generators based on cost causation principles and not to natural gas consumers. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | N/A |  | The utilization of 3rd party storage for no notice service may be feasible but this recommendation addresses different concepts with varied degrees of feasibility. |
| Christopher Smith | | | INGAA | WGQ Pipeline | S | 2 | INGAA supports consideration of market reforms and mechanisms that facilitate investment in natural gas services and infrastructure, including natural gas storage and the associated pipeline infrastructure.  INGAA urges the Forum Panel to jointly pursue this recommendation along with the recommendations relating to permitting reform. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Kim Van Pelt | | | Boardwalk | WGQ Pipeline | S | 2 | INGAA supports consideration of market reforms and mechanisms that facilitate investment in natural gas services and infrastructure, including natural gas storage and the associated pipeline infrastructure.  INGAA urges the Forum Panel to jointly pursue this recommendation along with the recommendations relating to permitting reform. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Steven McCord | | | TC Energy Corporation | WGQ Pipeline | S | 2 | INGAA supports consideration of market reforms and mechanisms that facilitate investment in natural gas services and infrastructure, including natural gas storage and the associated pipeline infrastructure.  INGAA urges the Forum Panel to jointly pursue this recommendation along with the recommendations relating to permitting reform. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Christopher Burden | | | Enbridge | WGQ Pipeline | S | 2 | INGAA supports consideration of market reforms and mechanisms that facilitate investment in natural gas services and infrastructure, including natural gas storage and the associated pipeline infrastructure.  INGAA urges the Forum Panel to jointly pursue this recommendation along with the recommendations relating to permitting reform. Individual recommendations might not be sufficient to address problems with electric reliability; a holistic approach is necessary. For example, if a pipeline is fully subscribed, natural gas generators will not be able to obtain firm transportation services even if they have an incentive to do so absent infrastructure expansion. The United States needs permitting reforms to effectively and timely expand its infrastructure. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 1 | More real time services, even if at a high cost, could allow for the more efficient dispatch of scarce storage resources and is worth exploring in this forum. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S |  | While APGA is supportive of most of the recommendations (Recommendations 1-3, 5), we are concerned about cost allocation. It is important that those requiring and benefiting from any additional infrastructure be the entities that carry the costs of such development. |

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| **3.** | **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased** | | | | | | |
|  | 3.f | Increasing the amount or use of market-area and behind-the-city-gate natural gas storage | | | | | |
|  |  | *Recommendation 4* | *Consider allowing pipelines to build in reserve capacity within expansion projects to account for contingencies during constraint events.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | NA | 4 | It is not a matter of allowing pipelines to expand, it is a matter of financial supporting these expansions (and showing purpose and need). |
| Paul Hughes | | | Southern Company | WEQ Generator | S | 3 | Southern Companies are generally supportive of actions that will expand and/or enhance the natural gas infrastructure. However, these measures should be based on proven cost-causation principles. |
| Gene Nowak | | | Kinder Morgan | WGQ Pipeline | S | 3 | § Commenters support these recommendations and provide the following comments: § Commenters believe that firm transportation and storage capacity (particularly market-area storage capacity) is critical to reliability. § Commenters believe that reliability requires (1) access to reliable supply, ideally from diversified supply sources, (2) firm transportation to move gas from supply areas to market areas, and (3) some level of storage service, or no-notice service that relies on balancing through line pack. § Regulatory mechanisms that incentivize operators to develop comprehensive transportation, storage, and balancing portfolios are essential to reliability, and should be coupled with corresponding regulatory mechanisms that incentivize customers to purchase these essential services. § Allowing pipelines to build infrastructure beyond the narrow confines of current market need is proactive and facilitates the ability of transportation and storage assets to compliment the burgeoning hourly demand associated with renewable energy penetration. § This change could be accomplished via the promulgation of new rules at the state or federal level (FERC or NERC), tariff changes within the organized markets. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | S |  | Support, subject to pipeline bearing the cost (and earning the revenue) for excess usage. We do not support having the cost of excess capacity allocated to subscribers. |
| Rachel A. Hogge | | | BHE GT&S | WGQ Pipeline | S | 3 | INGAA supports consideration of measures to expand critical natural gas infrastructure. If the Forum Panel chooses to pursue this recommendation, the Forum must determine who will pay for the “reserve capacity” on the pipeline. There is significant financial risk—in some circumstances prohibitive risk—to building pipeline capacity without a customer for that capacity. As discussed in the attached comments, pipelines should not bear that risk to the benefit of electric customers. The Forum should identify a mechanism for electric customers to pay for the reliability benefits that this recommendation provides them. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | New pipelines already go through federal review and it seems like this would layer in incremental costs to shippers. Moreover, it is not clear who would pay for this. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | O |  | AF&PA and PGC oppose building spare capacity into expansions for generators without a commitment that the generators will pay for such capacity so that it is not subsidized by gas consumers. |
| Christopher Smith | | | INGAA | WGQ Pipeline | S | 3 | INGAA supports consideration of measures to expand critical natural gas infrastructure. If the Forum Panel chooses to pursue this recommendation, the Forum must determine who will pay for the “reserve capacity” on the pipeline. There is significant financial risk—in some circumstances prohibitive risk—to building pipeline capacity without a customer for that capacity. As discussed in the attached comments, pipelines should not bear that risk to the benefit of electric customers. The Forum should identify a mechanism for electric customers to pay for the reliability benefits that this recommendation provides them. |
| Kim Van Pelt | | | Boardwalk | WGQ Pipeline | S | 3 | INGAA supports consideration of measures to expand critical natural gas infrastructure. If the Forum Panel chooses to pursue this recommendation, the Forum must determine who will pay for the “reserve capacity” on the pipeline. There is significant financial risk—in some circumstances prohibitive risk—to building pipeline capacity without a customer for that capacity. As discussed in the attached comments, pipelines should not bear that risk to the benefit of electric customers. The Forum should identify a mechanism for electric customers to pay for the reliability benefits that this recommendation provides them. |
| Steven McCord | | | TC Energy Corporation | WGQ Pipeline | S | 3 | INGAA supports consideration of measures to expand critical natural gas infrastructure. If the Forum Panel chooses to pursue this recommendation, the Forum must determine who will pay for the “reserve capacity” on the pipeline. There is significant financial risk—in some circumstances prohibitive risk—to building pipeline capacity without a customer for that capacity. As discussed in the attached comments, pipelines should not bear that risk to the benefit of electric customers. The Forum should identify a mechanism for electric customers to pay for the reliability benefits that this recommendation provides them. |
| Christopher Burden | | | Enbridge | WGQ Pipeline | S | 3 | INGAA supports consideration of measures to expand critical natural gas infrastructure. If the Forum Panel chooses to pursue this recommendation, the Forum must determine who will pay for the “reserve capacity” on the pipeline. There is significant financial risk—in some circumstances prohibitive risk—to building pipeline capacity without a customer for that capacity. As discussed in the attached comments, pipelines should not bear that risk to the benefit of electric customers. The Forum should identify a mechanism for electric customers to pay for the reliability benefits that this recommendation provides them. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 3 | As noted above, this discussion of how pipelines propose to ‘size’ new projects given the ‘anchor tenant’ paradigm is a very ripe area for discussion and review in this forum. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | O |  | While APGA is supportive of most of the recommendations (Recommendations 1-3, 5), we are concerned about cost allocation. It is important that those requiring and benefiting from any additional infrastructure be the entities that carry the costs of such development. For this reason, we continue to be concerned about allowing pipelines to build in reserve capacity (Recommendation 4), as it is unclear who would bear such costs. |

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| **3.** | **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased** | | | | | | |
|  | 3.f | Increasing the amount or use of market-area and behind-the-city-gate natural gas storage | | | | | |
|  |  | *Recommendation 5* | *Consider expanding the integration of alternative fuels or LNG produced and stored behind the city gate.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Paul Hughes | | | Southern Company | WEQ Generator | S | 4 | Southern Companies are generally supportive of actions that will expand and/or enhance the natural gas infrastructure. However, these measures should be based on proven cost-causation principles. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | S |  | Generally support, but it is not clear that this is an issue for this forum. |
| Matthew Agen | | | American Gas Association | WGQ Distributor |  |  | This should be up to the state commissions. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 5 | We are certainly supportive of this recommendation |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S |  | While APGA is supportive of most of the recommendations (Recommendations 1-3, 5), we are concerned about cost allocation. It is important that those requiring and benefiting from any additional infrastructure be the entities that carry the costs of such development. |

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| **3.** | **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased** | | | | | | |
|  | 3.h | Whether or how to increase the number of “peak-shaver” natural gas-fired generating units that have on-site liquid natural gas storage | | | | | |
|  |  | *Recommendation 1* | *Consider regulatory policies, such as a reliability surcharge, that encourage the development of LNG needle peaking units aside existing pipelines or located near generators.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | O |  | NGSA opposes this if it is intended to be a pipeline surcharge. Pipelines should not impose system surcharges to serve specific customers that should sign up for services. However, RTOs could assess a surcharge on its system to support reliability. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Southern Companies do not support the use of a reliability surcharge as it socializes the cost among a large group, without defining who will have access to the peaking service. Opportunities to serve should not be elevated over obligations to serve. The establishment of a “reliability surcharge” is inconsistent with our view of the customer-centric markets. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | S |  | Support innovative ways of supporting gas supply that are cost-effective. But do not see this proposal as a priority for this forum. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | Markets should determine what is relevant. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S |  | ok, now we’re talking. Totally on board. Some of the approval has to come from state regulators and some from FERC probably for generators selling into organized markets. Discuss at NARUC? |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S |  | APGA supports market reforms that encourage the development of infrastructure that will allow electric generators to have access to sufficient fuel supplies during high demand events, so long as the costs for development of such infrastructure is appropriately allocated to the generators and their ultimate rate payers. However, APGA does not see any benefits with distinguishing LNG from other natural gas market tools at this time. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | Recommendation not clear as its not clear how a ‘reliability surcharge’ would work under today’s ‘anchor tenant’ model. |

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| **3.** | **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased** | | | | | | |
|  | 3.h | Whether or how to increase the number of “peak-shaver” natural gas-fired generating units that have on-site liquid natural gas storage | | | | | |
|  |  | *Recommendation 2* | *Consider the creation of a call market option for LNG.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | S |  | This option already exists. |
| Paul Hughes | | | Southern Company | WEQ Generator | S |  | Southern Companies are supportive of recommendations that enhance the infrastructure and the ability to increase capacity and gas supply access. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Do not support. Is action by this forum necessary to do that? Can’t LNG facility operators do this on their own? |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | Markets should determine what is relevant. AGA could consider not opposing this recommendation if appropriate and necessary incremental LNG peak shaving capacity is developed to meet the call‐option market, and service from existing LNG peak shaving services is not adversely affected. |
| Catherine Elder | | | Aspen Environmental Group | Observer | N/A |  | Interesting. Would a call option provide enough revenue to construct LNG needle peakers? Maybe. But if a generator bought that call, the generator would still need a way to recover its cost. Would it work for the electric utility to be the one that holds the call or contracts for the emergency supply and sells it to generators in an emergency? That would add complexity and even mix up roles but avoids the generator cost recovery problem -- the utility would need regulatory permission to pass that cost on to customers but it might be easier to grant to the utility than to generators bidding into a dispatch market. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S |  | AF&PA and PGC support increasing the reliability of natural gas services to generators through encouragement of LNG peaking services and a call option market for LNG, so long as only electric generators pay for the costs of such services, and it does not harm service to existing natural gas customers who pay for such facilities/services. |
| Joshua Phillips | | | Southwest Power Pool | WEQ Independent Grid Operator & Planner | S |  | Market products that reinforce available and flexible supply should be explored for both LNG & commodity gas. |

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| **4** | **Recommended Studies: Three topic areas addressed if federal and state entities with jurisdiction over natural gas infrastructure should cooperate to further study and enact measures to address natural gas supply shortfalls during extreme cold weather events including: (2.b.i) possible financial incentives for the natural gas infrastructure system necessary to support the BES to winterize or otherwise prepare to perform during extreme cold weather events; (3.a.i) market/public funding for generators to have firm transportation and supply and invest in storage contracts. Such funding may need to finance infrastructure necessary to provide additional firm transportation capacity, because many existing pipelines were financed and constructed to serve LDCs and may not have sufficient additional firm capacity; and (3.g) possible investments in strategic natural gas storage facilities, which could be located to serve the majority of pipelines supplying natural gas-fired generating units, and preserved for use during extreme cold weather events.** | | | | | | |
|  |  | *Recommendation 1* | *State Commissions should explore new methodologies that better capture the true value gas infrastructure provides to the resilience of the entire energy system.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Southern Companies are not supportive of the recommendations above. The electric (RTO/ISOs and vertically integrated markets) and gas markets have already signaled a need for additional infrastructure to support the growing strain on the natural gas system. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | S |  | Generally support but presume that states already have this authority |
| Matthew Agen | | | American Gas Association | WGQ Distributor | S | 1 | See American Gas Foundation study titled “Enhancing and Maintaining Gas and Energy System Resiliency - Areas of Focus and Change” and AGA’s November 28, 2022 letter to NAESB. The AGF Resiliency Study examines regulatory changes that will support investments and infrastructure improvements necessary to support broader energy system resilience. The AGF Resiliency Study concludes that the ability of the gas system to meet seasonal and peak day demands and to reliably deliver natural gas, even during high-impact events, represents an important and valuable resource that must be considered when designing future energy systems and building pathways to a low-carbon future. |
| Catherine Elder | | | Aspen Environmental Group | Observer | S | 1 | Methodologies to capture or recognize that value – and the value of reliability in general – yes. But this sorta sounds like a tautology. It isn’t that value that needs to be captured in rates so much as the cost to maintain that resource in order to assure reliability needs to be recognized. We are not paying today the insurance premium needed to assure reliability. Changing that would be a good thing. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 3 | This recommendation goes to ‘sizing’ of new pipeline proposals and the level of reserve capacity that should be built in beyond merely the needs of anchor tenants. This is a worthwhile recommendation to explore both with states but also with FERC given its role in the siting process. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S | 4 | APGA supports all the recommendations in this section. Each technical conference and study will provide valuable insight into the issues the energy industry is facing and how best to address them. Having overarching entities, such as federal agencies and national organizations, jointly conduct the analyses, with opportunity for feedback from impacted stakeholders, will help ensure the most comprehensive evaluation of these issues. |

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|  |  | *Recommendation 2* | *FERC should hold a technical conference to examine the need for federal and state coordination and oversight of pipeline capacity to ensure adequate interstate natural gas pipeline capacity for the manufacturing sector.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | O |  | This is outside the scope of this proceeding. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Southern Companies are not supportive of the recommendations above. The electric (RTO/ISOs and vertically integrated markets) and gas markets have already signaled a need for additional infrastructure to support the growing strain on the natural gas system. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | This could generally be helpful but do not see this as an issue to be addressed through this forum. |
| Rachel A. Hogge | | | BHE GT&S | WGQ Pipeline | O |  | There is insufficient natural gas pipeline capacity for the manufacturing sector in many parts of the country, but a technical conference will not be effective in addressing the shortfall. In order to expand pipeline capacity, there must be precedent agreements from firm shippers demonstrating need for the capacity and permitting reform to enable pipelines to build and meet that need. A technical conference is not the right forum to address barriers to the execution of precedent agreements or permitting reform. The Panel Forum should instead prioritize other actions more likely to yield meaningful solutions. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | LDCs do not support this recommendation as it is unnecessary. The need for incremental (or adequate) pipeline transportation capacity is determined by the market and should not be mandated by FERC. |
| Catherine Elder | | | Aspen Environmental Group | Observer | O |  | Sounds like a general complaint and not related to emergency weather conditions. It is more likely that we want to talk with manufacturers about using them for demand response during an emergency. It is not clear to me that there is a general threat to interstate pipeline capacity used to serve them. |
| Christopher Smith | | | INGAA | WGQ Pipeline | O |  | There is insufficient natural gas pipeline capacity for the manufacturing sector in many parts of the country, but a technical conference will not be effective in addressing the shortfall. In order to expand pipeline capacity, there must be precedent agreements from firm shippers demonstrating need for the capacity and permitting reform to enable pipelines to build and meet that need. A technical conference is not the right forum to address barriers to the execution of precedent agreements or permitting reform. The Panel Forum should instead prioritize other actions more likely to yield meaningful solutions. |
| Kim Van Pelt | | | Boardwalk | WGQ Pipeline | O |  | There is insufficient natural gas pipeline capacity for the manufacturing sector in many parts of the country, but a technical conference will not be effective in addressing the shortfall. In order to expand pipeline capacity, there must be precedent agreements from firm shippers demonstrating need for the capacity and permitting reform to enable pipelines to build and meet that need. A technical conference is not the right forum to address barriers to the execution of precedent agreements or permitting reform. The Panel Forum should instead prioritize other actions more likely to yield meaningful solutions. |
| Steven McCord | | | TC Energy Corporation | WGQ Pipeline | O |  | There is insufficient natural gas pipeline capacity for the manufacturing sector in many parts of the country, but a technical conference will not be effective in addressing the shortfall. In order to expand pipeline capacity, there must be precedent agreements from firm shippers demonstrating need for the capacity and permitting reform to enable pipelines to build and meet that need. A technical conference is not the right forum to address barriers to the execution of precedent agreements or permitting reform. The Panel Forum should instead prioritize other actions more likely to yield meaningful solutions. |
| Christopher Burden | | | Enbridge | WGQ Pipeline | O |  | There is insufficient natural gas pipeline capacity for the manufacturing sector in many parts of the country, but a technical conference will not be effective in addressing the shortfall. In order to expand pipeline capacity, there must be precedent agreements from firm shippers demonstrating need for the capacity and permitting reform to enable pipelines to build and meet that need. A technical conference is not the right forum to address barriers to the execution of precedent agreements or permitting reform. The Panel Forum should instead prioritize other actions more likely to yield meaningful solutions. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | Not sure why a Tech Conference would be devoted exclusively to the needs of the manufacturing sector above all other sectors. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S | 5 | APGA supports all the recommendations in this section. Each technical conference and study will provide valuable insight into the issues the energy industry is facing and how best to address them. Having overarching entities, such as federal agencies and national organizations, jointly conduct the analyses, with opportunity for feedback from impacted stakeholders, will help ensure the most comprehensive evaluation of these issues. |

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| **4** | **Recommended Studies: Three topic areas addressed if federal and state entities with jurisdiction over natural gas infrastructure should cooperate to further study and enact measures to address natural gas supply shortfalls during extreme cold weather events including: (2.b.i) possible financial incentives for the natural gas infrastructure system necessary to support the BES to winterize or otherwise prepare to perform during extreme cold weather events; (3.a.i) market/public funding for generators to have firm transportation and supply and invest in storage contracts. Such funding may need to finance infrastructure necessary to provide additional firm transportation capacity, because many existing pipelines were financed and constructed to serve LDCs and may not have sufficient additional firm capacity; and (3.g) possible investments in strategic natural gas storage facilities, which could be located to serve the majority of pipelines supplying natural gas-fired generating units, and preserved for use during extreme cold weather events.** | | | | | | |
|  |  | *Recommendation 3* | *NERC should conduct a study, in conjunction with a diverse group of interests, to assist the industry in better understanding requirements within each region regarding the level of pipeline capacity required to accommodate new generator usage patterns for ramping.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Southern Companies are not supportive of the recommendations above. The electric (RTO/ISOs and vertically integrated markets) and gas markets have already signaled a need for additional infrastructure to support the growing strain on the natural gas system. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | This could generally be helpful but do not see this as an issue to be addressed through this forum. |
| Matthew Agen | | | American Gas Association | WGQ Distributor | O |  | This seems to be an overstep. The federal government should focus on permitting expediency and let markets determine asset allocation. |
| Catherine Elder | | | Aspen Environmental Group | Observer | O |  | I don’t see this as urgent today but we do need to start paying attention to ramping patterns and NERC might be the right place to do it. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S | 4 | AF&PA and PGC recommend that FERC hold a technical conference to examine the adequacy of capacity to serve the manufacturing sector at the earliest time practical. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S | 1 | This needs to be done to understand the resources available to support the electricity transition and what will be needed. A study needs to be undertaken and viewed as unbiased – a true/realistic snapshot of what we have and what we will need. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | This issue is RTO-specific given different generation profiles so a nationwide study would be of limited value. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S | 2 | APGA supports all the recommendations in this section. Each technical conference and study will provide valuable insight into the issues the energy industry is facing and how best to address them. Having overarching entities, such as federal agencies and national organizations, jointly conduct the analyses, with opportunity for feedback from impacted stakeholders, will help ensure the most comprehensive evaluation of these issues. |

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|  |  | *Recommendation 4* | *Conduct an analytical analysis study that (1) evaluates supply/demand balance under extreme conditions; (2) identifies which generating units must operate under such conditions; (3) describes and explores the risk of extreme events; and/or (4) ranks cost and effectiveness of solutions for making supply more secure, such as winterizing wells, adding underground storage, new pipeline capacity, etc.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | S | 4 | This would be a significant undertaking. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Southern Companies are not supportive of the recommendations above. The electric (RTO/ISOs and vertically integrated markets) and gas markets have already signaled a need for additional infrastructure to support the growing strain on the natural gas system. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | This could generally be helpful but do not see this as an issue to be addressed through this forum. |
| Catherine Elder | | | Aspen Environmental Group | Observer | O |  | This is part of standard reliability assessment. I don’t see any need to delay focus on winterizing wells and adding more transparency and facilitating access to gas under adverse conditions by waiting for a study. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S | 2 | AF&PA and PGC recommend that an analytical analysis study be conducted by an independent entity to evaluate the risks of extreme weather events and the cost-effectiveness of solutions to address these issues, as well as whether there are adequate resources in place to accommodate increased variable resources to the extent that this information does not already exist. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S | 3 | This recommended analysis is vast as described, and some of this data may have already been collected/assessed. We do need to understand what information we still need to gather, what information we have, and how that information is used to support reliability, the energy transition, and climate changes/extreme events. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | S | 5 | This analytical analysis would be helpful but it should not hold up reforms needed presently as this task, on a nationwide basis, could be quite daunting. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S | 3 | APGA supports all the recommendations in this section. Each technical conference and study will provide valuable insight into the issues the energy industry is facing and how best to address them. Having overarching entities, such as federal agencies and national organizations, jointly conduct the analyses, with opportunity for feedback from impacted stakeholders, will help ensure the most comprehensive evaluation of these issues. |

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|  |  | *Recommendation 5* | *Conduct a study, performed by the U.S. Department of Energy, NERC, or a national laboratory, to evaluate if there are adequate generator resources in place to accommodate the increased use of variable resources as well as sufficient fuel supplies to support those resources.* | | | | |
| **Representative** | | | **Organization** | **Market/Segment** | **S/O** | **Rank** | **Comments** |
| Patricia Jagtiani | | | NGSA | WGQ Producer | S | 2 | Same proposal as #3 above. |
| Paul Hughes | | | Southern Company | WEQ Generator | O |  | Southern Companies are not supportive of the recommendations above. The electric (RTO/ISOs and vertically integrated markets) and gas markets have already signaled a need for additional infrastructure to support the growing strain on the natural gas system. |
| Hannah Crites | | | Xcel Energy | WEQ Marketer/Broker | O |  | Do not believe this is an issue to be addressed through this forum. |
| Catherine Elder | | | Aspen Environmental Group | Observer | O |  | This is a side issue/distraction. |
| Andrea Chambers | | | Process Gas Consumers Group and American Forest & Paper Association | WGQ End User | S | 1 | AF&PA and PGC recommend that an analytical analysis study be conducted by an independent entity to evaluate the risks of extreme weather events and the cost-effectiveness of solutions to address these issues, as well as whether there are adequate resources in place to accommodate increased variable resources to the extent that this information does not already exist. |
| Nancy Bagot | | | Electric Power Supply Association | WEQ Generator | S | 2 | This is being done on a recurring basis by NERC and ISOs/RTOs to varying degrees. There could be benefits from coordinating with DOE (or NERC or FERC) to formalize findings or develop practices for addressing the analysis of existing generation resources and the availability and deliverability of sufficient fuel supplies for those resources. |
| Brian Fitzpatrick | | | PJM Interconnection LLC | WEQ Independent Grid Operator & Planner | O |  | Resource adequacy is specific to each region making a national study of this scope hard to do and of limited value. |
| Renee Lani | | | APGA | RMQ Retail Gas Market Company | S | 1 | APGA supports all the recommendations in this section. Each technical conference and study will provide valuable insight into the issues the energy industry is facing and how best to address them. Having overarching entities, such as federal agencies and national organizations, jointly conduct the analyses, with opportunity for feedback from impacted stakeholders, will help ensure the most comprehensive evaluation of these issues. |

**Response to Survey Issued in Advance of the March 3, 2023 Gas-Electric Harmonization Forum Meeting**

**X**cel Energy submits its responses to issues raised in the survey issued by NAESB in advance of the March 3, 2023 Gas-Electric Harmonization (GEH) meeting. Xcel Energy is registered as a Marketer/Broker in the Wholesale Electric Quadrant.

Question 1: Do you support or oppose taking action in response to the following recommendation?

**Response to Question 1: See attached detailed response to questions in the survey.**

Question 2: Of the recommendations that you support, please rank the recommendations in order of the priority (1 – 10, as applicable) that they should be given to increase the reliability of the natural gas infrastructure system in support of the Bulk Electric System.

Question 3: For the top three recommendations you support, please provide actions that can be taken to support the recommendation, identify the entity or entities that should be responsible for taking those actions, describe how those actions should be implemented and provide any related recommended deadlines. (Attach Documentation)

**Responses to Questions 2 and 3:**

Xcel Energy has ranked the following recommendations in order of priority. For the first three recommendations, details requested in Question 3 are provided.

Priority 1: Refine the cold weather *force majeure* provisions of the NAESB gas contract. The objective is to eliminate the disincentive to winterize wells created by the current contract. If this disincentive is eliminated, we would expect to see broader winterization, leading to increased reliability and reduced customer cost.

* The language of concern is a feature of NAESB’s standard natural gas supply contract. It seems reasonable, therefore, that NAESB institute a process to address this language.
* We do not propose that *force majeure* can never be attributed to cold weather. We do believe, however, that the standard contract should be refined to better clarify that gas producers are expected to take reasonable measures to winterize their facilities. If a cold weather event for which a supplier seeks to declare *force majeure* does occur, the supplier should bear the burden of establishing the elements needed to establish *force majeure*. In addition, suppliers should have the obligation to provide reasonable notice and needed data to back-up their claims. These details would be developed through the NAESB process.
* Time is of the essence given the increasing frequency and severity of cold weather events. We would propose that changes to the contract be approved and in place by the end of 2023.

Priority 2: Require that gas suppliers post data regarding their well freeze-off events. The objective here is to create a market inducement to winterize by providing gas purchasers more information about the ability of specific suppliers to deliver gas during extreme weather events.

* NAESB seems like a logical group to take this on.
* Through its process, participants would work to identify the specific data to be posted, including the time periods or events for which data must be posted.
* Again, time is of the essence. This information would help gas purchasers identify more reliable suppliers that they could then target for contracts for next winter. We would like to see posting of data as soon as possible, and preferably retroactively to freeze-offs that during Winter Storm Elliott in 2023.

Priority 3: Development of forward commitment (in advance of opening of the gas markets for the relevant days) processes for situations where extreme weather is predicted, and couple those forward commitments with make whole payments for gas purchase. The objective is to enable the markets to be best positioned to respond to extreme weather by committing gas units early, enabling committed gas generators to purchase needed gas when the relevant nomination cycle opens. A mechanism would be needed to make gas generators who purchase gas in response to commitments whole in the event of real-time outcomes that do not align with expectations at the time commitments are made.

* The RTOs and ISOs, through their stakeholder processes, are the ones to take this on.
* Significant work on a region-by-region basis would be required to develop the details of such a process and to undertake the system enhancements needed to implement. Processes may vary in some regards between regions.
* Realistically we see this process taking some time. We would hope to see definition of the process and capability to implement by the winter of 2025, if not sooner.

Priority 4: Increase transparency about operation of intrastate pipelines by requiring them to comply with the types of data transparency imposed on interstate pipelines under 18 CFR § 284.13. Interstate gas pipelines are already required under FERC rules to provide information that supports competitive interstate pipeline markets. Similar transparency would be beneficial for intrastate markets.

Priority 5: Establish a process under the Jones Act and Clean Air Act to automatically implement waivers to shipping and emissions limits when the extreme weather is anticipated. Implementation of waivers will facilitate commitment and dispatch of units needed to maintain reliability.

Priority 6: Facilitate gas markets over weekend and holiday periods (in reality, not just in theory) by requiring gas sellers to provide daily gas purchase packages for weekends and holidays, not just single gas purchase packages that sell one quantity of gas for each day covered by the package. This would enable purchasers to purchase differing quantities for each day of a weekend or holiday period. This would enhance reliability by increasing flexibility in the gas markets and could result in reducing end use customer costs.

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| **Comments on behalf of the following entities:** | |
| Arlington Storage, Cheyenne Plains, Colorado Interstate Gas, Elba Express, El Paso Natural Gas, Horizon Pipeline, KM Illinois Pipeline, KM Louisiana Pipeline, Midcontinent Express, Mojave Pipeline, Natural Gas Pipeline, Sierrita Gas Pipeline, Southern Natural Gas, Southern LNG, Stagecoach Pipeline and Storage, Tennessee Gas Pipeline, TransColorado Gas Transmission, Wyoming Interstate, Young Gas Storage, Banquete Hub, Camino Real, Copano Pipelines, Gulf Coast Express Pipeline, KinderHawk Field Services, KM Border Pipeline, Eagle Ford Gathering, Fort Union Gas Gathering, KM Mexico Pipeline, KM North Texas Pipeline, Permian Highway Pipeline, KM Tejas Pipeline, KM Texas Pipeline, KM Keystone Gas Storage LLC, Twin Tier Pipeline | |

* **Section II – Prioritization of Recommendations & Comment Opportunity**
* **1 Measures to improve gas-electric information sharing for improved system performance during extreme weather emergencies.**
* **1 a Whether and how natural gas information could be aggregated on a regional basis for sharing with Bulk Electric System operators in preparation for and during events in which demand is expected to rise sharply for both electricity and natural gas, including whether creation of a voluntary natural gas coordinator would be feasible.**

* + Recommendation 10, **Priority 1.**
    - Commenters support this recommendation and further clarifies that the review of existing natural gas market products and services should encompass all participants in the industry including Producers, Marketers, Intrastate Pipelines, Interstate Pipelines, LDCs, Storage Operators, LNG Operators, and any others that provide the natural gas and/or pipeline capacity.
    - This could be added to NAESB’s Annual Plan for each quadrant, prioritized as appropriate, and accomplished as a multi-quadrant effort. No standards would be expected, only an industry report.
  + Recommendation 4, **Priority 2.**
    - Commenters support this recommendation and suggest that the information regarding the types of contracts under which natural-gas fired generators procure natural gas (both supply and capacity) should be provided to the applicable regional operators directly from the natural-gas fired generators.
    - Commenters further suggest that the contractual information specify
      * whether the supply is firm/interruptible and any other provision that could affect reliability and
      * whether the capacity is firm/interruptible, type of firm for the locations of receipt and delivery (primary, secondary in path, secondary out of path) and whether the capacity was obtained via capacity release and is recallable.
    - This could be assigned to NERC to prioritize, organize, and develop the requirements to be implemented by natural gas-fired generators and regional operators.
  + Recommendation 3, **Priority 3.**
    - Commenters support this recommendation and offers that the aggregated pipeline EBB information should be made available by each ISO/RTO applicable to its service area and market participants and could include applicable:
      * Critical Notice information
      * Planned Service Outages
      * Available Capacity
      * Unsubscribed Capacity
    - This is only the aggregation of information provided according to NAESB standards and could be added to NAESB’s Annual Plan for the WEQ Quadrant and prioritized as appropriate.
* **Section II – Prioritization of Recommendations & Comment Opportunity**
* **1 Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies**
* **1 b Expanding/revising natural gas demand response/interruptible customer programs to better coordinate the increasing frequency of coinciding electric and natural gas peak load demands and better inform natural gas consumers about real-time pricing**
  + Recommendation 5, **Priority 1.**
    - Commenters support this recommendation and provide the following comments:
    - There is already a robust capacity release market in the interstate gas pipeline industry. Shippers can either prearrange or post for bidding offers of capacity that they wish to release before gas needs to be nominated.
    - Commenters suggest a slight modification to existing standards to improve the transparency of capacity release transactions. Currently, in order to view open offers, interested parties are required to log into a pipeline’s Customer Activity area to view/bid. An enhancement would be to duplicate open offers outside of the password-protected Customer Activities section on the public Informational Postings section of pipelines’ websites.
    - By having the offers publicly available, all stakeholders may view/ aggregate (see recommendations 1 a (3)) offers of capacity without having to access the password-protected Customer Activities section of pipelines’ websites.
    - This change could be accomplished by new NAESB standards and could be added to NAESB’s Annual Plan for the WGQ Quadrant and prioritized as appropriate.
* **Section II – Prioritization of Recommendations & Comment Opportunity**
* **1 Measures to improve gas-electric information sharing for improved system performance during extreme weather emergencies.**
* **1 c Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling)**
  + Recommendation 6, **Priority 1**.
    - Commenters support this recommendation and provide the following comments:
    - The most reliable method for a Shipper to utilize its contractual firm transportation capacity is to nominate that capacity according to NAESB’s Timely Cycle. This is due to FERC policy that firm contract capacity previously scheduled cannot be bumped in a subsequent NAESB Intraday Cycle by another firm contract of any type. The NAESB Timely Cycle is the only standardized cycle that completely starts over from a scheduling perspective each day.
    - On average approximately 85% of the deliveries on commenters major pipelines are to customers other than gas-fired generators. Therefore, it seems logical and beneficial to natural-gas fired generators and others, to adjust the Electric Market Design scheduling practices so that market clearing times, the issuance of day-ahead awards, and the dispatching of generators occur prior to the NAESB Timely Cycle nomination deadline without impacting the vast majority of non-electric generation customers.
    - Without these adjustments, a Shipper trying to utilize nomination opportunities subsequent to the NAESB Timely Cycle cannot be certain that the transportation capacity it needs to receive/deliver gas supply to a gas-fired generator will be available. The Shippers contractual capacity could have already been made available and scheduled by another Shipper transporting gas via a firm contract, nominated and scheduled via the NAESB Timely Cycle, and utilizing segment and/or point capacity that is secondary in path or secondary out of path.
    - Since this is directly related to electric reliability, this could be assigned to NERC for further discussion and prioritization of potential Electric Market Design adjustments.
  + Recommendation 7, **Priority 2**.
    - Commenters support giving notice to the power generation markets of upcoming daily requirements so they participate fully in the gas market for extended days if they choose to enhance their reliability instead of a day-by-day determination. Waiting until the last minute limits the flexibility**.**
    - Since this is directly related to electric reliability, this could be assigned to NERC for further discussion and prioritization of potential Electric Market Design adjustments.
  + Recommendation 19, **Priority 3**.
    - Commenters support this recommendation with the following suggestions:
    - A mechanism could be developed for generators that supports the creation and upload of a critical notice (similar to what is provided by interstate pipelines to their customers) to regional operators. There should be a standardized format that accommodates easily indicating potential issues that may impact its operations, including the sourcing of its natural gas, such as possible reductions in its firm supply or scheduled transportation capacity.
    - This could be added to NAESB’s Annual Plan for the WEQ quadrant and prioritized as appropriate.
* **Section II – Prioritization of Recommendations & Comment Opportunity**
* **2 Measures to improve reliability of natural gas facilities during cold weather (freeze protection, electric supply)**
* **2 c Methods to streamline the process for, and eliminate barriers to, identifying, protecting, and prioritizing critical natural gas infrastructure load [See also Recommendation 28 – Guidelines to identify critical natural gas facility loads]**
  + Recommendation 1, **Priority 1.**
    - Commenters support this recommendation and provide the following suggestions:
    - Gas facility operators should identify and update as necessary inventories of critical gas facilities that are powered solely by electricity. Critical gas facility operators should make the information available to electric system operators via a standardized format in a mutually agreeable electronic method.
    - This should apply to all gas facility operators (producers, gatherers, LDC etc.), not just interstate pipelines.
    - Some of this effort has already been requested by various state regulatory bodies. The process could be enhanced by developing NAESB standards for consistency of content and timing of updates. If needed it could be added to NAESB’s Annual Plan for each quadrant as applicable. Each quadrant would then prioritize this work as appropriate.
* **Section II – Prioritization of Recommendations & Comment Opportunity**
* **3 Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased.**
* **3 a Which entity has authority to require certain natural gas-fired generating units to obtain either firm supply and/or transportation or dual fuel capability, under what circumstances such requirements would be cost-effective, and how such requirements could be structured, including associated compensation mechanisms, whether additional infrastructure buildout would be needed, and the consumer cost impacts of such a buildout.**
  + Recommendation 2, **Priority 1.**
    - Commenters support this recommendation and provide the following comments:
    - Commenters believe that firm transportation and/or storage capacity is critical when assessing the reliability of a particular generator. The specific facts and circumstances around each particular generator would dictate the level of each unit’s contracting portfolio.
    - Commenters believe that gas supply reliability requires (1) access to reliable supply, ideally from diversified supply sources, (2) firm transportation to move gas from supply areas to the generator, and (3) some level of storage service, or no-notice service that relies on balancing through line pack.
    - For generators that bid into wholesale electric markets under some form of reliability or must-run service, commenters believe that there must be requirements on firm fuel supply that support these reliability/must run obligations.
    - This change could be accomplished by FERC rule promulgation, tariff changes within the organized markets, or perhaps through new NERC standards and prioritized as appropriate.
  + Recommendation 1, **Priority 2.**
    - Commenters support this recommendation and provide the following comments:
    - As stated in response to Page 16, Recommendation 2, commenters believe that gas supply reliability requires (1) access to reliable supply, ideally from diversified supply sources, (2) firm transportation to move gas from supply areas to the generator, and (3) some level of storage service, or no-notice service that relies on balancing through line pack.
    - For generators that bid into wholesale electric markets, and upon which those markets rely for service, these generators should be encouraged and rewarded by securing their fuel supply needs in a way that secures and firms up the service it offers these wholesale markets.
    - Unfortunately, there does not exist large-scale mechanisms to recover costs of firm fuel supply and transportation/storage in many of these markets, creating a disincentive for generators to not incur the costs necessary to firm up grid reliability.
    - Commenters believe that such a mechanism would reward generators and increase grid reliability by aligning market incentives directly in parallel with actions that can be taken to increase grid reliability and resiliency.
    - This change could be accomplished by FERC rule promulgation, tariff changes within the organized markets, or perhaps through new NERC standards.
  + Recommendation 6, **Priority 3.**
    - Commenters support these recommendations and provide the following comments:
    - As stated in commenter’s response to Page 16, Recommendation 2, commenters believe that firm transportation and/or storage capacity is critical when assessing the reliability of a particular generator. The specific facts and circumstances around each particular generator would dictate the level of each unit’s contracting portfolio.
    - To the extent a generator cannot provide adequate reliability through an objective and documented evaluation, it stands to reason that the particular generator in question cannot be relied on by the wholesale markets to reliably provide generation to the grid. If a generator cannot reliably offer its services, de-rating, or risk weighting, that particular generator seems warranted.
    - These three items (recommendations 1, 2, and 6) would go a long way to provide reliability for electric generation by requiring firm gas supply and transportation and a mechanism to recoup the costs.
    - Reliance of day of or mid-day interruptible gas has proven to be unreliable. Firm gas purchased and scheduled ahead of the gas day is reliable (especially combined with winterization efforts being implemented by states and their regulatory agencies).
    - This could be assigned to NERC for further discussion, prioritization, and further development.
* **Section II – Prioritization of Recommendations & Comment Opportunity**
* **3 Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased.**
* **3 d Whether resource accreditation requirements for certain natural gas-fired generating units should factor in the firmness of a generating unit’s gas commodity and transportation arrangements and the potential for correlated outages for units served by the same pipeline(s).**
  + Recommendation 1, **Priority 1.**
  + Recommendation 5, **Priority 2.**
  + Recommendation 2, **Priority 3.**
    - Commenters support these recommendations and provide the following comments:
    - The reliability of gas-fired only generators to obtain fuel is directly dependent upon the firmness of its gas supply, the firmness of its associated pipeline transportation capacity and the generator’s knowledge of how to optimally use the contracted services within pipeline/producer operating practices.
    - It seems logical that gas-fired only generators with firm supply and firm transportation capacity and the skill to manage its associated services should be afforded a better accreditation then those gas-fired only generators without those same factors.
    - This could be assigned to NERC for further discussion, prioritization, and any development.
* **3 Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased.**
* **3 e Whether there are barriers to the use of duel-fuel capability that could be addressed by changes in state or federal rules or regulations. Dual-fuel capability can help mitigate the risk of loss of natural gas fuel supply, and issues to consider include facilitating testing to run on the alternate fuel, ensuring an adequate supply of the alternate fuel and obtaining the necessary air permits and air permit waivers. The forum could also consider the use of other resources which could mitigate the risk of loss of natural gas fuel supply.**
  + Recommendation 3, **Priority 1.**
  + Recommendation 4, **Priority 2.**
  + Recommendation 1, **Priority 3.**
    - Commenters support these recommendations and provide the following comments:
    - Both generators and customers with dual fuel capability have options which enhance reliability, however, this enhanced reliability is not without an associated cost.
    - Requiring generators and, where applicable, customers to have dual fuel capability will improve the overall reliability of the energy grid during periods of peak demand.
    - Absent a regulatory requirement, generators and customers would have very little economic incentive to incorporate fuel redundancy into their projects to ensure such reliability.
    - Moreover, regulatory and economic incentives to invest in dual fuel capability during project development will further encourage generators and customers to fully explore dual fuel capabilities at the opportune development phase and choose advantageous infrastructure sites.
    - State regulators and/or FERC would need to enact rules to effectuate.
* **Section II – Prioritization of Recommendations & Comment Opportunity**
* **3 Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased.**
* **3 f Increasing the amount or use of market-area and behind-the-city-gate natural gas storage.**
  + Recommendation 2. **Priority 1.**
  + Recommendation 3, **Priority 2.**
  + Recommendation 4, **Priority 3.**
    - Commenters support these recommendations and provide the following comments:
    - Commenters believe that firm transportation and storage capacity (particularly market-area storage capacity) is critical to reliability.
    - Commenters believe that reliability requires (1) access to reliable supply, ideally from diversified supply sources, (2) firm transportation to move gas from supply areas to market areas, and (3) some level of storage service, or no-notice service that relies on balancing through line pack.
    - Regulatory mechanisms that incentivize operators to develop comprehensive transportation, storage, and balancing portfolios are essential to reliability, and should be coupled with corresponding regulatory mechanisms that incentivize customers to purchase these essential services.
    - Allowing pipelines to build infrastructure beyond the narrow confines of current market need is proactive and facilitates the ability of transportation and storage assets to compliment the burgeoning hourly demand associated with renewable energy penetration.
    - This change could be accomplished via the promulgation of new rules at the state or federal level (FERC or NERC), tariff changes within the organized markets.

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Description automatically generated

February 27, 2023

*Submitted Electronically*

North American Energy Standards Board

1415 Louisiana Street, Suite 3460

Houston, TX 77002

**Re: INGAA’s Response to the Gas-Electric Harmonization Forum Survey Issued for the March 3, 2023 Meeting**

North American Energy Standards Board:

The Interstate Natural Gas Association of America (“INGAA”) appreciates the opportunity to comment on the recommendations submitted by participants during the Gas-Electric Harmonization (“GEH”) Forum.[[1]](#footnote-1) The North American Energy Standards Board (“NAESB”) identified 112 recommendations in the Survey issued in connection with the March 3, 2023 GEH Forum meeting. The number of recommendations and the potentially wide-ranging implications of many recommendations for the electric and natural gas industry make preparation of a full and complete response to each recommendation difficult. For example, the number of recommendations precluded INGAA from identifying all the “actions that can be taken to support [high priority] recommendations.” INGAA notes—as NAESB appears to acknowledge—that a separate entity such as FERC or NERC will be responsible for taking the actions needed to support several of the recommendations. INGAA submits the comments below and in the attached table for the Forum participants’ consideration but reserves the right to supplement or amend its response as the Forum progresses.

INGAA asks the Forum Panel to evaluate the 112 recommendations against the following principles when determining how to proceed.

1. Recommended actions should improve electric reliability to a degree sufficient to justify the actions’ costs.

It is essential that the Forum Panel not lose sight of the problem that FERC and NERC tasked it with addressing—the potential for the bulk electric system to fail during extreme cold weather events. While the Forum Panel may look at the natural gas industry when completing this task, its focus must remain on actions “necessary to support the bulk electric system and to address recurring challenges stemming from natural gas-electric infrastructure interdependency.”[[2]](#footnote-2)

The focus on *electric* reliability is appropriate. Winter Storm Uri, which gave rise to this Forum, “was not an event that tested the capacity of the natural gas transportation system.”[[3]](#footnote-3) In fact, during Winter Storm Uri, “natural gas pipelines were only minimally affected by power outages (because most have backup power) and were largely able to meet their firm transportation commitments.”[[4]](#footnote-4) This conclusion is consistent with data demonstrating that interstate natural gas pipelines reliably meet their firm transportation commitments.[[5]](#footnote-5)

Because FERC and NERC charged the Forum Panel with identifying actions that “support” the reliability of the electric grid and there are no “recurring challenges” preventing interstate natural gas pipelines from reliably delivering on their firm transportation commitments, the Forum should not devote its time and resources to exploring proposals that do not meaningfully improve the reliability of the bulk electric system.

Further, although INGAA recognizes the value in incremental improvements to electric reliability, the Forum Panel should not pursue recommendations that yield incremental improvements without regard to cost. The Forum Panel should instead weigh the value of any improvements against the costs associated with achieving those improvements.

Several recommendations do not materially differ from current policies and practices, and accordingly offer little benefit,[[6]](#footnote-6) promise minimal benefit only at substantial cost,[[7]](#footnote-7) or both.

Recommendations 1.c.28 and 29, which propose changes to interstate natural gas pipelines’ critical notices, are illustrative. Interstate pipelines currently post information about issues that affect their service, including the location and expected duration of the event and the extent of impacts to pipeline services, if any. Customers then can use this information to determine the issue’s impact on their business (something the pipeline cannot do itself). Pipelines update these public notices as soon as additional information is available, notifying shippers and others of any updates or changes from the original notice, including, for example, when the notices shall be lifted or repairs are anticipated to be completed. There are costs—both time and money—associated with developing a “standard” critical notice and “tiers” of criticality, but neither standardization nor tiers will meaningfully alter the mix of information already available to the public. Reformatting or relabeling publicly available information will incur costs but not improve electric reliability.[[8]](#footnote-8)

The Forum Panel should only pursue recommendations that meaningfully improve the reliability of the Bulk Electric System at a cost proportionate to the potential benefits.

1. Electric customers should bear the costs of recommended actions because they are the beneficiaries of improved electric reliability.

FERC has long “recognized . . . the cost causation principle,” which “provides that costs should be allocated to those who cause them to be incurred and those that otherwise benefit from them.”[[9]](#footnote-9) This principle “involves comparing the costs assessed against a party to the burdens imposed or benefits drawn by that party.”[[10]](#footnote-10) Several recommendations deviate from this fundamental principle by imposing substantial costs on natural gas pipeline customers to obtain a benefit for electric customers.[[11]](#footnote-11)

Recommendations to curtail certain end users’ natural gas transportation to free natural gas supply and pipeline capacity for other end users or to otherwise reallocate supply and capacity based on end use during “critical” times are quintessential examples of the cost-causation problem. Setting aside the numerous legal hurdles facing these recommendations,[[12]](#footnote-12) reallocation of pipeline capacity based on end use misallocates cost. A wide range of shippers have determined that they need the certainty afforded by firm pipeline transportation, and those shippers pay a premium to obtain that certainty. If firm shippers’ pipeline capacity can be reallocated involuntarily to natural gas-fired generators that do not hold firm pipeline capacity in “critical” or “emergency” conditions, then firm shippers are no longer receiving the service they contracted for and instead are paying a premium not for the benefit of electric customers served by those generators.[[13]](#footnote-13) The Forum Panel should not disrupt firm gas contracting practices that are working and that assure deliveries to firm shippers. Instead, the Forum Panel should consider recommendations that lead natural gas-fired generators to purchase the services that they need to serve their customers. A key part of this is advocating for new infrastructure to make those services available.

INGAA urges the Forum Panel to consider the cost-causation principle as it evaluates recommendations to ensure that electric customers do not benefit from increased reliability at the expense of others.

1. Recommended actions should promote predictability and regulatory certainty; they should not establish rules that vary based on weather or market conditions.

INGAA previously explained that the Forum should not pursue changes that only apply in certain circumstances, such as “periods of unanticipated demand,” “critical conditions,” “extreme weather,” or the like.[[14]](#footnote-14) The rules governing natural gas and electricity markets must be clear, consistent, and predictable. Uncertainty regarding what rules apply during what times and who makes that determination is extremely disruptive and will further impair the operation of natural gas and electricity markets. Rule changes triggered by phrases open to widely divergent interpretations will inject significant uncertainty into markets. INGAA reiterates its request that the Forum Panel avoid recommendations that establish unpredictable rules[[15]](#footnote-15) and instead focus on promoting predictability, consistency, and uniformity.

\* \* \* \*

Several recommendations do appear to adhere to the principles described above.[[16]](#footnote-16) These recommendations seek changes to the wholesale electric market to improve electric reliability; their costs are reasonable in relation to their potential benefit; their costs would be borne by the electric customers that benefit from the recommendations; and they would promote regulatory certainty. INGAA supports further consideration of these recommendations by the Forum Panel and Forum participants.

INGAA completed the Survey by marking the recommendations we support with “S” and the recommendations we oppose with “O.” For recommendations that INGAA supported, we provided a prioritization. For some recommendations, INGAA provides additional comments within the table regarding our support or opposition. For some recommendations—denoted by “N/P”—INGAA is not taking a position on the recommendation at this time. As stated above, INGAA reserves the right to supplement or modify its position on the recommendations as the Forum progresses.

INGAA looks forward to continued discussion among the Forum participants regarding the recommendations identified in the Survey.

Sincerely,

/s/ Christopher Smith

Christopher Smith, on behalf of INGAA and its 26 member companies

**Comments to NAESB February 8 Survey**

Catherine Elder, Aspen Environmental Group

Question 1: Recommendation # and Comment

1 Not sure I have in mind what this tool would look like but sort of envision something that is standardized across pipelines and maybe it shows the day’s working capacity, working line pack, expected receipts versus deliveries and any operational or maintenance issues reducing that working capacity below nominal capacity?

2 This needs to emphasize access by generators and LDCs and not just be an exercise between RTOs and pipelines, which already engage in coordinating discussions. The price element is important, too and the goal should be to get information to those that are looking for supply or capacity to keep the lights on. I would structure it to be more of a facilitator, activated during an emergency, that can provide information that helps connect parties to find gas supply. But I also see this as feasible under recommendation 5: a third-party facilitator

3 Don’t oppose but not sure what it achieves

4 We’re talking electricity system operators? It should be possible to create a form where generators check various boxes that generally describe the types of supply and transport each hold. Now what does the operator do with that information? I guess it can then add up what of its resources it can count on during extreme conditions?

5 see comment on item 2

6 This could be combined as part of item 1. That same portal could include the information in item 7 and add detail to what gas facilities post so they are not so vague.

8, 9 and 10 don’t seem so critical. It isn’t clear to me that operational constraints are severe enough or overlapping enough that a model would be helpful relative to what I can solve in my head. I think generators know the produces and services available in their area; the question is cost recovery. I have noticed that generators in vertically-integrated utilities outside an RTO tend to buy more expensive and secure services (like EPNG’s hourly no-notice service, for example) while merchant generators bidding into an RTO marginal-cost market buy daily spot and interruptible transportation – primarily because of the cost recovery.

Question 2: Recommendation # and Comment

4 If such a platform existed, then the third-party facilitator from Question 1 might not be needed; maybe the platform can do it all. The platform could include the better and real-time information about capacity release, so I’d combine with 5.

8/9 I like the idea of real-time more than just at the start of the scheduling cycle.

11 Why just new generation projects? I would support if all those generators that are deemed necessary for reliability were required to have firm supply and transport contracts and be compensated for those costs. The demand response here needs to be from a) conservation and b) asking industrial facilities who can cut back and reduce operations to do so. The latter is more likely useful in an emergency. But that means building effective programs that compensate those who give up their gas for doing so and that information about who is doing that go to the platform/emergency facilitator.

Question 3: Recommendation # and Comment

1. Not clear to me that shorter periods or more cycles will help. Now, should there be more cycles in an emergency? Could the pipes and big LDCs who run transmission reasonably process more cycles? Don’t oppose considering it but not sure we will find it to be of value; seems like a red herring and that information flow and access to gas and transmission for it are bigger issues.
2. Hourly noms would be lovely if everybody were connected to storage or a way to inject more gas into pipes each hour and we had hourly pricing to reflect the value of gas in different hours. By themselves it is not clear to me that they help or that they are even feasible.
3. Yes, please. The firm holder of the rights should be able to call on their firm capacity in any and all nomination windows.
4. Yes, yes please please. This 2 and 3-day gap in the market is archaic and needs remedy.
5. Maybe, but back to hourly noms – what is the physical vehicle by which non-ratable flows are feasible? There isn’t one by and large. Now, could we just order all pipelines to allow hourly nominations and non-ratable takes and encourage them to add the LNG needle peakers or other storage to provide that service? If we are willing to do that and then allow the generators to recover the cost of buying that service (and recover from electric ratepayers as essentially a reliability surcharge), then this works great and I’d support. But all by itself would be meaningful and ineffective.
6. Getting the generators to not have to guess their dispatch and know how much gas they need is a good thing in general. In an emergency, it could help make sure gas gets to where it is needed by avoiding guessing error.
7. Don’t have a good sense of whether this is useful or not.
8. No objection from me – comments elsewhere I noted that the purchase strategy typically depends on whether one is an independent generator versus part of a utility with ratepayer recovery not bidding into an RTO – so only support if this is accompanied by cost recovery guarantee. And then would generators who did not purchase the firm supply and transport not be awarded dispatch orders?
9. No idea if there is anything useful to this concept or not. Do we need greater diversification of gas suppliers during an extreme event? Would different credit and collateral allow a generator to buy from an LDC or from an industrial customer more quickly during an extreme event? If so, then this is a good idea.
10. Oppose as written: I don’t know if it has to be hourly today so much as by nomination period. With more renewables over time and more ramping of gas in those late afternoon hours, hourly prices may become more important. But the only way more gas gets into the system now is by somebody who has storage that supports balancing service. Would hourly pricing help create a price signal such that investors would build more LNG needle peakers or ways to change gas flow during the day? Maybe, and that would indeed be a good thing. But what would drive the hourly price changes if nobody can then act on that information and to act they need storage.
11. Yes please. Would increase transparency, assuming that the timely cycle reporting requirements are actually sufficient.
12. Pipelines can do this today. But again, they need storage in order to deliver those kinds of services and need an attitude more like my old friends at Union Gas (see comment on question 20).
13. Same comment as above.
14. Generators still would need a way to recover the cost of those options from their RTO.
15. Needs to become 24/7 in general, regardless of weather, recognizing that liquidity after timely nominations may thwart this intent and that bigger LDCs are sufficient elephants that they get 24/7 service already. Or (like this is easy) do we just need to designate an after-hours market-maker? More (expensive) LNG needle peakers? Winterizing wells would be cheaper.
16. Is there really a competitive reason why flows are not posted? Some of the pipeline websites offer a visual on where constraints are on their system or how much capacity remains available on a given day. This information is really very very helpful in assessing reliability impacts and allowing shippers to visualize potential alternate routes to their intended market load. From that data one can infer flows if one knows what the nominal rated capacity was and about any force majeure events or maintenance events. Posting the flows would eliminate the need for that mental math.
17. PJM and ISONE and CAISO engage in detailed communication with the gas pipelines now. Not clear to me that it needs to be standardized, *per se.* Having said that, I think a lot of folks in the West focused on California missed that Northwest Pipeline was having trouble with constraints all over its system around Thanksgiving as folks tended to focus on the pipelines that deliver to California and ignored Northwest Pipeline because it does not deliver gas to California.
18. I am not familiar with the Duty of Candor rule.
19. The reference to regional operators means pipeline operators? Yes, sounds like it would help pipelines to know if somebody is not going to use their gas or capacity. Though, at what point in the day? Harbinger of the ‘no-bump’ rule. But maybe shift the idea so that generators inform the pipeline once they know for sure? Or does this mean ISO/RTO operators? But how is it possible they do not have a duty to do that today?
20. So if I am going to over take, we’re talking about a need to inform the pipeline? I should do that already. I recall ( Gas in Ontario telling me if they had the resources (and with their storage facilities they almost always would) they would let a shipper or generator overpull and the charge would be a penny per MMBtu. That was a long time ago, but the point is that it was the pipeline’s resources AND its attitude that provided flexibility if it helped a shipper/generator. Not sure what the reference to ‘equipment information’ here means. Now, there is a graphic PG&E posts on its Pipe Ranger website (<https://www.pge.com/pipeline/index.page>) that shows the high and low acceptable range for linepack and where they expect to fall in that range every single day. This graphic is very helpful in knowing whether the system is in or expects to be an over-take versus under-take situation and the pipeline’s limits on how big an imbalance it can tolerate.
21. I like this. I would have thought it would be part of the platform or facilitation concept in Question 2. Though I don’t know if it is simply a protocol that needs developing versus a requirement to share a specific list of information (akin to my starter list for question 22). Now, is a list the same as a protocol? Maybe. I can also see some idea a generator might be somewhat reluctant to tell a pipeline too much because it might reduce its negotiating leverage on special tariffs or whatnot.
22. Oh if they are not communicating, that is bad. They at least need open, two-way communication. To put some color on this, we need a list of the required information. Demand conditions for both sectors. Any operating problems known. Any anticipated. Anticipated hourly gas burn and anticipated imbalance. Just a start. The generator and LDC might discuss reliability of supply and upstream transportation and at what demand level the LDC will become constrained.
23. I often say electric and gas don’t talk to each other and when they do it isn’t the same language. So this might in fact be helpful to generators and system operators. But I don’t have a strong sense here of what the electricity operators need help understanding and I think some of the ISO/RTOs have what they need. Now. Are there smaller regional systems that don’t know enough about gas to know what questions to ask? Probably. But I sense it is not just providing the electrics with gas information that is needed but helping them understand and apply it. I would support but the concept needs clarification in order to be useful.
24. Do the pipelines really need help with this? If so, fine. It is interesting to look across a swatch of pipeline websites and they all differ as to ease of information access and quantity and quality of information. So maybe FERC and NAESB should push for more uniformity. And maybe start by identifying the best qualities of all the web posting boards and encourage application of them as a best practice.
25. Should the information be pushed out to parties (thus requiring a protocol) or instead be posted and updated in more real time where parties can access? It is not clear to me that posting is inadequate.
26. Ok, mid-stream would capture our processing facilities but what facility operators would count for the wellhead? At that point it seems like we’re talking about individual producer/well operators experiencing either lack of electricity or freeze-offs. I would love a freeze-out tag by well to become public with the owner of the well ID’d so buyers could perhaps avoid purchasing that gas until that well is winterized. And if they had to post their issues then maybe a buyer could avoid buying gas involving that midstream operator or wellhead. GTI’s “differentiated gas” program or Project Canary might offer product frameworks that could be applied.
27. Like a profile that evaluates the risk a generator can actually operate when needed given their supply and transport agreements? The RTO/ISO or FERC first needs to demand this information. Then we analysts could evaluate. But the Index of Customers is only going to tell us who holds firm capacity, isnt’ it? So I could tell that a generator does not hold FT by them not showing up on the Index. But that does not mean that the generator is not buying gas from a marketer who holds firm capacity. And if they are buying daily spot gas? Seems like the RTO/ISO/reliability planner needs to know a whole lot more about the contracts generators hold and their procurement practices. This is probably needed even if we have the facilitator/platform but if we want generators to buy/hold more firm, we have to give them a way to recover those costs, otherwise we simply put them in an impossible situation.
28. Don’t know if the critical notices should be standardized or should simply contain more content. What caused the problem? Example: Keystone storage declared force majeure during Uri; was it a freeze-off? Of what? More information, among other things, would help shippers understand more about when to expect resolution as well as evaluate whether purchase of the associated service was worthwhile. It could also help evaluate the need for and marketability of substitute or alternative services. But don’t see this as a huge part of the solution.
29. California’s large utility/transmission operators (i.e., PG&E and SoCalGas) use tiers now. The tier and the associated penalty is designed to capture the severity of the need and apply a penalty large enough to resolve the imbalance. If this is not in place elsewhere, then is probably a good idea to implement more broadly.
30. This could be helpful insofar as lowest cost stops being the sole dispatch criterion. Maybe we add a price adder to incentivize firm supply and transport as well but I like the idea that they get dispatch priority. Ask a production cost/dispatch modelers how we could get the models to reflect that firm tag as I am not sure there is a zero/one qualitative tag option in the model – or do we fool the model by adding a penalty cost to those who bid without firm supply and transport? Still, the cost recovery uncertainty is the problem, so support but this seems like a half-step, not a full solution.
31. It isn’t the planning that needs modification so much as the market design, and it isn’t predictability that would encourage those generators to obtain FT and firm supply but certainty on the cost recovery so that generators are not left holding the bag on FT and firm supply needed for reliability. Planning won’t solve this problem.
32. Whose gas planning? On the interstates it comes down to basis differentials: someone will propose new capacity when the basis between two points exceeds the cost of building new pipe. For the large LDCs, most states have never paid close attention to pipeline additions but many are starting to as they consider decarbonization and realizing regulators have largely left this to the utilities to handle. New York, Colorado, possibly Rhode Island and California are examples.
33. Does this really not happen now? I have seen gas get left to the bottom of the list for planning a new power plant but at the same time there have been plants proposed and withdrawn after I told the Developer access to gas was bad. It does not seem like this is a key issue insofar as it relates to siting. Scenario-based planning, for sure and long-term should take into account need for continued access to gas. But isn’t the highest priority.
34. I suspect some or all of the ISOs/RTOs don’t have enough focus on extreme cases. The August 2020 heat event that caused blackouts in California, for example, was deemed by some to be a 1-in-100 event. The reliability standard, however, is 1-in-10. So contingency plans for events out in the probability distribution tails -- well, Uri is out there, too – needs to occur. Some of the planning could encompass demand response plans to voluntarily divert industrial gas demand to instead send that gas to power plants or human needs customers.
35. Not sure what the intended planning entities are or what the established requirements would be; what this achieves is unclear to me.
36. Oh yes, the electric demand forecast as an input to resource adequacy should evaluate whether the gas needed will be available. We have to stop assuming that the gas will be available and we have to stop assuming that the capacity will be there when needed. This should be part of the standard reliability check. And it should include consideration of peak events.

[this is where the question numbering changed and seemed to duplicate so I started copying in the section lead question instead of trying to re-number and potentially creating more confusion]

Section II Question: **Programs to encourage and provide compensation opportunities for natural gas infrastructure facility winterization**

1. Need to more carefully define “facilities” but some sort of back up to electricity is a good idea now that we depend on gas to generate electricity
2. Totally support. Winterization is not that expensive and we paid more than enough during Uri to cover the cost. It is unconscionable that a producer or operator or gatherer or processor can claim *force majeure* when they failed to winterize their facilities: freeze off should be excluded from the allowed causes of *force majeure*. Winterizing (and modifying the associated contract language) is among the very most important steps we can take to preserve gas service to power plants and protect life. The NAESB base contract could also be modified to add a check box indicating whether the gas is known to come from a winterized source or has a certificate verifying it to be winterized. That in and of itself might be a good starting point.

Section II Question: **Methods to streamline the process for, and eliminate barriers to, identifying, protecting, and prioritizing critical natural gas infrastructure load [See also Recommendation 28 – Guidelines to identify critical natural gas facility loads]**

1 Circuits? Is the need to identify circuits or is it the facilities themselves? If the latter, then this duplicates item 1 from the prior question.

2 This should already exist pursuant to the NGPA.

1. FERC allows CAISO today to shift generation away from generation served by SoCalGas -- an outcome after the Aliso Canyon leak. This could be expanded within RTO’s so that the dispatcher can shift to any facility when needed to keep the lights on.
2. Not sure pipeline quality needs to be on this list. On the Jones Act, would there really be tankers out there that we could ever divert quickly enough to get them to a US port if they were not already in port? Otherwise fine. Make reliability the priority.

Section II Question: **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased**

1. Totally support; this is so critical and once they can recover the cost, impose penalties for not operating when called.
2. Not as a condition of participating in the wholesale market; maybe as a condition of counting towards resource adequacy. But this is unfair unless and until there is a way for generators to recover these costs.
3. New services will do no good until there is a way for generators to recover the cost for them to purchase those services.
4. Make the renewables pay for being intermittent? But that doesn’t address freezeoffs of gas supply or frozen compressors on a gas pipeline. Nah, this does not help solve the problem.
5. What has fuel neutrality got to do with anything or how would it provide cost recovery certainty? Winterization is a solution. More storage, including LNG needle peakers where underground storage is not possible is also a potential solution. But fuel neutrality?
6. On the fence here. It would be nice to punish generators who don’t have the fuel to operate when we need them. But. As long as we do not allow them to recover the costs to be able to operate, this would be unfair.
7. Sounds great. But what does it really mean without a way for generators to recover the cost to participate in those arrangements or facilities spurred by those incentives. Maybe we mean incentives to the generators.
8. Doesn’t address the real problem. Balancing and fast ramping is a problem in places and will probably become more of one with more electrification. But the reliability problem is due to freeze offs amid adverse weather conditions that cause higher demand yet lower supply.
9. Yes, customers ultimately have to pay for reliability. A surcharge would make it obvious and spur discussion that current rates do not cover these costs.
10. Could help, but until generators can recover the cost of buying those services … Katie is becoming a broken record.
11. Hard to believe this is a real problem. Is it more of one with the War on Gas? So we need to make clear to folks that reliability hinges on these facilities? Of course, if the wells freeze there won’t be any gas so still, do winterization first!
12. Mixes and matches unrelated concepts. Pipelines aren’t designed to meet peak demand, they’re designed to meet shipper contracts.
13. No, just winterize. Who pays for the reserve capacity? Now, that latter phrase about allowing pipes to use third-party storage for short or no-notice service … maybe that is useful. But still, the pipe has to be able to bill somebody for that cost.
14. I wasn’t aware this was in the WRAP. I recall that Southern Company required dual-fuel in order to count towards resource adequacy. Isn’t a bad idea but still need to winterize the wells or build nearby above-ground storage.
15. Don’t know if it should be all consumers or not. I would like it better if the wells got winterized so there was no unreasonable price spike to begin with.

Section II: **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased**

1. This came up in question 2.4 above; air emission waivers, RPS waivers fine but is pipeline quality gas really an issue and I am just not sure the Jones Act waiver helps recognizing the time it would take to find a tanker cargo and get it to port. No reason I guess not to allow the waiver, but I have a hard time seeing it result in real-time emergency gas supply. Suspending LNG export during an emergency would make more sense, actually.

Section II: **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased**

1. I like including large end users here; may be some question on how large is large because that may vary by service area … maybe define as a percentage of system gas use. Increased transparency and information sharing in an emergency seems like a good idea and goes back with ideas above about communication and maybe an emergency facilitator and maybe the facilitator can be an emergency service office or maybe the LDC, pipe and RTO should create one. Regulators may need to be part of that loop, too, for briefing elected officials in real time. Is hard to see how this can hurt. It would take time to set up. I thought ISONE already did this. CAISO does it to a degree but does not share the information much.
2. There should be curtailment orders in place already. What those orders may need is a review to make sure they properly account for gas-fired generation being needed for reliability.
3. Don’t see how this is different than item 2, immediately above here. If we winterized the wells against freeze off, of course, there would be less need to revisit curtailment orders.

Section II **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased**

1. This could work, maybe, as a way of compensating generators to purchasing reliability tools.
2. Unclear how this is different than item 1 above. This almost sounds like the generator would only get paid if a critical even occurred and that won’t work. The cost of these reliability -assuring services needs to be treated like insurance: we pay for protection whether the bad event occurs or not.
3. Not sure that which means but it doesn’t sound like insurance to me.
4. Don’t see how this would help but maybe I am not familiar enough with capacity auctions.
5. Didn’t this come up somewhere above? I don’t see it as solving the problem of needing reliability insurance or winterizing wells.

Section II **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased.**

1. sure. But winterizing wells would obviate this need.
2. I agree that the market should have some way of valuing reliability each hour and the inability to operate in all hours or hours needed might reasonably be reflected in prices. But but but intermittency is not the issue here.
3. Ok to require but not without addressing cost recovery issue
4. Dual fuel could help but so could batteries or more gas storage and winterizing wells. There are certainly places when even if one wanted to waive AQ regs and allow burning diesel, say, in place of natgas, that the fuel handling equipment would not fit in the power plant footprint, so this has some practical problems, too.]

Section II **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased.** [why is this the same as the question above?]

1 In my experience, this is a standard practice already implemented by any competent and prudent pipeline and LDC today.

2 sure but the generator has to be able to recover the cost of any of these investments it takes advantage of. The real problem is that we don’t have a market to value reliability and as far as I know, nobody has a proposal up their sleeve for how to create one. So we have to turn to administrative mechanisms like guaranteeing cost recovery outside the normal incremental cost dispatch mechanism. The need for the investment isn’t the problem so much as being able to recover its cost.

3 I feel like FERC tried for 20 years or more to encourage gas storage. The problem is that private investment couldn’t make any money on it and so little got built. Storage has significant public goods attributes, the western price spike this winter being an example. We come back to who pays for the storage and we do not see state gas regulators being willing to allow their customers to pay for it and generators in organized markets cannot recover that cost so we’re back to market failure around the value of reliability.

4 I cannot think of a single pipeline that would build in that capacity if there is no market for it (same theme as above).

5 Alternate fuels will be integrated with decarbonization. But there’s not enough to fix freeze offs like we saw with Uri. LNG needle peakers are probably a solution in many more places than they are used today. But back to the broken record on cost recovery. We all complain about price spikes but how will the person who prevents the spike be compensated for that resource? Somebody has to step up and allow cost recovery to provide the insurance we need.

Section II: **Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased**

1. ok, now we’re talking. Totally on board. Some of the approval has to come from state regulators and some from FERC probably for generators selling into organized markets. Discuss at NARUC?
2. Interesting. Would a call option provide enough revenue to construct LNG needle peakers? Maybe. But if a generator bought that call, the generator would still need a way to recover its cost. Would it work for the electric utility to be the one that holds the call or contracts for the emergency supply and sells it to generators in an emergency? That would add complexity and even mix up roles but avoids the generator cost recovery problem -- the utility would need regulatory permission to pass that cost on to customers but it might be easier to grant to the utility than to generators bidding into a dispatch market.

Section II: Recommendation 24

1 Methodologies to capture or recognize that value – and the value of reliability in general – yes. But this sorta sounds like a tautology. It isn’t that value that needs to be captured in rates so much as the cost to maintain that resource in order to assure reliability needs to be recognized. We are not paying today the insurance premium needed to assure reliability. Changing that would be a good thing.

2 Sounds like a general complaint and not related to emergency weather conditions. It is more likely that we want to talk with manufacturers about using them for demand response during an emergency. It is not clear to me that there is a general threat to interstate pipeline capacity used to serve them.

3 I don’t see this as urgent today but we do need to start paying attention to ramping patterns and NERC might be the right place to do it.

4 This is part of standard reliability assessment. I don’t see any need to delay focus on winterizing wells and adding more transparency and facilitating access to gas under adverse conditions by waiting for a study.

5 This is a side issue/distraction.



*Via Email (naesb@naesb.org)*

February 27, 2023

North American Energy Standards Board

1415 Louisiana Street, Suite 3460

Houston, Texas 77002

**RE: AGA’s Response to the February 2023 Survey**

North American Energy Standards Board:

The American Gas Association (“AGA”) appreciates the opportunity to provide responses to the survey issued by the North American Energy Standards Board (“NAESB”) on February 8, 2023 (“February 2023 Survey”) as part of the Gas-Electric Harmonization Forum (“GEH Forum”) process.

1. **Introduction**

AGA, founded in 1918, represents more than 200 local energy companies that deliver clean natural gas throughout the United States. There are more than 77 million residential, commercial and industrial natural gas customers in the U.S., of which 95 percent — more than 73 million customers — receive their gas from AGA members. AGA is an advocate for natural gas utility companies and their customers and provides a broad range of programs and services for member natural gas pipelines, marketers, gatherers, international natural gas companies, and industry associates. Today, natural gas meets more than one-third of the United States’ energy needs. AGA is an active member of NAESB and the GEH Forum.

1. **Comments**

Attached to this letter is a completed February 2023 Survey where AGA has noted its support or opposition, via “S” or “O” respectively, on certain recommendations. For items AGA did not take a position on, at this time, the S/O column is blank, but AGA nevertheless provided comments where appropriate. The completed February 2023 Survey also includes comments on certain recommendations for NAESB to consider. AGA reserves the right to update its positions once more details on any of the recommendations is released.

In addition to the February 2023 Survey, AGA incorporates by reference its prior submissions to NAESB since the initiation of the GEH Forum.[[17]](#footnote-17) As noted in its prior letters to NAESB, AGA believes that reliability of service for customers is an overarching priority for both the gas and electric industries. An overall goal of the GEH Forum should be to preserve and enhance reliability for all customers, both gas and electric. Furthermore, reliability efforts should be coordinated so that the reliability of one system is not achieved at the expense of the other system’s customers. As AGA previously explained, *inter alia*, that any harmonization effort must preserve the historic quality of service received by all firm pipeline customers. To be clear, any proposed solution should not be at the expense of retail gas customers or the utilities that have a responsibility to provide service to their customers. This should be a central tenant when reviewing the survey results including with respect to prioritization proposals, tariff changes, scheduling, *etc*.

1. **Conclusion**

The American Gas Association respectfully requests that NAESB consider these comments and the attached responses to the February 2023 Survey. AGA looks forward to continuing to work with NAESB as part of the GEH Forum.

Respectfully submitted,

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|  | Matthew J. Agen  Chief Regulatory Counsel, Energy  American Gas Association  400 N. Capitol Street, NW  Washington, DC 20001  202-824-7090  [magen@aga.org](mailto:magen@aga.org) |

February 27, 2023

The North American Energy Standards Board has requested comments in regards to the Gas-Electric Harmonization forum and proposed recommendations intended to reduce electric outages stemming from a loss of MWhs produced by gas fired generators that could result from a lack of fuel supply or conditions within gas fired generators that result in a failure to operate. NAESB has asked that comments be submitted by the close of business on February 27, 2023. SAFE (Securing America’s Future Energy) has reviewed the recommendations and would like to respectfully submit the following comments:

1. NAESB has asked that each proposed recommendation include commentary on whether the proposed recommendation is supported or opposed and to rank each recommendation in regards to priority. SAFE believes that the proposed recommendations provided are broad and in some cases duplicative and that a ranking would be extremely difficult in determining effective priorities. As a result SAFE is providing overarching comments to address the recommendations as they are compiled and broken down into various subsections. It is SAFE’s hope that these comments will provide a platform for additional discussion and discourse on appropriate recommendations to increase gas and electric harmonization and to increase the reliability of both gas fired generators and the power grid as a whole.
2. Section II focuses on measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies. While SAFE supports improved information sharing and communication between the two industries, SAFE also believes that FERC Order 787 provides explicit authority to interstate natural gas pipelines and public utilities that own, operate, or control facilities used for the transmission of electric energy in interstate commerce to share non-public operational information with each other for the purpose of promoting reliable service. As a result SAFE believes that efficient markets will leverage Order 787 to improve communications where needed to allow for markets to make effective planning decisions in procuring, nominating, and receiving gas supplies as needed for gas generator reliability. SAFE believes that a review of existing natural gas products would be beneficial to many electric generators as in addition to firm transportation, bundled peaking products are widely available to meet peak needs for limited hours or days of the year that can provide reliable supplies of natural gas during critical peak periods and black swan events. SAFE believes that continued efforts to sync the gas day and electric day would be beneficial to both industries. Both Winter Storm Uri and Winter Storm Elliott involved weekend and/or holiday nominations which created additional inefficiencies. As a result, SAFE supports incremental nomination cycles to accommodate for changes in forecasts and the weekend and holiday gas procurement and nomination cycles to allow for more flexibility particularly during extreme events. SAFE also supports further development of natural gas products that allow for non-ratable takes to more accurately reflect generator operations and usage patterns. SAFE also supports the use of multi-day clearing processes during and/or in advance of extreme weather events. SAFE believes that ISO/RTO pay for performance structures such as those presently implemented in ISO New England and PJM are effective incentives for gas procurement, scheduling, and generator winterization, however SAFE supports strengthening and expanding some of these programs. Additionally, SAFE supports derating natural gas fired units for IRP or resource adequacy purposes to the extent that generators have shown a history of non-performance.
3. In regards to winterization of infrastructure, SAFE believes that electric driven compressor stations and other gas infrastructure should have gas back up for extreme conditions or electrical outages. Furthermore, compressor stations that are electric-driven should not be on interruptible power tariffs. SAFE also supports requirements for well-heads and gathering systems to be winterized to levels consistent with ambient temperatures experienced during extreme cold weather events. SAFE also supports Jones Act waivers in the event of emergencies. Additionally, SAFE supports FERC recommendations that the NERC cold weather standards for generator winterization be expedited and strengthened.
4. SAFE supports incentives to spur investments in infrastructure as well as incentives for additional storage infrastructure along with streamlining the certificate review process to avoid delays and help natural gas companies better manage permitting processes. SAFE also supports the consideration of legislation to ensure sufficient interstate natural gas pipeline capacity at peak demand for the reliability of natural gas and electricity supply including expediting pipeline permitting and construction and providing national oversight to ensure a smooth transition to decarbonization.
5. SAFE supports a study to evaluate resilience given the near term composition of the resource mix, load demand and growth, and operational concerns including black start capability and ramping requirements.

North American Energy Standards Board

Gas-Electric Harmonization Forum Survey

**Comments of the Electric Power Supply Association**

*Attachment to GEH Forum Survey Form Provided February 8, 2023*

February 27, 2023

1. **Introduction & Summary**

EPSA will respond to certain specific recommendations outlined in the NAESB GEH February 8th Survey below. However, attempting to rank over 120 individual recommendations or declare clear support or opposition to each is not possible for many and, more importantly, is not going to indicate the market design or policy solutions that can or will address immediate system needs or longer-term system reliability or resilience. In fact, EPSA is concerned that such an approach to the expansive current list of recommendations is misleading as many of the recommendations do not move the needle in any quantifiable or useful manner, or sufficiently so to warrant the resources and deliberation required to develop them by NAESB.

*Please note that “N/A” is used in the survey to indicate that EPSA is not voting to either support or oppose a specific recommendation. This response may be necessary because a recommendation is overly vague, may address multiple conflicting proposals, does not appear feasible for general application, is already in place or under development, or EPSA is not suited to cast a vote one way or the other on a particular matter.*

While a goal of the GEH Forum Survey is to prioritize the full list of collected recommendations, EPSA suggests a better approach is to narrow the field of proposed solutions or approaches to those that will sufficiently address gas/electric coordination problems that have and do occur and thus are verifiable over recent extreme events. As an example, this would dictate excluding numerous recommended market “mandates” that are in fact descriptions of new or customized market services or products which would be (and are being) developed by market participants and/or vendors – these services (an EBB aggregation tool, for example) do not require market rule changes and should be clearly categorized as product or service development suggestions.

Additionally, several recommendations highlight issues that are and should be the subject of ISO/RTO or Balancing Authority market design, rules, and practices – this reflects not only the jurisdiction or obligation to develop improvements, but also the importance of deference to regional differences to address certain concerns. How each ISO/RTO market functions varies to certain degrees across regions; assumptions made in the GEH process can lead to incorrect or misleading inferences about how those markets work (and thus can be improved) – examples include the meaning of “firm fuel” or “firm transmission” as characteristics or options to inform planning, forecasting, or resource adequacy requirements.

NAESB’s role pursuant to the Winter Storm Uri report, and the way it can best serve the energy industry, is to issue a report with manageable objectives that focus on tangible improvements for policymakers – which includes identifying those rule or practice artifacts that remain in both systems but need to be on the table for reform if we are to move forward meaningfully. While we are all laser-focused on gas/electric coordination issues, this is one of many market and reliability issues that require attention and resources today, so this effort needs to be clear and direct as to recommended or required next steps. In order to assist the GEH effort, EPSA has highlighted areas of recommendations in Section IV below to identify priority buckets that may resolve or address coordination concerns.

It is important to start with clear identification of the problems which need to be addressed in the short-term and how the NAESB GEH Forum can craft recommended solutions or market reforms for development and implementation by an array of entities overseeing numerous jurisdictional fronts. The authorizing request for this NAESB effort comes from FERC and NERC in order to respond to findings and recommendations outlined in the agencies’ staff report on the February 2021 Cold Weather Outages in Texas and South Central U.S. (“Storm Uri Report”). Key Recommendation 7 from that report underpins this GEH Forum project. **Thus, EPSA believes that the goal of the GEH Forum is to identify and assess market reforms to improve the reliability of the interdependent natural gas and electric systems with an emphasis on those reforms that address the problems experienced during critical or emergency periods when both systems are under stress.** While the Storm Uri Report did not focus solely on this deliverable, the lessons of Winter Storm Elliott this past December indicate the importance of addressing critical period operations expeditiously.

Additionally, while many of the solutions or approaches identified by this forum will be widely applicable, there will be many which require deference to regional development and implementation as highlighted above. While it may add complications to crafting recommended solutions, it is necessary to ensure that regional system operators develop approaches appropriate and useful for their regional electric market design. We also need to acknowledge that many problems being addressed, existing rules which require reform, and opportunities for improvement lie firmly within the purview of state commissions. For issues which fall under state jurisdiction, this can result in broadly supported recommendations being developed to varying degrees (or not at all in some states), which can create or exacerbate a patchwork of approaches, practices, and obligations. For that reason, we should expend the time or energy to formulate recommendations on state-jurisdictional issues which the GEH Forum believes are critical for reliability and thus recommended to states as priority actions needed.

The recommendations which urge that studies be conducted by entities like NERC, the U.S. Department of Energy, and/or the national labs to evaluate resource adequacy of dispatchable generation and the sufficiency of fuel supply and infrastructure to support the energy transition and the impacts of extreme weather and climate change should be high priority items for action (see Recommendation 24: #3, 4, 5). This information is critical to establishing a baseline understanding of where the system stands today and what will be needed going forward to maintain reliability and resilience.

EPSA is committed to working with NAESB, the electric power industry, and the natural gas industry to find solutions to improve the reliability of both energy systems, noting that they are increasingly interdependent as our national energy transition continues at varying paces across regions.

1. **Defining the Problems to be Addressed**

While the GEH Forum has clear direction from the Storm Uri Report from FERC, NERC and Regional Entity staffs, the specific problems that need to be addressed remain moving targets as the GEH discussions have progressed. However, as Forum discussion has highlighted and Winter Storm Elliott underscored, there are certain limited issues that require immediate attention to improve the interaction between and reliability of the two systems during critical periods:

1. Cost recovery allowances for natural gas-fired generators to support advance fuel procurement for critical periods, including natural gas which is procured as directed or noticed by the system operator so that generators stand ready to run, but may not be called in real time.
2. Market-based cost recovery mechanisms will also incent and support contractual arrangements which ensure firm fuel supplies and support the natural gas system’s role in electric power reliability.
3. The requirement for ratable takes of natural gas during pipeline OFOs during critical periods/emergencies when power generators are needed to start quickly but the pipeline system is very tight or constrained by upstream pipeline systems.
4. The requirement that generators procure and schedule 3-4 days of natural gas supply and pipeline capacity over holiday weekends during critical periods/emergencies or extreme events which poses problems of illiquid gas supply availability as well as barriers to very short dispatch calls by electric system operators.
5. The mismatch between the power day and the gas day in terms of electric system operators scheduling dispatch without the necessary recognition of the gas system timeline, its operations, the nomination cycles, and gas availability. For example, during critical periods generators are often called unexpectedly without recognition of the NAESB schedule, which is further exacerbated for “just in time” dispatch by the amount of time between intraday nominations and the flow of gas.
6. **High Level Priorities for Action**

At the highest level, EPSA recommends that the GEH Forum identify for policymakers and jurisdictional authorities three different buckets of reforms which will differ in priority, development and implementation timelines, and coordination needed across jurisdictions:

1. Operations during critical periods or emergency conditions which create system stress for both the natural gas and electricity industries. While it is likely necessary to define a critical period, the system stress created during those times is a barrier to the flexibility needed to offer pipeline services which are often available during normal operations, and also causes power system operators to dispatch generators in a “just in time” manner that is out of sync with the gas nomination and flow cycles. There may be market reforms or approaches that can allow for operations, processes, or rules in place during critical periods that resolve or work around coordination problems that occur only during such events. *This requires attention to finding market-based solutions or processes as out-of-market actions can proliferate and impact the efficient and reliable operation of the electricity system broadly, even during normal operations.*
2. Operations during normal conditions, i.e., 365-day operations which can be improved to address current disconnects between the natural gas and electric systems, and which may require changes to address the ongoing, fast-paced resource mix evolution which causes natural gas-fired generation to run in a different, less routine (and more just in time) manner in order to balance the system as intermittent resources are increasingly deployed.
3. Infrastructure needs and development are a key part of addressing and facilitating the market reforms necessary to ensure and improve reliability of the Bulk Electric System as infrastructure for natural gas delivery, storage, and pipeline capacity is needed to allow for the flexibility required during critical periods when the natural gas system operates under very tight conditions. While infrastructure approval and development are more political issues with fewer avenues for rule or policy changes to support the development of additional infrastructure, the GEH Forum should highlight the importance of infrastructure maintenance and development to the reliability of both energy systems. Ensuring that both firm and interruptible gas pipeline tariffs allow available gas supply and/or pipeline transportation to generators in an economically efficient manner should be considered.
4. **Prioritizing Recommendation Sections**

In order to produce a report that is cogent and manageable, EPSA urges the GEH Forum to prioritize certain *areas* for recommendations as a starting point – EPSA attempts to do so here based on the predetermined sections set out in the February 8th Survey Form.

Section 1c: Information sharing for improved performance during cold weather emergencies – interdependencies (communications, contracts, constraints, scheduling). While some recommendations are not feasible or require information sharing that will not sufficiently improve coordination, this suite of recommendations on gas market scheduling does include several recommendations that should be high priorities for action as they would address some of the problems outlined above *as experienced* in Storms Uri and Elliott. Several planning & forecasting recommendations address issues under development in ISOs/RTOs (e.g., capacity accreditation which takes fuel supply into account as appropriate for a particular region and requires deference).

Section 2c: Methods to streamline the process for, and eliminate barriers to, identifying, protecting, and prioritizing critical natural gas infrastructure load. Defining conditions which trigger Jones Act and related environmental waivers in preparation for emergency periods is critical for such operations, as is prioritization of generators as human needs resources to ensure service during curtailment periods.

Section 3a: Requirements for firm supply, transportation, or dual-fuel capacity for natural gas generators. Recommendations 1-6 in this section address numerous approaches to address cost recovery for generators’ fuel procurement and transportation, firm service or storage, and costs related to dispatchability and balancing services. It is important for electric markets – on an appropriate regional basis – to develop market incentives and cost recovery strategies that work within their market design to promote and support reliability investments and penalize unreliable performance.

Section 3d: Resource accreditation requirements should factor in the firmness of gas commodity and transportation arrangements. Capacity accreditation for thermal generation units is in development in numerous ISO/RTO markets and should recognize the role of fuel supply as an aspect of capacity market incentive and penalty structures.

Section 3e: Barriers to and incentives for dual-fuel capability. Dual-fuel capability or backup fuel sources should be incented by system operators as a tool for fuel security as appropriate in their markets. In addition, the ISO/RTO market operators need to impress on environmental regulators the importance of dispatchable, dual fuel generation. Incentives are meaningless if an operating permit/waiver cannot be obtained.

Section 3g: Further study. EPSA supports additional study by sources as neutral as possible to assess current generation and fuel supply scenarios and whether and what additional needs may be indicated by expected changes to energy markets, climate events, electrification, and facility weatherization needs. In particular, EPSA supports recommendations 3 and 5 in this section.

1. **Additional Considerations for Recommendations and Priorities**

There are several themes that recur in the recommendations and which EPSA will highlight where applicable.

1. *Infeasibility:* There are several recommendations that are not possible due to physics, costs, or politics/will to change and we need to be realistic so that resources are focused on achievable reforms.
2. *Out-of-market or anticompetitive proposal:* this will render most out-of-market and all anticompetitive recommendations not valid for consideration, though some limited out-of-market emergency procedures may be necessary.
3. *Only applicable under extreme conditions/critical periods:* This may be a limiting factor for certain recommendations that are under consideration for general applicability during normal operations.
4. *Reallocation of costs and/or risks:* This needs to be acknowledged if a result of certain recommendations as the suite of solutions must be as balanced as possible for all sectors.
5. *Improvement to transparency/coordination:* While increases in transparency or information sharing should be improvements in most cases, in some recommendations the information should not be shared, should not be shared between identified parties, or do not achieve sufficient value to develop based on cost/benefit considerations.
6. *Jurisdiction concerns:* While the GEH report is tasked only with making recommendations and identifying jurisdictional entities to undertake certain reforms, some recommendations which fall under state jurisdiction only pose a concern that they will not be uniformly applied, even across a region much less nationally. Importantly, many of the problems being addressed, current rules which require reform, and opportunities for improvement lie firmly with the state commissions or ISOs/RTOs.
7. *Regional deference:* As discussed above, the regional ISOs/RTOs vary in their market design sufficiently to require deference as they develop revisions or market improvements to address interdependencies through planning, forecasting, or resource adequacy/capacity markets and obligations.

**Attachment A**

**The New England LDC Group**

**Comments on Responses to NAESB Gas Electric Forum March 3, 2023 Survey**

The New England LDCs submit these comments to reiterate their dedication and obligation to provide regulated gas service to their customers in a safe, reliable and cost-effective manner across all time horizons. They also seek to further highlight the challenges they face in serving growing demand for gas from residential, commercial, and industrial customers even after applying leading energy efficiency programs and doing so in a region (New England) that has long suffered from acute capacity constraints.

While we support the development of tools to assist the with the coordination of industries, there are already US pipeline electronic bulletins boards, which are standardized across the industry and which contain a tremendous amount of information on operational status, critical events, capacity status, available capacity, notices and much more. In New England, there is already significant coordination between the Independent System Operator of New England (“ISONE”), other connecting ISOs, pipelines, regional transmission owners, LNG importers and LDCs. It is possible that that this information is not universally known in the power sector and perhaps more training is needed regarding how to access and interpret such information. While the ISONE already conducts several analyses throughout the year and in preparation for extreme events, these efforts do not alleviate the fundamental issue of lack of fuel security such as the acquisition of natural gas and oil prior to winter periods.

We understand most power generators, at least in New England, already utilize asset managers. The problem is few have actual firm capacity, storage assets to manage and instead they rely on so called “just in time” supply sources to align with the market incentives for generation of electricity. The lack of power generators pre-planning for firm fuel resources and supply for their generation obligations and instead relying on interruptible, as-available sources of gas is the underlying issue that must be addressed. Regarding planning/forecasting, advanced planning is foundational to a reliable system and the New England LDCs have observed shortcomings in the fuel supply and resources planning processes for the power sector, as evidenced by the dependence on just in time fuel supply. With respect to gas capacity release/secondary markets, price discovery does exist when there is capacity and gas available to buy and sale. But this is limited in regions such as New England where inadequate gas pipeline capacity during cold weather periods has resulted in an increased dependence on LNG imports which are not guaranteed to be available. In addition to capacity release markets and asset management agreements, there are robust day ahead and intra-day markets for gas bundled with capacity throughout the year with many participants.

Gas LDCs are state regulated including determining contingencies, based upon their own demand circumstances and portfolios in dynamic environments. Each LDC designs and manages portfolios for their own customers according to these time-tested planning standards. In New England, like many other locales, harsh weather conditions are often experienced including severe temperature deviations from initial forecasts and Gas LDCs must be prepared to serve their customers. In addition, local and interstate pipeline operating conditions are changeable and subject to emergent repairs,

compressor outages, and other unforeseen circumstances, which is why prudent planning to meet reliability needs requires careful, well-designed, and dynamic contingency plans.

Regarding Gas LDC reforecasting requirements, this is a matter of state regulation because states have charged the LDCs with ensuring reliable service to customers under all weather and operational conditions. LDCs design, operate and manage portfolios designed for their system customers. It is not feasible and is potentially risky to gas customers for a third party that is not privy to the specific dynamic conditions and portfolios to seek to require LDCs to release capacity or supply. Under all circumstances natural gas customers without dual fuel such as firm residential, commercial, and industrial customers must be prioritized when gas supplies are short because the public interest and human needs are paramount and because relighting pilot lights and restoring gas service if interrupted is a lengthy and painstaking process. The widespread loss of gas service to such human need customers can be accurately referred to as catastrophic. For this reason, the natural gas industry structure has long recognized the critical importance of effective planning and commitments supported by physical long-term infrastructure to meet customer needs and any reduction to these standards would likely only create more issues to the safety and well-being of society.

The New England LDCs believe that the current NAESB standard contract force majeure provisions are somewhat vague and efforts should be made to clarify and tighten performance obligations. This was most recently evidenced during the Dec 24-27, 2022 cold weather events. There could also be improved communication from the production area and midstream system operators during these events to better understand the impacts to the downstream pipelines.

Regarding interstate pipeline “line pack” in advance of critical events, it is our experience and understanding that it is already a standard practice as part of prudent operations for pipelines to serve their firm shippers in a reliable manner and does not need further discussion. With respect to reserve capacity the group supports further examination to pipeline design to reflect a “loss of critical unit” design performance criteria. There could be opportunities for the pipelines to further develop their service offerings to consider these and the unique “peaking” fuel needs of the electric industry.

While the situation in New England, coupled with the complicated clean energy transition, does not lend itself to a one-size-fits-all approach, there are measures that can and should be taken now to ensure the continued reliability of service to the New England LDCs’ firm gas customers. Notably, continued awareness of these critical issues is paramount to crafting long-term solutions. The New England LDCs continue to support the important role of diversity of supply during the clean energy transition. In connection with all of this is the need for a clear recognition of the important role the gas industry and gas infrastructure have and will continue to play well into the future to meet these important goals. This includes the need for extensive amounts of new clean energy infrastructure such as wind power and electric transmission projects, as well as the continued reliance on existing infrastructure, such as the regional imported LNG facilities. With respect to resiliency, we are supportive of efforts to enable a stronger and more resilient energy system as we focus on the issues that can help achieve the ultimate goal of serving customers in a manner that prioritizes both reliable and affordable energy.

AF&PA/PGC’s members are energy intensive manufacturing entities that use natural gas in their industrial processes and as a feedstock.

**1.a. Priority Recommendations: 1, 2 and 3[[18]](#footnote-18)**

**AF&PA and PGC support increased information sharing provided that the information is not used to reallocate or curtail deliveries of their firm gas supply and firm transportation services, which they contracted for, and paid for, in order to ensure the reliable delivery of natural gas on a firm basis during peak periods where demand for natural gas is high and supply is low, especially during extreme cold weather events**.

Any information sharing should also include end users of natural gas. FERC is the appropriate entity that should require additional information sharing regarding capacity release and standardizing postings to facilitate secondary transactions because FERC has authority over pipeline capacity. FERC should also set deadlines that can be achieved as soon as possible and require information-sharing measures that are cost-effective.

**1.b. Priority Recommendations: 6, 11 and 16.**

**6.** FERC, through its regulation of pipeline capacity release information postings, should require this additional information be provided as soon as possible and in a cost-effective manner.

**11**. FERC, through its regulation of wholesale markets, and NERC, as the reliability entity, should require generators to procure back-up services to ensure continued generation, which will effectively require new generators that want to participate in such markets to procure such services.

**1**. FERC should consider steps to facilitate advanced exchange agreements between end users of gas in a comparable manner to the demand response programs it has allowed for the electric industry. These programs must be voluntary and allow the end user to recover its costs.

**1.b. Additional Comments on Items Other Supported Recommendations:**

**4.** We note that ICE provides a platform for already, but, to the extent additional trading platforms are developed, they must be open to all users and be transparent.

**1.b. Additional Comments on Recommendations that are Opposed:**

**3.** FERC has in place a capacity release program that ensures transparency regarding capacity that is available for release so that all market participants can access such capacity. **Any changes to the capacity release program must ensure transparency for end users and the same opportunity to access such capacity**. We are concerned with the label of end users as “non-critical.” Our members produce critical products and denying them access to their capacity during critical periods could result in safety issues for their workers and irreparable harm to their equipment.

**10.** Some of our members take some services from LDCs and are concerned that modifications to the procurement practices of LDCs will degrade the quality of the natural gas service our members receive.

**1.c. Priority Recommendations: 18, 8 and 3.**

**18.**  **FERC should consider the extent to which the proposed Duty of Candor rule could potentially chill communications between industry members during cold weather events.**

**3.** FERC, through its authority over matters affecting intrastate pipeline transportation service, should require that pipelines and wellhead operators and mid-stream operators post information regarding wellhead operator issues and mid-stream operator operational issues that will affect interstate pipeline transportation services. States should also require LDCs and wellhead facility operators and mid-stream operators to post information that will affect retail distribution services.

**30.** FERC, through its jurisdiction over the wholesale markets, and NERC, as the reliability entity, should require modifications to the ISO/RTO and TP, TO, and GO planning process to include criteria to ensure that generators procure reliable and firm fuel supply and transportation to ensure reliable electricity supply.

**1.c. Additional Comments on Items Other Supported Recommendations:**

**4-5.** AF&PA and PGC would support the option to allow non-ratable flows and trading and scheduling based on an individual day, so long as it is voluntary.

**1.c. Additional Comments on Recommendations that are Opposed:**

**1-3.** AF&PA and PGC note that there is no evidence that changes to the natural gas nomination processes will help avoid the problems that were evidenced during the Polar Vortex and the Uri Storm. Based on the reports that were issued on these storms, many of the issues arose from failure to weatherize facilities that froze and failure to forecast sufficient load, which resulted in a failure to commit sufficient generation prior to the events. As indicated by other commentators, the gas market is most liquid at the start of the gas day, and changes to the nomination cycles are not going to result in significantly more gas availability, especially during a shortage situation where wells are freezing. Hourly gas nominations would increase our costs of doing business with no evidence that the benefits would exceed such costs.

**10-11.** AF&PA/PGC oppose additional reporting requirements that will increase costs with no demonstrated benefits.

**12**. In terms of new pipeline service alternatives to the traditional peak service, AF&PA and PGC note that seasonal and peak shaving services are available under some pipelines’ tariffs already.

**13**. AF&PA and PGC oppose creating new tariff services for critical weather events that would take away their rights to the current firm transportation services which they have already contracted for, and paid for, to ensure reliable services for their plants during critical weather events.

**21. AF&PA and PGC oppose any recommendation to reallocate or curtail deliveries of the firm gas supply and firm transportation services that they contracted for, and pay for, to ensure reliable service to their plants to provide delivery of natural gas to generators who did not contract for such services.** There is no legal basis for taking away our firm contractual rights to our gas supply and transportation services. If gas-fired generators need to be relied upon by the operators of the electric grid for reliable electric services, the FERC and NERC should require generators have reliable gas supply and transportation on peak days.

**2.a. Priority Recommendations: 7, 1 and 4**

**7**.AF&PA and PGC support the FERC and the states adopting additional resiliency requirements for gas infrastructure,subject to their jurisdictions, to prevent weather-related freeze-ups and fuel shortages, which appear to have been the primary issue in recent cold-weather events. However, it is important to demonstrate that they are cost-effective. To the extent they are cost-effective, additional resiliency requirements for gas infrastructure should be implemented as soon as practical and the costs allocated to the beneficiaries of such services.

**1 and 4.** AF&PA and PGC support states mandating increased transparency regarding the intrastate activities, as the lack of transparency was evident during the recent storm events. States should implement this change as soon as practical, and, hopefully, before the next major weather event.

**2.a. Additional Comments on Items Other Supported Recommendations:**

**2**. We support development of capacity release programs for intrastate capacity release markets, but it is unclear as to what modifications to these programs are being recommended where they already exist.

**2.a. Additional Comments on Recommendations that are Opposed:**

**6 and 9.**  Proposals to require LDCs to re-forecast demand and reserve calculations appear to have the potential impact of degrading the reliability of natural gas distribution service for our members who purchase such services.

**2.b. Priority/Supported Recommendations:**

**1.** FERC, working with the electric system operators and pipelines, should provide requirements for critical gas facilities. However, the costs of meeting such requirements should be allocated to electric service to follow cost causation principles.

**2.** FERC, relying on its jurisdiction over matters affecting interstate transportation of natural gas service, should work with the states to take any necessary steps to require changes to contracts or modernization and weatherization of facilities that adversely impact such service.

**2.c. Priority Recommendations: 1, 3 and 4**

**1.** States and the federal government should identify critical circuits and critical natural gas facilities to make sure they are not subject to load shedding as soon as possible, as this was an issue in Storm Uri.

**3**. RTOS and pipelines should collaborate to shift generation where supply is available in accordance with planning targets as soon as practical, so long as it does not degrade service to existing natural gas transportation customers.

**4.** We support the adoption of an emergency preparedness plan to all items listed except for waiver of pipeline quality specifications. Some of our members use this gas as a feedstock and may not be able to withstand changes in quality specifications of the gas that they consume.

**2. c. Additional Comments on Recommendations that are Opposed:**

**2.** AF&PA and PGC oppose any changes to the ***pro-rata*** curtailment of firm transportation services provide in the FERC tariffs for services that the contract for.

**3.a. Priority Recommendations: 11, 12 and 5**

**11.** FERC should work with states to streamline the certificate review process as soon practical.

**12.** FERC should identify any legislation it believes is necessary to ensure sufficient gas pipeline capacity on peak periods as soon as practical.

**5**. FERC should revise wholesale electric markets to the extent needed to provide long-term cost recovery for generators for their costs incurred that are required to ensure reliable electric service.

**3.a.** **Additional Comments on Recommendations that are Opposed:**

**13.** AF&PA and PGC oppose any recommendations to build extra pipeline capacity unless FERC ensures that natural gas customers will not pay for the costs incurred to provide service to electric generators who do not pay for such capacity.

**15.** To the extent the fuel is procured to supply electric service, it should be allocated to electric consumers only under cost causation principles.

**3.b. Additional Comment on Supported Recommendation:**

1. AF&PA and PGC reiterate that, to the extent that a cost recovery mechanism is adopted to improve the ability of electric generators to obtain fuels, those costs must be borne only by electric consumers.

**3.c. Additional Comments on Recommendations that are Opposed: -**

**AF&PA and PGC oppose any recommendation to reallocate or curtail deliveries of their firm gas supply and firm transportation services that they contract for, and pay for, to ensure reliable delivery of natural gas to generators who fail to contract for firm supply or firm transportation. We do not think any entity has the authority to take emergency action to interfere with our contractual rights.**

**3.d. Priority Recommendations: 5, 1 and 4**

**5, 1 and 4.** FERC, as the entity with authority over wholesale markets, and NERC, as the reliability entity, should consider these three recommendations to ensure that the electric system operators can rely upon accredited generators and participating generators to be available when they are called upon.

**3.e. Priority Recommendations: 3, 4 and 2**

FERC, NERC, and the states should take cost-effective actions to require grid operators to ensure firm fuel supply for generators and resource adequacy requirements to the extent necessary to ensure the reliable operations of the wholesale electricity markets and retail electric service.

**3.f. Priority Recommendations: 2, 5, and 3**

AF&PA and PGC support increasing the reliability of natural gas services to generators through integration of alternative fuels, LNG, storage, and line pack, so long as FERC ensures that the costs for these services are allocated to the generators based on cost causation principles and not to natural gas consumers.

**3.f. Additional Comments on Recommendations that are Opposed:** -

**4.** AF&PA and PGC oppose building spare capacity into expansions for generators without a commitment that the generators will pay for such capacity so that it is not subsidized by gas consumers.

**3.h. Priority Recommendations: 1 and 2**

AF&PA and PGC support increasing the reliability of natural gas services to generators through encouragement of LNG peaking services and a call option market for LNG, so long as only electric generators pay for the costs of such services, and it does not harm service to existing natural gas customers who pay for such facilities/services.

**4. Priority Recommendations: 5, 4 and 3**

**4. and 5.** AF&PA and PGC recommend that an analytical analysis study be conducted by an independent entity to evaluate the risks of extreme weather events and the cost-effectiveness of solutions to address these issues, as well as whether there are adequate resources in place to accommodate increased variable resources to the extent that this information does not already exist.

**3.** AF&PA and PGC recommend that FERC hold a technical conference to examine the adequacy of capacity to serve the manufacturing sector at the earliest time practical.

**Texas Competitive Power Advocates**

**Comments Regarding:**

**NAESB Gas Electric Harmonization Forum Survey**

**Due February 27, 2023**

**Section II – Prioritization of Recommendations & Comment Opportunity**

**1 Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies**

**1 a Whether and how natural gas information could be aggregated on a regional basis for sharing with Bulk Electric System operators in preparation for and during events in which demand is expected to rise sharply for both electricity and natural gas, including whether creation of a voluntary natural gas coordinator would be feasible.**

**Recommendation 2**: TCPA believes that the reliability of electric and natural gas industries can be improved with better coordination and information sharing practices between ISOs/RTOs, electric generators and natural gas pipelines and storage operators regarding the condition of system operations. While a great deal of information is already posted by interstate natural gas pipelines on their electronic bulletin boards, Texas intrastate pipelines as well as other intrastate gas systems, lack the same transparency with regards to pipeline operational status, actual flow data, and information regarding the market participants on their pipeline systems. Transparency is the cornerstone of any well-functioning competitive marketplace. Requirements for intrastate pipeline and storage operators to post the same or substantively similar information as interstate pipelines do on their electronic bulletin boards would help ISOs/RTOs ensure electric reliability and electric generators better adjust their fuel supply strategies during critical weather events. Since many of the intrastate pipelines also operate interstate pipelines, they already have the knowledge and systems capability to post such information such that it would not be an insurmountable burden to implement such a requirement.

**Section II – Prioritization of Recommendations & Comment Opportunity**

**Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies.**

**b Expanding/revising natural gas demand response/interruptible customer programs to better coordinate the increasing frequency of coinciding electric and natural gas peak load demands and better inform natural gas consumers about real-time pricing**

**Recommendation 3:** TCPA believes that interstate pipelines already have well-functioning and transparent Capacity Release Markets. The same cannot be said for intrastate pipelines which do not have the concept of capacity release with the ability to transact capacity as part of their electronic bulletin boards. Unused pipeline capacity can only be utilized by intrastate pipelines that sell interruptible services or by their marketing affiliates. In both scenarios, there is no mechanism to purchase the unused capacity directly from the shipper in a transparent marketplace.

**Recommendation 4:** TCPA believes that interstate pipelines already have well-functioning and transparent Capacity Release Markets. The same cannot be said for intrastate pipelines which do not have the concept of capacity release with the ability to transact capacity as part of their electronic bulletin boards. Unused pipeline capacity can only be utilized by intrastate pipelines that sell interruptible services or by their marketing affiliates. In both scenarios, there is no mechanism to purchase the unused capacity directly from the shipper in a transparent marketplace.

**Recommendation 5:** TCPA believes that interstate pipelines already have well-functioning and transparent Capacity Release Markets. The same cannot be said for intrastate pipelines which do not have the concept of capacity release with the ability to transact capacity as part of their electronic bulletin boards. Unused pipeline capacity can only be utilized by intrastate pipelines that sell interruptible services or by their marketing affiliates. In both scenarios, there is no mechanism to purchase the unused capacity directly from the shipper in a transparent marketplace.

**Recommendation 7:** TCPA believes that interstate pipelines already have well-functioning and transparent Capacity Release Markets. The same cannot be said for intrastate pipelines which do not have the concept of capacity release with the ability to transact capacity as part of their electronic bulletin boards. Unused pipeline capacity can only be utilized by intrastate pipelines that sell interruptible services or by their marketing affiliates. In both scenarios, there is no mechanism to purchase the unused capacity directly from the shipper in a transparent marketplace.

**Recommendation 8:** TCPA believes that interstate pipelines already have well-functioning and transparent Capacity Release Markets. The same cannot be said for intrastate pipelines which do not have the concept of capacity release with the ability to transact capacity as part of their electronic bulletin boards. Unused pipeline capacity can only be utilized by intrastate pipelines that sell interruptible services or by their marketing affiliates. In both scenarios, there is no mechanism to purchase the unused capacity directly from the shipper in a transparent marketplace.

**Recommendation 11:**

TCPA does not support this recommendation. The marketplace should value any new generation based on the generator project’s attributes and location. Other market mechanisms are in place by ISO’s/RTO’s that ensure that sufficient back-up services are available to support system reliability. For instance, any generator that is financially committed to the market (e.g., through the Day-Ahead Market or a bilateral obligation) is already required to pay for back-up services by either purchasing replacement power from the real-time balancing energy market or by through physical replacement.

**Section II – Prioritization of Recommendations & Comment Opportunity**

**1 Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies.**

**1 c Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling)**

**Recommendation 8:**

TCPA does not support this recommendation as stated. Requiring the purchase of bundled supply would consolidate market power that many pipelines already have over generators by eliminating the competitive discipline that should be brought to bundled gas service by the ability to contract for fuel and transportation separately *or* together. TCPA would only consider accepting this recommendation if ISO/RTO market rules provided for full cost recovery of such requirements.

**Recommendation 10:** Reporting of hourly price formation is unnecessary. Electric market price formation is very transparent, and the information available on interstate pipelines is robust. Price formation is not the issue, and requiring transparent information on the activity on intrastate pipelines with flows, capacity, any constraints or curtailments and other operational issues that affects the ability to deliver gas to power plants is what is needed. Since this recommendation does nothing to address those issues, and price formation is not the concern, TCPA opposes this recommendation.

**Recommendation 11:** Adding FERC transactional reporting requirements does not address the issues impacting reliability and consumer costs. The issues are with intrastate pipelines, which are not FERC jurisdictional, not interstate pipelines. This recommendation does nothing to address the issues the forum is attempting to remedy, and therefore, TCPA opposes this recommendation.

**Recommendation 16:**

TCPA believes that interstate pipelines already provide sufficient actual flow data on their electronic bulletin boards. Intrastate pipelines and storage operators should be required to post actual flow data similar to how interstate pipeline and storage operators report their capacity utilization.

**Recommendation 25:**

TCPA believes that interstate pipelines already provide real-time information sharing of system conditions data on their electronic bulletin boards. Intrastate pipelines and storage operators should be required to post actual system infromation similar to how interstate pipeline and storage operators report capacity and operational information as well as production, supply, and delivery issues.

**Recommendation 27:**

TCPA opposes this recommendation because it singles out natural gas-fired generators. Similar issues exist for all generators regardless of their fuel supply or reliance on weather conditions and will have different implications for different ISOs/RTOs so a uniform NERC Reliability Standard may be difficult to develop in a manner that is fair to all markets. Any required expansion of generator performance risk assessment should be done for all generator types on a non-discriminatory basis within the relevant ISO/RTO frameworks.

**Recommendation 28:**

Intrastate pipelines and storage operators should be required to publicly post critical notices (similar to interstate pipelines) for issues that impact or could impact pipeline system capacity with sufficient details to allow shippers to adequately plan for contingent supplies or prepare for interruptions.

**Section II – Prioritization of Recommendations & Comment Opportunity**

**2 Measures to improve reliability of natural gas facilities during cold weather (freeze protection, electric supply)**

**2 a Additional state actions (including possibly establishing an organization to set standards, as NERC does for Bulk Electric System entities) to enhance the reliability of intrastate natural gas pipelines and other intrastate natural gas facilities**

**Recommendation 1:**

An increased level of transparency is needed in the intrastate pipeline and storage markets to help ensure gas and electric reliability and affordability. In Texas, it is also needed to establish fair and reasonable pricing for services as required by the Texas Utility Code. Intrastate gas pipeline and storage operators should publicly post their available capacity, planned outages, operations, gathering and receipt point production issues, and other delivery issues similar to how interstate pipelines post this information on electronic bulletin boards. Since most intrastate pipeline operators also own and operate interstate pipelines, they already have the necessary infrastructure and knowledge of how to accomplish this information sharing at minimal cost and effort. Publicly posting this information will increase the overall gas-electric system efficiency and reliability and help level the commercial playing field to prevent companies that can exert market power from financially harming gas and electric end-use customers.

**Recommendation 2:**

TCPA believes that to increase reliability and efficiency of the intrastate pipeline markets, it is necessary to implement a capacity release market similar to what interstate pipelines already have in place. Unused pipeline capacity can only be utilized by intrastate pipelines that sell interruptible services or by their marketing affiliates. In both scenarios, there is no mechanism to purchase the unused capacity directly from the shipper in a transparent marketplace. A well-functioning capacity release market on intrastate pipeline systems would provide opportunities for willing buyers and sellers to buy and sell unused firm pipeline capacity and allocate such capacity at competitive pricing. The lack of a well-functioning, transparent capacity market allows intrastate pipelines to capture windfall profits during extreme weather events and these costs are ultimately passed on to both electric and gas end-use customers. Well-functioning capacity release markets on intrastate pipelines would also increase the incentive for electric generators to procure firm transportation capacity since they could monetize that capacity in times when is cannot be fully utilized for their own purposes.

**Recommendation 3:**

The lack of separation between pipeline operational and marketing functions allows intrastate pipelines to operate as regional monopolies and exert market power in the pricing of gas supply services particularly during time of high demand during extreme weather events, such as Winter Storm Uri. Customers are then forced to choose between exorbitant prices or the real prospect of having no access to natural gas supplies. This lack of competitive choice affects both the system reliability as well as the cost to gas and electric end-use customers.

**Recommendation 5:**

TCPA agrees with this recommendation but does not believe it should be limited to 311 Service, rather it should apply to all intrastate gas pipelines and storage operators. Transparency is needed in the intrastate pipeline and storage markets to ensure gas and electric reliability and affordability. In Texas, it is also needed to establish fair and reasonable pricing for services as required by the Texas Utility Code. Intrastate gas pipeline and storage operators should publicly post their available capacity, planned outages, operations, gathering and receipt point production issues, and other delivery issues similar to how interstate pipelines post this information on electronic bulletin boards. Since most interstate pipeline operators also own and operate interstate pipelines, they already have the necessary infrastructure and knowledge of how to accomplish this information sharing at minimal cost and effort. Publicly posting this information will increase the overall gas-electric system efficiency and reliability and help level the commercial playing field to prevent companies that can exert market power from financially harming gas and electric end-users.

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| **Section II – Prioritization of Recommendations & Comment Opportunity** | | |
| **Measures to improve reliability of natural gas facilities during cold weather (freeze protection, electric supply)** | |
| **b** | **Programs to encourage and provide compensation opportunities for natural gas infrastructure facility winterization** |

**Recommendation 2:**

Further work is needed to modify the force majeure language in the NAESB Base Contract for Sale and Purchase of Natural Gas to remove any ambiguity from the current language as to what constitutes a true force majeure event.

Please note:

* Any open boxes in the support/oppose column indicate a neutral position or additional analysis needed from our perspective.
* We did not note any rankings due to additional analysis needed.
* Please see below for our general feedback regarding information share and rule change / mandate recommendations provided on the survey.

1. **Information Share / Coordination** – Hoosier Energy supports additional gas / electric industry information share and collaboration opportunities that follow NDA and agreement language.

1. **Electric Generator rule changes / mandates** – Hoosier Energy does not support electric utility rule changes or mandates that cause undue harm on utilities or individual units nor if they do not provide any value to gas / electric harmonization efforts. Hoosier Energy does not support electric generator mandates such as firm transportation or dual fuel without additional incentives and/or additional analysis on a unit by unit case. What may be advantageous for one unit may not be for another unit. Hoosier Energy does support continued collaboration / analysis efforts that do provide value in determining standard operating procedures with the goal of improving reliability for both industries.

1. **Gas Utility rule changes / mandates** – Hoosier Energy does not support gas utility rule changes or mandates that cause undue harm on utilities nor if they do not provide any value to gas / electric harmonization efforts. Hoosier Energy does support continued collaboration / analysis efforts that do provide value in determining standard operating procedures with the goal of improving reliability for both industries.

To:

North American Energy Standards Board

Via Email to naesb@naesb.org

**RE: Response to the GEH March 3, 2023 Meeting Survey**

**Introduction:**

Southern Company, on behalf of its retail electric operating companies and its natural gas LDC companies (hereinafter, the “Southern Companies[[19]](#footnote-19)”) appreciate the current effort by NAESB to advance the Gas/Electric Harmonization effort. The resulting improvements from the last initiative have been beneficial and although this is a large and broad task, identifying additional improvements is paramount as our nation’s energy systems transition. Southern Company is one of the largest producers of electricity in the United States and the largest wholesale provider in the Southeast. Operating multiple retail electric utilities across three states in a vertically integrated customer-centric market, along with operating natural gas distribution companies across four states, gives us a unique perspective into many of the issues being discussed in the GEH effort.

**General Thoughts / Observations:**

Rolling blackouts in California in the summer of 2020, Winter Storm Uri’s deadly impact on Texas in 2021, and Winter Storm Elliott turning the deep south into a deep freeze in late 2022 all underscore the pitfalls of treating energy as just another commodity to be traded. During the most extreme periods of these events, all were reminded that energy is a *necessity*. From keeping critical health care equipment functioning to ensuring the most vulnerable can stay warm, safety remained paramount during these events. Price signals, market structures, and scarcity pricing were acutely secondary for the individuals whose lives were endangered during these extreme weather periods. Focusing on energy as being “essential” should be the foundation of any proposed solutions by the NAESB GEH committee. Ensuring that the Gas and Electric industries can meet their *obligation* to serve should be the priority, as the customer is always the ultimate stakeholder.

As a vertically integrated electric utility, planning is driven by state regulated IRP processes which govern most of the Southeast region of the United States. As a result, Southern Company’s retail electric operating companies (the "Operating Companies") are directly accountable to our 4.8 million electric utility customers for balancing both reliability and cost. To best mitigate fuel supply risk, Southern Company Services, Inc., (SCS) on behalf of the Operating Companies, contract for firm fuel supply, firm natural gas transportation, and natural gas storage capacity to support our electric generation feet. Notwithstanding the costs incurred for these mitigating services, our retail electric prices remain below the national average and lower than many other utilities operating in areas where no such firm fuel supply obligations exist. The customer-centered markets in the Southeast are best positioned to manage these risks today.

Every utility must manage some inherent supply chain risks associated with fuel supply regardless of the type of market structure in place. Winter Storms Uri and Elliott demonstrated no utility or market structure is immune from the strain placed on an electric system during an extreme cold-weather event. As the energy transition to a net zero future moves forward, the increased reliance on natural gas will put pressure on the natural gas infrastructure. The increasing stress on the gas infrastructure is most apparent during periods of extreme demand. Policies designed to ensure the infrastructure supporting the natural gas supply chain can perform and keep pace with the energy transition are critical to ensuring reliability for customers. Southern Companies support recommendations to mitigate these inherent supply chain risks by adding natural gas infrastructure and increasing pipeline capacity because these recommendations can deliver the greatest and broadest impact. Additionally, ensuring systems and processes are flexible enough to withstand extreme events is critical. Providing operators with timely and useful information to make fast and informed decisions will benefit everyone.

Conversely, market-based solutions that rely exclusively on price signals and focus on the allocation (or re-allocation) of limited resources instead of ensuring sufficient resources are available to serve all customers are not the solution. Instead, reliability and resiliency must be at the forefront of any recommendation.

Please find the following information an addendum to the survey response which was included in the email. Survey questions and responses are included below with comments after each section. Thank you again for the opportunity to respond.

We appreciate the opportunity to comment and respond to the survey. You will find our survey comments on the following pages.

Sincerely,

Paul C. Hughes  
Manager, Energy Policy  
Southern Company Services, Inc.

**General Response to Recommendation 1.A:** Vertically integrated customer-centric markets already provide critical information to the Bulk Electric System operator, as visibility into the fuel supply chain is essential. Operational realities may dictate actions on the system that would not otherwise be visible in price signals alone. Looking forward, as on-site fuel generation such as coal continues to decline placing more pressure on off-site, just-in-time delivery fuel, the importance of increased natural gas infrastructure (pipelines, storage, etc.) will grow. Unless the issues associated with the inability to develop the underlying gas infrastructure are addressed, data-sharing and coordination alone cannot solve the underlying risk of not being able to get adequate gas supplies to the market.

**General Response to Recommendation 1.B:** We are concerned that the general approach described relies too heavily on price signals and may result in the misguided approach of focusing on methodologies for allocating constrained resources instead of focusing on solutions to enhance natural gas supplies for all.

**General Response to Recommendation 2.A:** Many of the items listed above are already considered in the state review of integrated resource plans in place in a vertically integrated market. Additional requirements would be duplicative. Additionally, none of the recommendations have the potential to increase gas capacity or the gas commodity.

**General Response to 3A:**

Southern Companies believe that the state regulated IRP process is effective in addressing many of the items listed in the question above. Although we support the recommendation to utilize some of the attributes of a vertically integrated utility, we are concerned about certain recommendations to create incentives and subsidization mechanisms to accomplish the stated goals.

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**February 27, 2023**

The Texas Pipeline Association (TPA) appreciates the opportunity to submit these comments related to the Gas Electric Harmonization (GEH) forum stated purpose of: improving gas-electric information sharing for improved system performance during extreme cold weather emergencies; improving the reliability of natural gas facilities during cold weather (freeze protection, electric supply) extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased; and identifying measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased.

**INTRODUCTION**

The TPA is the largest state trade association in the country representing solely the interests of the intrastate pipeline network and the Texas pipeline industry. The TPA consists of nearly forty members who, collectively, engage in the gathering, processing, and transmission of natural gas and liquids through pipelines across Texas. As such we believe we are in a unique position to provide context and insight to issues being discussed. They are no way intended to be an exhaustive list of efforts carried out since Winter Storm Uri. These comments are submitted on behalf of TPA, are not meant to be reflective of interstate pipeline positions, and do not necessarily reflect the opinions of any individual TPA member. As such, we submit these general comments for consideration as opposed to specifically ranking matters in the proposed survey.

**GENERAL COMMENTS**

First and foremost, it must be said that the bulk of proposals put forth during GEH forum conversations both at the state level and now in this federal forum have little, if anything, to do with increasing the reliability of the Texas natural gas system, the electric generation fleet, or the operation of the electric grid. As discussed in more depth below, the primary barriers to obtaining fuel or transportation capacity service during extreme cold weather exist in an electric market that, by design, does not allow generators a means of recovering the costs associated with securing firm service and provides generators no certainty as to when their assets will be called upon to operate. Neither of those issues could be remedied by upending the thriving natural gas market in Texas.

The Texas Pipeline Association (TPA) has been, and continues to engage with state regulators, legislators, electric generation counterparts as well as upstream natural gas stakeholders and downstream consumers to address any actual or perceived problems attributable to the intrastate natural gas system. Those efforts are detailed in greater depth below, but as a general matter, the TPA has stood ready and willing to serve as a resource in discussing these very technical and intricate concepts. Since the storm, however, some electric industry representatives, most notably power generation advocates, have continued to push for the state of Texas to adopt policies more in line with federally regulated interstate lines, yet are seemingly unable to articulate specifically what doing so would achieve given the remarkable differences between the two market structures.

Below is a summary of responses we have given to concerned parties over the past two years regarding regulation and operation of intrastate pipelines, a high-level overview of the differences between the inter and intrastate natural gas markets, as well as examples of ways issues can be addressed that are the subject of NAESB Gas-Electric Harmonization (GEH) Forum Survey.

1. **What’s already being done in Texas.**

The Texas Pipeline Association has participated in every legislative hearing and regulatory rulemaking on these issues since Winter Storm Uri. One such rulemaking at the Railroad Commission of Texas (RRC) adopted a new curtailment rule similar to the emergency order commissioners issued during Uri to prioritize natural gas deliveries for human needs.[[20]](#footnote-20) The rule also elevated gas deliveries to electric generation facilities as high priority - higher than under the previous rule and second only to human needs customers and the distribution systems which serve the homes and hospitals of Texas, to name a few. During Uri, 99.95% of residential gas utility local distribution customers were able to maintain natural gas service during the storm.

It is also important to note that to date, no generator who secured both firm supply and firm transport service was curtailed by intrastate pipelines during Uri or any subsequent cold weather event. If the agreements were in place and the molecules showed up customers got the gas for which they contracted. This is invaluable as it demonstrates that with proper planning, intrastate pipelines are capable of serving the human needs customers at both the LDC level, as well as the electric generation level.

In addition to the RRC rule, several pieces of legislation have been enacted in the state to address gas and electric reliability during extreme weather events, including increased coordination between the gas and electric industries. The following is just a sampling of the state-stewarded initiatives put into place since the conclusion of Winter Storm Uri: implementation of SB 3 directing the Designation of Critical Infrastructure facilities at both the PUC and the RRC; the adoption of weather preparedness standards at both the PUC and the RRC; completion of the Texas Energy Supply Chain Map; and the formalization of a committee with the sole purpose of fostering communication between the gas and electric industry prior to any sort of winter event or other emergency, also known as Texas Energy Reliability Council (TERC). TPA participated in discussions in the drafting of the various pieces of legislation and commented on all major rulemakings at each of the relevant agencies.

While we agree that securing contracts for firm supply, transport and storage is the most reliable method of ensuring natural gas delivery to a generator, we do not, nor have we ever stated that it is the only remedy to the generator’s concerns. We *do* recognize that in one instance, there is a pipeline serving a power generation plant that is dedicated to serving local distribution companies (LDCs), i.e. human needs customers, and therefore is unable to offer firm service.[[21]](#footnote-21) This line was built specifically for, and is dedicated to, LDC service. It was built out from those LDCs to producing regions many decades ago and has never offered firm service to any third parties. Those who have built facilities on that line, and those purchasing plants built on that line, did so with that knowledge from the beginning. To make a blanket statement insinuating that a single circumstance is somehow applicable to all operations in the state, and then using that single circumstance as some form of justification for a complete overhaul of an otherwise successful system, profoundly misconstrues the actual state of operations in Texas.

That information notwithstanding, there are a number of intrastate pipeline operators who are willing to build lines out to that area and have offered to do so in return for securing firm transportation contracts. Those generation facilities have had ample opportunity since the time of building or purchasing facilities on that line to do so, but to date, have not.

If, for whatever reason, a generator does not want to enter into firm service contracts in order to ensure availability of firm service to their facility, it should be noted that other mitigation mechanisms exist to help those operators stay up and running, even if their deliveries of gas get curtailed or otherwise interrupted. Traditionally, interruptible service customers either maintain internal storage sources or have an alternative source of fuel as interruptible contracts, if not expressly, then impliedly require installation of an alternative fuel capability.[[22]](#footnote-22) That is to say, that even in the single instance where firm transportation service is not currently offered, it is well-established that there are other ways of bolstering reliability.

The following is an excerpt from a 2020 NERC Fuel Assurance and Fuel-Related Reliability Risk Analysis for the Bulk Power System,[[23]](#footnote-23) less than a year before Uri, where NERC makes the following suggestions to generators regarding fuel assurance planning:

**“**Generator owners/operators should seek reliable delivery solutions from both a transportation and commodity perspective. Monitor and evaluate risks associated with varying levels of transportation or delivery options associated with the different types of transportation (e.g., interruptible transportation, firm transportation). Consider and evaluate a diverse portfolio of products that can be utilized to deliver fuel both reliably and cost-effectively; examples of these are as follows:

• Delivered bundled products

• Firm call options for periods of heightened fuel uncertainty

• Asset management arrangements

• Potential purchases from suppliers with firm capabilities

• Enhanced infrastructure considerations

• Storage capacity

• Liquefied natural gas (LNG) options

• Dual-fuel capability

• Interconnection with more than one pipeline

• On-site fuel reserve

Generator owners/operators should consider credible fuel-related contingencies that impact their facilities and provide fuel-related facility outage concerns as necessary to the reliability authority. Lastly, *where fuel delivery constraints are routinely evident, generator owners/operators should consider and investigate whether new options for fuel deliveries to a specific facility or their fleet are available.”* This last sentence is of particular importance to note where generation facilities experienced outages in similar storms prior to February 2021.[[24]](#footnote-24)

**Regarding the assertion that the Texas intrastate market lacks transparency.**

It has been stated on more than one occasion that there is no transparency when it comes to intrastate pipelines in Texas. One such assertion is that “pricing,” i.e. the rates for transportation and storage, are not posted anywhere by intrastate pipeline and/or storage operators.

Contrary to these statements, both transportation and storage rates are required to be posted in Railroad Commission tariffs to the extent that the facilities are gas utilities- that is, that they are part of an intrastate pipeline system.[[25]](#footnote-25) Currently, under 16 Tex. Admin. Code 7.315, the following are just some of the provisions a gas utility is required to include in their tariff filings:

* a list of services the utility provides under the tariff (including transportation, underground storage, residential sales, sales for resale, electric generation sales, and “other”);
* the current rate detailing all charges that may apply under the contract as well as a description of the components used in calculating that rate, including any penalties, fees or taxes;
* any rate adjustment provisions; and
* the effective date of both the original agreed rate and that of any amendments.

There are additional requirements for gas utility distribution system services or sale, transportation and exchange services or rates, and transaction by a gas utility with another utility including filing contractual points of delivery and indicating whether the transaction is between affiliates. Note, while the customer’s name is required to be filed in the tariff with the Commission, one or both parties may request that information be kept confidential. Often, the customer is the one who requests their name be kept confidential.

As detailed more below, Texas is a competitive market and in a competitive market you do not publish your customer’s private contracts. Further, doing so would do nothing to enhance reliability.

**Need to recognize unique nature of Texas operations.**

While we understand what a crucial role Texas natural gas plays in supplying other states as well as other countries, it cannot be overstated how unique Texas is in comparison, even to other states that have intrastate lines like California and Pennsylvania. Whatever reforms are recommended as a biproduct of these discussions will undoubtedly affect other states differently than Texas. No blanket recommendation can be made that, if implemented, would achieve a uniform result.

The state has been working non-stop since the storm to bolster reliability between the two industries and those efforts have continued into the 88th regular legislative session that began in January. The Chairman of the Texas PUC and the CEO and president of ERCOT have stated publicly, on multiple occasions, that the reforms put in place since last session are more than sufficient to ensure that we as a state never again experience a reliability crisis like the one we saw during Winter Storm Uri.[[26]](#footnote-26) The state regulatory bodies that oversee both the electric generation fleet as well as the natural gas utility pipeline networks sit on the Texas Energy Reliability Council and have been engaging in substantively similar conversations to those in the GEH forum for almost two years now. As established below, the unique scenarios Texas markets and their participants face require particular regulatory insight and are best served by the subject matter experts who have been helping navigate these new and ever-evolving issues. Duplicating these conversations and efforts at both levels of government is inefficient, illogical, and unnecessary given the immense amount of effort that has already gone into implementing these reforms at the state level.

While we continue our willingness and dedication to serve as a resource to those less familiar with the unique operations of intrastate natural gas utility pipelines, and how they affect supply to other parts of the country, it is unclear what this forum believes it can recommend that is not already being done extensively at the state level.

1. **High-level overview of the differences between the inter and intrastate natural gas markets.**

While there are a number of interconnections between the federally and state-regulated pipes, the two systems were developed under entirely different regulatory constructs and serve different (albeit complementary) needs. Intrastate pipelines run into several discrete problems that don’t exist commonly in the interstate transport market. Areas in which those differences exist primarily include commercial operations and logistical/physical operations.

* 1. **Commercial Considerations.**
     1. *Differences in the markets - Competitive v. Cost of Service.*

There are more than 210 intrastate gas utility pipeline companies currently operating in Texas’s commercially driven and highly competitive intrastate market. These utility pipelines are businesses that compete to serve customers, and the business on those lines is proprietary. As such, the accessibility of information is driven by commercial considerations in addition to regulatory ones.

Under this competitive, contract-based structure, the pipeline company assumes the financial risk in building a new line and needs some assurance from the other party (such as firm contracts commitments), that they will be able to recoup their costs.[[27]](#footnote-27) A recent successful example of this concept can be found in the final investment decision to move forward with the construction of the Matterhorn Express Pipeline from Waha to Katy, after having secured sufficient firm transportation agreements with shippers based on the pipeline’s own risk assessment.[[28]](#footnote-28)

This contractual relationship allows every customer the opportunity to customize the service they receive to their needs at competitive market rates, as compared to FERC regulated interstate lines, where pipelines are afforded recovery through rates collected under the cost-of-service model after demonstrating public convenience and necessity for an additional pipeline. If a customer would like to contract on an intrastate line but wants that line to operate like a FERC regulated line, they can structure their contract that way. Just as there is a large universe of intrastate gas utility pipelines[[29]](#footnote-29)- with thousands of receipt and delivery points- there are equally many end-users contracting with those utilities. It is for this reason that maintaining flexibility in contracting is so important. It is also what makes contracting for service in Texas so desirable. Sophisticated parties can tailor agreements to suit their particular needs, and not be hamstrung by prescriptive and inflexible mandatory terms.

The public policy underlying these practices is to let the open market, and not the state – be it agency or legislature- dictate the economic and commercial decisions between gas utility pipelines and their customers.

* + 1. *What information is made available.*

There have been repeated calls for the implementation of Electronic Bulletin Boards (EBBs) on intrastate pipelines, citing the existence of similar boards on the interstate system. Past testimony in state legislative hearings allege that the information being requested is publicly available on interstate boards and so too should be required on intrastate boards.

This not only underscores the continued lack of comprehension of the difference in the two markets, but it also highlights a misconception about what certain data points might tell you. There seems to be an idea that intrastate pipelines should be required to post volumes and pressures at points along the systems because the interstates do so, however interstate pipelines are not required to post real-time volumes or pressures on their websites for public view. The assertion is that these EBBs reflect real-time flows and capacity, which they do not. Contrary to some claims by specific generators, this data would not “track the flow” of gas in Texas.[[30]](#footnote-30)

Information about available intrastate capacity can be secured in real time via instant messaging, email, or phone calls to pipeline companies. Any posting of that information would almost immediately be stale, misleading market participants as rapidly conducted transactions keep available capacity constantly in flux. EBBs are not a market clearinghouse for shippers to identify capacity available for contracting and they shouldn’t be implemented to do so in Texas.

What many interstates *do* do is “path” (or map the infrastructure available to move product) how gas flows from point A to point B. At the interstate level, this is straightforward. A more or less straight shot, or “soda straw” model, from one point to another with little or no stops along the way. In Texas, it looks more like cobwebs with thousands of receipt and delivery points throughout, travelling in multiple directions, and gas coming on or off the system. Knowing a pressure or volume at any one point will in no way be indicative of where the gas came from or is going. What’s more, the fact that gas is reported at a certain point on an intrastate line does not mean gas or transportation capacity is actually available (uncontracted) at that point at the time it was reported.

Additional information some seem to be seeking is the identity of shippers and specific information about the capacity they hold on a particular pipeline. As referenced above, this information is proprietary. Historically this information has been held to be excepted from disclosure under the categorization of being a trade secret.[[31]](#footnote-31) While this is a rebuttable presumption, meaning it is not a blanket protection, any compilation of information such as customer names which is used in one’s business, and which gives it an opportunity to obtain an advantage over competitors who do not know or use it, have been protected by law time and again.

What’s more, it is often the shipper who does not want their competitors to know this private information, nor is that information necessary for generation customers to contact pipelines and arrange transport service for their own use. It should be noted that the purpose of current filing requirements is not to serve as “free discovery.” Nor are they designed to be a negotiation tool or a litigation aide. The tariff requirements are designed to be as transparent as possible, stopping short of infringing on confidential competitive business information.

* 1. **Logistics and Physical Operations.**

As discussed above, much of the way interstate lines are regulated is based on a very straightforward, one entity “soda straw” style design.  Intrastate lines, in contrast, contract across multiple pipeline operators on a unitized basis. The system itself is very much non-linear.  There are multiple physical paths for gas flow and attempting to map out all points would severely limit operational flexibility while simultaneously restricting the optimal leveraging of the pipeline asset.

Capacity on interstate lines is essentially a fungible commodity in that the product starts in one location and typically travels only in one direction, passing a handful of receipt and delivery points. Its value is the same to all customers. Intrastate utility lines on the other hand allow transportation service to be customized to distinct locations on a directional basis. That location, however, may not have the same value to another customer as it does for other customers with different needs and regional demand. Recognizing this difference between the inter and intrastate systems is crucial to understanding why imposing a one-size fits all approach to a fluid market would disproportionately affect some companies more than others. Creating this level of uncertainty in the market ultimately disincentivizes the building of new generation, the building of new pipelines, and engaging in firm contracting in Texas.

1. **Issues identified by the GEH Forum Survey that *can* be addressed.**

There are a number of ways reliability can be enhanced and some of the mentioned concerns can be addressed, including keeping infrastructure construction expeditious; not upending a natural gas market that overall operates very well; mandating or enhancing the coordination and communication between generators and their regulatory authorities; and continuing to study and implement potential changes to the electric market.

**Keep infrastructure construction expeditious.**

As pointed out in the GEH forum survey, there is an increasing need for more pipeline infrastructure. The Texas Pipeline Association agrees. In both the state of Texas and in others there is a critical need for additional natural gas pipelines. One constraint that federally regulated interstate pipeline operators have that Texas regulated intrastate lines do not is the gauntlet of bureaucratic paperwork and permitting processes that significantly hamper the ease and ability of getting these lines built out.

In Texas, intrastate natural gas utility pipelines can be built with relative ease and in an expeditious manner. Construction and contracting in Texas is not permission based, and no need must be demonstrated for the approval of new pipeline infrastructure. Those wanting to build an intrastate pipeline file a notice to the Railroad Commission of their intent to build, and subject to meeting certain pipeline safety requirements and having the capital to build, operators can begin putting steel in the ground. The flexibility afforded industry participants by virtue of the competitive market is what attracts business to Texas and allows this infrastructure to be constructed and contracted for in a timely fashion to respond to market demands.

The reforms that some groups seek would undermine the risk-based investments made by pipeline companies and shippers by removing Texas’ nimble and successful intrastate natural gas pipeline system in preference of one which has historically expanded much more slowly due to burdensome regulatory frameworks with increasingly lengthy permitting timelines. With the state already seeing bottlenecks in high production areas, [[32]](#footnote-32) now is the time to be aiding in the safe but expeditious building out of natural gas infrastructure, not attempting to emulate a system that would do nothing but stymie this development.

**Enhance coordination between generators and their regulatory authorities.**

It has been established time and again that intrastate pipeline operators serving electric generators in Texas already provide their customers with notice of planned outages well in advance - sometimes months in advance. Why the generators do not share that information with their regulatory body (ERCOT) we don't know, but it seems that is something they could easily do. ERCOT has acknowledged the need for this sharing of information at a number of different legislative hearings, although their proposal has always been for gas utility pipeline operators to provide that information to ERCOT directly.

Reforms to regulations mandating this sharing of information between the generators and their state regulatory body is far more likely to aid in grid reliability than any of those proposed by certain generation advocates to date.

**Electric market reforms.**

The Texas Senate Business and Commerce Committee held its first hearing of the 88th Regular Legislative Session on February 7th, 2023, to discuss proposed changes to the wholesale electric market design and the impact those changes may have on the reliability of the Texas electric grid. Committee members spent nearly six hours questioning the three invited witnesses on their views on how the proposal might affect Texas operations of the grid and its electric market. Panelists were questioned extensively by Senators about the proposed Performance Credit Mechanism (PCM)- the uncertainties and challenges associated with advancing an unproven, costly, complex, and bureaucratic capacity market like the PCM. While it is still unclear what the appropriate next steps will be, as there is some disagreement about whether the current market needs such an overhaul.[[33]](#footnote-33)

Another recent development with potential reliability effects is ERCOT’s release of a draft proposal of their Firm Fuel Supply Service (FFSS) product allowing certain natural gas generation facilities to qualify as an FFSS Resource and thereby be compensated for meeting a higher resiliency standard. The TPA has submitted comments on this proposal and continues to engage with regulators, but notes that this is yet another example of ongoing discussions at the state level geared toward enhancing electric reliability during extreme cold weather events.

In light of all that has been discussed above, it is important to give the reforms we have put into place time to work. It has only been two years, but we are already seeing the benefit, as discussed in recent NAESB GEH forum calls comparing Texas performance during Elliott to other parts of the country. Several industry experts, including the ERCOT Independent Market Monitor, have cautioned against making additional reforms until we know how the recently enacted reforms are going to perform.

**CONCLUSION**

At the end of the day, the Texas competitive generators have an electric rate design problem that makes it difficult for them to recover the cost of firm service in certain instances. This is a problem that cannot be solved by upending the entire intrastate gas industry and attempting to shoehorn federal regulatory mechanisms into a competitive market and to do so simply to appease a relatively small percentage of the market participants is irresponsible and illogical.

**NYISO NAESB Gas Electric Harmonization Forum Survey Comments**

While the NYISO’s Day-Ahead Market scheduling process works efficiently with natural gas nomination opportunities, enhancements to the natural gas scheduling process could provide electric generators with increased flexibility that will be necessary to support electric system reliability under the changing generation and load conditions discussed throughout this report.

Additional nomination opportunities over weekends and holidays would more efficiently support electric generation.[[34]](#footnote-34) Generators would be able to procure gas that aligns closer to their electric generation needs, which could vary dramatically over a two- or three-day weekend, or the five-day period around the Thanksgiving holiday.  Forecasting electric generation and corresponding natural gas needs several days in advance increases uncertainty today and will prove more difficult in the future with higher penetration of intermittent generation.

The NYISO is planning for the eventual deactivation of natural gas-fired electric generators in response to public policy in New York State.  However, natural gas-fueled generators will be required to maintain electric system reliability until sufficient new resources with similar operating attributes are developed and connected to the electric system.  Flexible natural gas nominations will be critical to balance the intermittency of wind and solar resources until new flexible clean technologies are developed and deployed consistent with New York State’s CLCPA mandates.

The NYISO encourages consideration of the following potential improvements:

1. Aligning natural gas nomination scheduling requirements more closely with actual deliveries (i.e., permit hourly gas nominations).
2. Shortening the time commitments associated with natural gas deliveries (i.e., hourly gas nominations), particularly when actual temperatures deviate from forecasts.
3. Development of non-traditional gas market products and a secondary market for the resale of unused gas that are responsive to changing electric market system needs (e.g., the ability to start or ramp-up natural gas fired generation to address wind lulls, or the ramp-down of solar production on summer afternoons).
4. Hardening/winterization of natural gas infrastructure and designation/identification of critical interdependent facilities (natural gas and other fuel supply infrastructure, communication infrastructure, etc.).

With the increasing number of intermittent electricity resources being installed and increasing variability in electric load, natural gas-fired power plants will be called on to utilize their fast start and quick ramping capability to respond and serve as a backstop to maintain the reliability of the power grid.  As a result, pipelines will be asked to deliver large volumes of natural gas on short notice, a major shift from the traditional model of supplying natural gas to industrial and local distribution markets.  The potential improvements proposed here by the NYISO would increase market opportunities for natural gas producers and pipelines and increase flexibility for electric generators.

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

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

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

**Submitted By:** Independent Electricity System Operator (IESO), New England ISO (ISONE), New York Independent System Operator, Inc. (NYISO), PJM Interconnection, L.L.C. (PJM) and Southwest Power Pool, Inc. (SPP)

**Date:** 03/03/2023

# The indicated RTOs/ISOs appreciate the opportunities provided for us to raise issues, make presentations and comment on the various gas/electric issues. The recent events of Winter Storms Uri and Elliott have underscored an issue that has challenged this industry for many years—-namely, improvement to gas/electric coordination.

Natural Gas Backdrop

* The interstate natural gas transmission network was designed and has operated on the premise that the primary customers would be large industrial facilities and local gas distribution companies which primarily serve residential, commercial and some industrial customers.
* Over the last 30 years, that customer mix has been radically altered by the adoption of natural gas generation across a large swath of the contiguous U.S.   This has been driven by the proliferation of renewable generation resources and retirement of coal fired generation in favor of the cleaner, cheaper, more, flexible, and more efficient characteristics of natural gas generation.  Additionally, the discovery of vast natural gas shale basins combined with improved hydraulic fracturing methods have led to the proliferation of increased gas supply further promoting the growth of electric generation by natural gas.
* As this expansive growth in natural gas generation has occurred, the interstate pipeline (and gas Local Distribution Company (LDC)) have had to accommodate this additional load through various transmission and storage expansion projects.
* Additionally, some states have implemented or are contemplating greater restrictions on the use of natural gas for all sectors.  These actions are not conducive to signaling the additional or continued investment in natural gas infrastructure, such as storage and winterization of facilities that will continue to be utilized in parts of the country.
* With continued retirement of coal generation expected over the next 5 to 10 years, the most reasonable expectation is that natural gas generation will play an important role to support reliability as the industry moves towards more variable renewable generation.

Fundamentally, the two industries have grown up under separate regulatory paradigms. The main customer of the pipeline services and gas commodity were state regulated local distribution companies (LDCs) responsible primarily for meeting heating load in the wintertime. By contrast, the generation sector’s dependence on natural gas as a fuel has evolved. Natural gas generation continues to become a more prevalent resource type as a result of the factors above.

The indicated RTOs believe that there needs to be an effort to examine targeted reforms that recognize that the gas industry now has both generation and LDC customers, both of whom need gas to serve the needs of consumers.

Recommended Focus of NAESB Efforts

There are a host of issues that this NAESB forum could pursue as evidenced through this survey. Through this submittal, the indicated RTOs/ISOs propose six areas to highlight impactful overarching concepts further evaluation as the group moves to develop the final report. This submittal is designed to supplement the very detailed list of questions from NAESB. We seek to ensure that the comprehensive survey does not miss the inter-related nature of certain of these initiatives within the specific ranking of different initiatives.

At a high level, we believe there are at least six key initiatives on which the NAESB Forum should prioritize. They are:

1. Exploring Lessons Learned from Efforts to Maximize Efficiencies of the Electric Grid and its relevance to today’s operation of the interstate pipeline network---The increasing co-dependencies of the electric and natural gas systems compel exploration of potential alternative paradigms to maximize the efficiencies of both systems. This is not to say that the pipeline system is being operated ‘inefficiently’ today. However, neither the existing operation of the natural gas pipeline system nor the electric grid should be considered sacrosanct for purposes of this NAESB review of options.

The pipeline system today is being operated based on a system of contractual rights through the procurement of firm service. The electric grid faced this same issue back in the 1990’s as rights to use the grid were originally established through contract paths---a series of contractual rights that became untethered to how the product actually flowed and how to maximize efficiencies in the operation of the existing system.. And like the pipeline system today, expansion of the grid was extremely difficult. For example, under the contractual path system dispatchers had to honor contractual paths even if they created bottlenecks in the form of congestion on the grid.—bottlenecks which could not easily be remedied through physical expansion. However, through the development of physical paths and/or financial rights models, the existing grid infrastructure is being utilized far more efficiently than under the old static contractual path model.

The indicated RTOs recognize that there are significant differences between the dispatch of gas molecules vs. electrons in terms of speed as well as the degree of interconnection among pipelines. Nevertheless, it would be helpful for NAESB to explore ‘lessons learned’ from the maximization of efficient operation of the transmission grid and its potential relevance to maximizing efficiencies of existing pipeline infrastructure. [[35]](#footnote-35)

Some educational sessions in this ‘big picture’ area could be useful in exploring how we can maximize efficiencies of both transportation systems while still assuring capital recovery for the pipeline. This analysis could also form a foundation for analyzing a number of the very good recommendations listed in the survey instrument.

2. Encouraging the Offering of More Flexible Pipeline Products—-As noted above generation resources operate under short term day ahead and real time commitments and face the daily risk of not clearing in the daily competitive markets. This feature of electric markets has led to more efficient results with savings to customers in each RTO estimated in the range of $3 to $4 Billion annually. Yet today’s paradigm too often creates a Hobson’s choice for generation to either choose a 365 day a year firm transportation or move to interruptible service. The indicated RTOs fully recognize that there is a finite amount of transportation capacity and that pipelines need to recover their capital and operating costs through the rates they charge their customers. However, as a matter of rate design (as opposed to revenue requirement recovery), the indicated RTOs believe that this forum should explore additional products which could be devised that could enhance options beyond today’s 365-day firm product vs interruptible paradigm. This could include expansion of no notice products, premium levels of firm service and other related products, all of which could admittedly come with a very expensive price tag.

Much of this flexibility is already accommodated by pipelines serving their customers on a daily basis. However, it is at times of system stress that the availability of a menu of tariffed premium products is most valuable. This issue should be further explored within the NAESB forum.

1. Enhanced Transparency of gas commodity markets, market capacity release, and force majeure causes—-As has been discussed in this forum, the indicated RTOs believe that there should be a focus on enhancing transparency of these particular markets so as to enhance price discovery and ensure that customer costs remain reasonable. The market today is dominated by bilateral arrangements often arranged by asset managers. That system is acceptable but inherently inefficient as accurate price discovery and the optimization of existing tight capacity becomes much more difficult without sufficient transparency.

Force majeure declarations within the gas production regions due to well freeze offs continue to create gas market disruptions during significant cold weather events. As raised during the discussions, the details associated with the claims often lack adequate detail. This results in additional challenges for evaluating fuel supply and expected performance during these critical weather events.

4. Enhanced Liquidity of the Markets during Weekend and Holiday Periods—-Winter Storm Elliott underscored the lack of liquidity in gas commodity markets particularly on weekends and over holidays. Generation is committed on a real time and day ahead basis and dispatched accordingly. Yet the gas markets have proven to be quite illiquid on weekends requiring generators to line up gas supplies on Friday for an entire weekend before they know if they actually have a commitment to run each day during the weekend. This can result in stranded gas costs that customers have to bear or, on the other hand, generators being forced to procure gas to meet their must offer obligations while facing the prospect of not recovering same. Individual adjustments to compensation in each RTO should primarily be addressed in each RTO market as the particulars are unique to each such market making a NAESB-wide initiative on this point not fruitful. However, on the national scale that is the focus of this NAESB effort, more work is needed to enhance the liquidity of the natural gas markets particularly during weekend and holiday periods. The survey lists a number of notable suggestions in this area that should be pursued further in this forum.

5. Further Exploration of Alignment of the Gas and Electric Day---Much NAESB work has gone into exploration of this issue in the past. However, inherent inefficiencies in the alignment of the two days remains. This could be a fruitful area for further exploration.

6. Promoting Timely Information and Communication as to Wellhead Issues that Can Impact the Flow of Gas to End Use Customers---During both Winter Storms Elliott and Uri, there were dramatic and sudden reductions in gas commodity being injected into the system which in turn caused pipeline imbalances and generators losing their gas supplies. Although there has been much focus on information sharing and winterization of pipeline facilities, the two winter storms highlight the need for a similar focus on upstream capabilities during periods of cold weather or other system stresses. The indicated RTOs would encourage more participation by the natural gas supply community to help develop recommendations in this important area.

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There are not simple answers to these questions, as they require paradigm shifts and reforms in both electric and gas markets. For an effective package of reforms to be considered, no single industry’s existing model should be considered sacrosanct. Rather, NAESB solutions should attempt to flush out a list of reforms that can meet the needs of the public given its increasing dependency on this critical fuel both for consumers’ electric and heating needs. The indicated RTOs pledge to serve as a supportive resource as this process continues.

March 3, 2023

North American Energy Standards Board:

The American Public Gas Association (APGA) respectfully submits these comments in response to the North American Energy Standards Board’s (NAESB) Gas Electric Harmonization (GEH) Forum’s survey ahead of the March 3, 2023, meeting.

**Introduction**

APGA is the trade association representing more than 730 communities across the U.S. that own and operate their retail natural gas distribution entities. These include not-for-profit gas distribution systems owned by municipalities and other local government entities, all accountable to the citizens they serve. Public gas systems provide safe, reliable, and affordable energy to their customers and support their communities by delivering fuel to be used for cooking, clothes drying, and space and water heating, as well as for various commercial and industrial applications, including electricity generation.[[36]](#footnote-36)

NAESB serves as an industry forum for the development and promotion of standards which intend to lead to a seamless marketplace for wholesale and retail natural gas and electricity. Specifically, NAESB proposes and adopts voluntary standards and model business practices designed to promote more competitive and efficient natural gas and electric service. APGA has been exceedingly engaged in NAESB GEH efforts and offers the below comments in coordination with its survey responses for the committee’s consideration.

**Comments**

Reliability and affordability are critical to public gas utilities, as well as the natural gas and power sectors more broadly. Accordingly, APGA members have invested significant resources into infrastructure, as well as fuel procurement, and are committed to working with stakeholders to further these efforts. As policies make the electric grid more reliant on intermittent resources, natural gas will have an important role to play as a generation balancing fuel at times when the sun is not shining and the wind is not blowing. At the same time, natural gas will continue to play an effective and critical role through direct use, as the production and delivery of natural gas into homes and buildings is three times more efficient than grid-delivered electricity.[[37]](#footnote-37) Due to the developing role of natural gas as a quickly dispatchable fuel to meet electric generation needs while still meeting traditional direct use needs, a central disconnect currently exists between the gas and power markets - something the GEH Forum is working to address by collecting feedback through this survey.

Because APGA represents not-for-profit natural gas utilities that are owned and operated by their communities, we approached the survey from the perspective of our members. Accordingly, our priority ranking is based on actions we believe should be given precedence to increase the reliability of the natural gas infrastructure system overall, not just in support of the Bulk Electric System (BES). While the BES is an important component of our country’s energy delivery system, APGA believes that it is short-sighted to prioritize actions based solely on their potential to improve only the BES. Instead, APGA encourages NAESB to take a holistic approach to its prioritization, so that the highest priority recommendations are the most likely to increase the natural gas infrastructure system for all end users, including but not limited to public gas utilities, investor-owned utilities natural gas utilities, industrial customers, and the BES.

***1. Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies***

*a. Whether and how natural gas information could be aggregated on a regional basis for sharing with Bulk Electric System operators in preparation for and during events in which demand is expected to rise sharply for both electricity and natural gas, including whether creation of a voluntary natural gas coordinator would be feasible*

While the question focuses on what and how natural gas information could be shared with BES operators in preparation and during expected high demand events, APGA is concerned that such an approach is short-sighted. Instead, NAESB should be viewing these recommendations through the lens that all market participants, including public gas utilities, would have access to the information sharing. Consistent access to information by all will help ensure efficiencies in the energy delivery system, both electric and gas.

While APGA did not assign priority to any of the recommendations, we believe that NAESB and others who may implement the recommendations should keep the costs and challenges associated with the proposed data sharing front of mind.

*b. Expanding/revising natural gas demand response/interruptible customer programs to better coordinate the increasing frequency of coinciding electric and natural gas peak load demands and better inform natural gas consumers about real-time pricing*

While APGA is generally supportive of many of the proposed recommendations, we believe that some of them, especially those surrounding capacity release markets (Recommendations 3-8), will not be impactful, as capacity releases rarely occur during high demand events that the GEH Forum is working to address. Instead, additional natural gas infrastructure should be developed to ensure sufficient capacity can be delivered during these peak periods.

APGA is also supportive of enhanced intraday transaction reporting requirements to increase transparency regarding wholesale gas price formation on the secondary market (Recommendation 9), as we believe that this increased transparency will help keep costs low for consumers.

However, APGA is opposed to modifying the procurement practices for LDCs (Recommendation 10). APGA members spend significant time and resources to determine the needs of their systems . Hindering their efforts to serve their communities, as is their stated obligation, to presumably better the BES is not a viable path forward to solving GEH issues, but would instead simply shift the burden from the BES to LDCs.

*c. Electric and natural gas industry interdependencies (communications, contracts, constraints, scheduling)*

A significant challenge facing our country is lack of sufficient natural gas infrastructure. This deficiency has led to gas supply challenges during severe weather events like Winter Storms Uri and Elliott, as well as high and/or volatile natural gas prices in varying regions across the country. In turn, these increased prices lead to higher electricity prices and higher costs of food and other consumer products. This insufficient development of infrastructure has cost consumers greatly and has put our country’s energy security at risk.

The energy industry has done a great job of finding workable efficiencies in the existing system, and APGA is supportive of reviewing the overarching industry’s planning and forecasting processes (Recommendations 30-36), but we appear to be at the existing infrastructure’s limit. Instead, we are faced with a much larger, underlying issue, which is that the market is demanding more natural gas than can currently be delivered with the existing natural gas pipeline network. Accordingly, the NAESB GEH Forum should support efforts to develop additional infrastructure through a modernized and streamlined permitting process, ensuring along the way that costs of developing such infrastructure are fairly allocated.

As previous iterations of NAESB’s GEH efforts have concluded, changes to gas market scheduling are not appropriate solutions to the issues facing the energy industry. However, APGA is not opposed to the development of new pipeline services (Recommendations 12-13), so long as it does not impact our members existing natural gas supply contracts. APGA is also supportive of methods to encourage market liquidity (Recommendation 14). However, APGA questions the effectiveness of such methods, or even the creation of a 24/7 natural gas market for critical weather event (Recommendation 15), as it is clear there is not sufficient supply capacity in cases where significant intermittent generation sources fall off-line or when supply is impacted by adverse weather events. Accordingly, the costs to implement such recommendations are likely not warranted at this time.

Finally, as discussed above, APGA is generally supportive of additional information sharing (Recommendations 16-26, 28-29), so long as it is available to all market participants and costs are allocated appropriately. While supportive of the concept, APGA believes that any retail gas utility servicing a natural gas-fired generator will already be having regular communications with each other (Recommendation 22). In fact, several APGA members are combo utilities that also own and operate their own electric distribution utility that receives energy from behind the city gate natural gas-fired generation. These systems have been handling tricky supply issues with this unique situation for years and can be a valuable resource in planning discussions.

***2. Measures to improve reliability of natural gas facilities during cold weather (freeze protection, electric supply)***

*a. Additional state actions (including possibly establishing an organization to set standards, as NERC does for Bulk Electric System entities) to enhance the reliability of intrastate natural gas pipelines and other intrastate natural gas facilities*

As discussed above, APGA is generally supportive of additional information sharing and added transparency (Recommendations 1-2, 4), so long as it is available to all market participants. APGA is also generally supportive of measures to increase resiliency (Recommendations 7-8), so long as such costs are appropriately allocated.

APGA is opposed to any requirements for LDCs to develop methodologies to reforecast demand, specify reserve margin calculations, and release excess capacity and/or natural gas during extreme weather events (Recommendation 6). As discussed above, significant time and resources go into LDC, including public gas utilities, supply purchasing methodologies to ensure each system can meet its obligation to serve its customers on the highest demand days. Public gas systems already have in place mechanisms to release excess capacity when appropriate; however, such releases almost never occur during extreme weather events because of the high demand from customers.

APGA would also like to reiterate the fact that almost all of its members are owned, operated, and governed by the communities that they serve. This means each locality sets rates and policies for its natural gas distribution system, not the state public utility commission. In this way, communities are able to set policies for their utility that best meet the needs and resources of the community. Accordingly, requiring the 1,000 public gas systems across the country to change their procurement practices (Recommendation 9) is not a viable solution to the issues with which the GEH Forum has been tasked to addressed.

*b. Programs to encourage and provide compensation opportunities for natural gas infrastructure facility winterization*

APGA is concerned that the costs of the proposed recommendations (Recommendations 1-2) would be so high that they may actually discourage natural gas supply and transportation in certain parts of the country, which would be contrary to the Forum’s goals of ensuring sufficient supplies. Furthermore, APGA is also extremely cautious about making potential language changes to the NASEB Base Contract’s force majeure clause and would need additional details before taking a position on whether such change would be an effective tool to improve the reliability and resiliency of the natural gas delivery system.

*c. Methods to streamline the process for, and eliminate barriers to, identifying, protecting, and prioritizing critical natural gas infrastructure load [See also Recommendation 28 – Guidelines to identify critical natural gas facility loads]*

APGA is extremely supportive of information sharing efforts that will help identify critical natural gas facilities that are powered by electricity to ensure that they are protected from load shed (Recommendation 1). This will help to alleviate some of the issues experienced during 2021’s Winter Storm Uri and help prevent the energy industry from “shooting itself in the foot” by further perpetuating energy shortages during extreme weather events. APGA is also supportive of increased collaboration between pipelines and RTOs to shift generation to areas where gas is available (Recommendation 3), so long as it does not impact those who contract for firm capacity, such as public gas utilities.

Additionally, APGA supports the adoption of emergency preparedness plans (Recommendation 4). In concept, APGA supports Jones Act waivers as a part of these plans. However, such a plan would be short-sighted, as the waiver of the Jones Act is an indication that insufficient infrastructure exists to deliver gas safely and reliably to the places that need it most. Instead, NAESB and others should focus on addressing the larger issue: our country’s need for additional natural gas infrastructure, including but not limited to new pipelines, capacity expansions on existing pipelines, storage, and peak shaving. Similarly, any repeated need to waive air emissions limits and renewable portfolio standards (RPS) requirements suggest flaws in the underlying permits and policies. With regards to such emergency plans, APGA is opposed to the waiver of pipeline quality specifications unless it can be demonstrated that such a waiver would not impact the safe delivery and use of natural gas from transportation through to the end customer.

APGA is not supportive of establishing natural gas curtailment plans as part of tariffs or state commission orders that define natural gas curtailment orders (Recommendation 3). There are over 1,000 publicly owned natural gas utility systems throughout the country. Almost all set the rates at the local level. Any overarching curtailment or prioritization plan is inappropriate and impractical to implement. Furthermore, APGA members purchase natural gas at a premium under firm contracts to ensure delivery on the highest demand days. Any action that may interfere with these contracts, which require significant planning and resources to execute appropriately, is not a viable solution to the issues the GEH Forum has been addressing.

***3. Measures to improve the ability of generators to obtain fuel during extreme cold weather events when natural gas heating load and natural gas-fired generators are both in high demand for natural gas, at the same time that natural gas production may have decreased***

*a. Which entity has authority to require certain natural gas-fired generating units to obtain either firm supply and/or transportation or dual fuel capability, under what circumstances such requirements would be cost-effective, and how such requirements could be structured, including associated compensation mechanisms, whether additional infrastructure buildout would be needed, and the consumer cost impacts of such a buildout*

APGA is generally not opposed to most of the suggested recommendations but defers to participants directly involved in the BES to determine which options are most likely to encourage generators to acquire sufficient fuel supply for severe weather events.

For any infrastructure development intended to solely benefit the BES, those costs should be borne by the customers of the BES and not spread across all pipeline shippers, as traditional customers, including the communities that are served by public gas utilities, have already borne the majority of costs for the development of the existing natural gas infrastructure system. Similarly, any cost spreading mechanisms developed for electric generation fuel procurement costs should be applicable only to electric customers. APGA cannot support Recommendation 13 in this category, as it is not clear who would be bearing the costs of such reserve capacity and third-party storage options, nor would such solutions necessarily be an appropriate fix in the case where supply itself is limited.

APGA is especially supportive of the recommendation to streamline the certificate review and permitting process for new natural gas infrastructure (Recommendation 11). Additionally, APGA supports the consideration of the need for natural gas as a balancing resource when it comes to FERC public interest determinations for new gas infrastructure (Recommendation 8). It is important to note that generators and other participants in the BES will need to raise this need in the appropriate FERC proceedings.

*b. [Recommendation 24] Possible options for increased regasification of liquid natural gas (including possible Jones Act Waivers)*

As discussed above, in concept, APGA supports the development of new cost recovery mechanisms and emergency response programs that support the utilization of LNG, including short-term or temporary waivers to the Jones Act. However, any Jones Act waiver is an indication that insufficient infrastructure exists to deliver gas safely and reliably to the places that need it most. Such a solution is only short-term and does not address the larger issue at hand (i.e., our country’s need for additional natural gas infrastructure, whether pipelines, storage, peak shaving, etc.). The same goes for the need to repeatedly waive air emissions caps and RPS mandates – if these need to be continuously waived, then the underlying permits and policies need to be reevaluated.

*c. Which entity has authority, and under what circumstances, to take emergency actions to give critical electric generating units pipeline transportation priority second only to residential heating load, during cold weather events in which natural gas supply and transportation is limited but demand is high*

APGA continues to be concerned that Question 3.c and the proposed recommendations arising from it run counter to both public gas utilities’ obligation to serve their customers and the underlying contracts that facilitate such services. As LDCs, APGA members are responsible for maintaining safe and reliable service to the customers in their communities, which include residential, commercial, and industrial end-users. To ensure availability of fuel for delivery, public gas utilities and other LDCs have developed robust fuel procurement procedures to ensure long-term supply can be met for their customers. Such planning takes into account anticipated peak loads based on weather and a number of other conditions. Significant deviation is likely to result in costs that will ultimately be borne by the end-use consumers.

Any type of pipeline prioritization should remain squarely in FERC’s jurisdiction, through its approved tariffs and non-discrimination policy. Furthermore, APGA is not aware of any overarching entity that has authority to abrogate contractual agreements. In fact, granting such authority could undermine goals of ensuring electric generation plants are sufficiently incentivized to proactively procure adequate quantities of fuel in preparation for emergency situations. To ensure necessary supply for their customers, APGA members purchase gas under firm contracts, which are intended to guarantee delivery in all but the most extreme instances and are priced accordingly. Redirecting contractually obtained natural gas supply and capacity away from public gas utilities will place a significant burden on their communities that rely on the fuel for a number of end uses and should be strongly avoided. Furthermore, the requirements proposed in the recommendations would be impractical to apply to public gas systems in general, as only a very small minority of the 1,000 systems across the country are regulated by state public service commissions.

Instead of redirecting natural gas away from public gas utilities and other LDCs that have expended significant resources to meet their customers’ needs, APGA encourages the GEH Forum to look towards other recommendations that APGA and others have supported, such as incentivizing market participants to ensure that necessary amounts of fuel can be procured ahead of emergency situations and developing sufficient natural gas infrastructure.

*d. Whether resource accreditation requirements for certain natural gas-fired generating units should factor in the firmness of a generating unit’s gas commodity and transportation arrangements and the potential for correlated outages for units served by the same pipeline(s)*

APGA is not opposed to the suggested recommendations but defers to participants directly involved in the BES to determine which options are most likely to encourage generators to acquire sufficient fuel supply for severe weather events.

*e. Whether there are barriers to the use of dual-fuel capability that could be addressed by changes in state or federal rules or regulations. Dual-fuel capability can help mitigate the risk of loss of natural gas fuel supply, and issues to consider include facilitating testing to run on the alternate fuel, ensuring an adequate supply of the alternate fuel and obtaining the necessary air permits and air permit waivers. The forum could also consider the use of other resources which could mitigate the risk of loss of natural gas fuel supply*

APGA supports the suggested recommendations but defers to participants directly involved in the BES to determine which options are most likely to encourage generators to acquire sufficient fuel supply for severe weather events.

*f. Increasing the amount or use of market-area and behind-the-city-gate natural gas storage*

While APGA is supportive of most of the recommendations (Recommendations 1-3, 5), we are concerned about cost allocation. It is important that those requiring and benefiting from any additional infrastructure be the entities that carry the costs of such development. For this reason, we continue to be concerned about allowing pipelines to build in reserve capacity (Recommendation 4), as it is unclear who would bear such costs.

*h. Whether or how to increase the number of “peak-shaver” natural gas-fired generating units that have on-site liquid natural gas storage*

APGA supports market reforms that encourage the development of infrastructure that will allow electric generators to have access to sufficient fuel supplies during high demand events, so long as the costs for development of such infrastructure is appropriately allocated to the generators and their ultimate rate payers. However, APGA does not see any benefits with distinguishing LNG from other natural gas market tools at this time.

*4. Recommendation 24*

*2.b.i. [Recommendation 24] Three topic areas addressed if federal and state entities with jurisdiction*

*3.a.i. over natural gas infrastructure should cooperate to further study and enact measures to address*

*3.g natural gas supply* *study and enact measures to address natural gas supply shortfalls during extreme cold weather events including: (2.b.i) possible financial incentives for the natural gas infrastructure system necessary to support the BES to winterize or otherwise prepare to perform during extreme cold weather events; (3.a.i) market/public funding for generators to have firm transportation and supply and invest in storage contracts. Such funding may need to finance infrastructure necessary to provide additional firm transportation capacity, because many existing pipelines were financed and constructed to serve LDCs and may not have sufficient additional firm capacity; and (3.g) possible investments in strategic natural gas storage facilities, which could be located to serve the majority of pipelines supplying natural gas-fired generating units, and preserved for use during extreme cold weather events.*

APGA supports all the recommendations in this section. Each technical conference and study will provide valuable insight into the issues the energy industry is facing and how best to address them. Having overarching entities, such as federal agencies and national organizations, jointly conduct the analyses, with opportunity for feedback from impacted stakeholders, will help ensure the most comprehensive evaluation of these issues.

\* \* \*

Thank you for your review and consideration of these comments and our survey responses. APGA and its members look forward to further engaging with NAESB and the GEH Forum. If you have any questions regarding this submission, please do not hesitate to contact me.

Respectfully submitted,



David Schryver

President & CEO

American Public Gas Association



**March 22, 2023**

**Gas-Electric Harmonization Forum**

NAESB

1415 Louisiana, Suite 3460

Houston, Texas 77002

**The New York State Reliability Council (NYSRC)**

The mission of the NYSRC is to assist in the maintenance and enhancement

of reliability of New York State’s electric system. Since its formation in 1999, when it was approved by the Federal Energy Regulatory Commission (FERC) as part of the comprehensive restructuring of the electricity market in New York State, the NYSRC has carried out its mission in accordance with FERC-approved NYSRC and New York Independent System Operator (NYISO) Agreements.

**To the Forum,**

The New York State Reliability Council (NYSRC) has followed with interest the proceedings of the NAESB Gas-Electric Harmonization Forum. We commend the NAESB, its staff, and the Forum chairs for their work to date. We have found the survey, which was distributed on February 8, 2023, to be particularly helpful in getting a sense of the concerns of the participants.

We welcome the opportunity to respond to the survey. We appreciate your allowing us to forward these late filed comments, and we thank you for recognizing that it was necessary to do so because the NYSRC Executive Committee’s scheduled monthly meeting came after the due date of the survey. We will restrict our comments to the following survey item:

**Section II – Prioritization of Recommendations & Comment Opportunity**

l. Measures to improve gas-electric information sharing for improved system performance during extreme cold weather emergencies.

**Recommendation 5 (page 5 of 27) -** Consider using third parties (for example, the Texas Energy Reliability Council) to bring together important critical sectors during extreme events in order to facilitate collaboration and coordination at a regional level, better informing decision making between critical sector participants.

**The Issue**

The extent to which the NYSRC can or should be involved in bringing together important critical sectors during extreme events in order to facilitate collaboration and coordination at a regional level, better informing decision making between critical sector participants.

**Discussion**

The NYSRC has a specific role to play in the exercise of its authority over the NYISO. It has no direct authority over New York’s gas industry. It does not set energy policy for either the gas or electric industries. It is not involved in secondary capacity release markets, gas market scheduling, electric and gas marketing design, cost recovery, fuel purchasing, or prioritization of service. It is not a broker between the gas and electric industries.

**The authority and responsibilities of the NYSRC are specifically to:**

Establish NYSRC Reliability Rules consistent with North American Reliability Council (NERC) and Northeast Power Coordinating Council (NPCC) standards. The NYSRC Reliability Rules are consistent with, and sometimes more stringent or specific than, NERC and NPCC standards. The NYSRC Reliability Rules are binding on the NYISO and all participants in the NYISO’s wholesale electricity market.

**Responsibilities**

• Monitor and assess NYISO conformance with NYSRC Reliability Rules

• Establish statewide installed capacity requirements.

• Assess New York State electric system resource and transmission system adequacy.

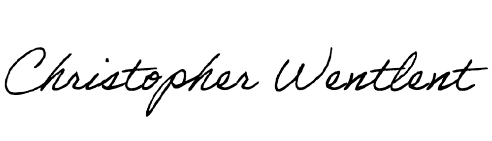
**Findings**

In view of the specific responsibilities of the NYSRC in its relationship to the NYISO, and due its lack of any direct authority over New York’s gas industry, the NYSRC finds that:

• It is not within its charter to bring together important critical sectors during extreme events in order to facilitate collaboration and coordination at a regional or state level, as identified in Recommendation 5 of the NAESB Gas-Electric Harmonization Forum;

• As with any policy decision issued by an authorized agency, findings of the NAESB Gas-Electric Harmonization Forum which affect the NYISO, and its market participants will be reviewed and addressed by the NYSRC pursuant to its rulemaking practices, and;

• We have reviewed the responses submitted by the NYISO and have found none that appear contrary to their existing operating practices. Accordingly, we support their position.



Sincerely yours,

Chairman, NYSRC Executive Committee

1. INGAA represents the majority of interstate natural gas transmission pipeline companies in the United States. Its 26 members operate approximately 200,000 miles of interstate natural gas pipelines, serving as an indispensable link between natural gas producers and consumers. INGAA advocates on behalf of its members before federal agencies and courts.

   INGAA does not represent the interests of intrastate pipelines and takes no position on the recommendations as applied to intrastate pipelines. [↑](#footnote-ref-1)
2. Letter from Mr. Richard Glick, Chairman, FERC, and Mr. Jim Robb, President and CEO, NERC, to Mr. Michael Desselle, Chairman, NAESB, and Mr. Jonathan Booe, Executive Vice President & Chief Operating Officer, NAESB (July 25, 2022). [↑](#footnote-ref-2)
3. FERC, NERC, *February 2021 Cold Weather Grid Operations: Preliminary Findings and Recommendations* at 15 (Sept. 23, 2021). [↑](#footnote-ref-3)
4. *Id.* [↑](#footnote-ref-4)
5. *See, e.g.*, Comments of the Interstate Natural Gas Association of America at 8-9, *New England Winter Gas-Electric Forum*, Docket No. AD22-9-000 (Nov. 7, 2022). [↑](#footnote-ref-5)
6. *See, e.g.*, Recommendations 1.a.1, 2, 7, 8, 9; 1.b.6, 8, 9; 1.c.20, 28, 29. [↑](#footnote-ref-6)
7. *See, e.g.*, 1.c.1, 2, 11, 16, 17, 25, 32; 2.a.7; 2.b.1, 2. [↑](#footnote-ref-7)
8. NAESB recently voted to take no action on a similar proposal regarding critical notices, and this vote further weighs against pursuing these recommendations in this Forum. [↑](#footnote-ref-8)
9. Order No. 1000, *Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*, 136 FERC ¶ 61,051, P 535 (2011); *see also Ameren Servs. Co. v. FERC*, 893 F.3d 786, 789 (D.C. Cir. 2018) (“Order 1000 calls for neighboring ISOs and RTOs to reach agreements on cost allocation for interregional projects that avoid free rider problems . . . The guiding principle behind Order 1000’s cost-allocation provisions is that the costs of interregional projects should be allocated in a way that is roughly commensurate with benefits.”); *Connecticut Dep’t of Pub. Util. Control v. FERC*, 569 F.3d 477, 479 (D.C. Cir. 2009) (“Indeed, cooperation may be necessary to avoid a free rider problem, where some utilities count on the capacity they expect others to buy in order to support their own reliability.”). [↑](#footnote-ref-9)
10. Order No. 1000 at P 536. [↑](#footnote-ref-10)
11. *See*, *e.g.*, Recommendations 1.a.9; 1.c.3, 13, 17, 21; 2.c.2, 4; 3.a.15; 3.c.1-3. [↑](#footnote-ref-11)
12. INGAA described several authorities precluding reallocation of natural gas pipeline capacity based on end use in Response to Question 5 of the Survey issued in connection with the Forum’s November 8, 2022, meeting. INGAA incorporates this response by reference. [↑](#footnote-ref-12)
13. Voluntary releases of capacity from firm shippers to natural gas-fired generators in exchange for consideration do not raise the same concerns. [↑](#footnote-ref-13)
14. *See* Response to Question 1 of the Survey issued in connection with the Forum’s October 21 meeting. [↑](#footnote-ref-14)
15. *See, e.g.*¸ Recommendations 1.a.2, 7; 1.b.3-4; 1.c.13, 15. [↑](#footnote-ref-15)
16. *See*, *e.g.*, Recommendations 1.a.4, 5, 10; 1.b.11; 1.c.6, 7, 19, 23, 27, 30, 31, 34, 36; 2.c.1; 3.a.1-5; 3.d.1-5; 3.e.1-4; 3.f.2-4. [↑](#footnote-ref-16)
17. Notably, AGA filed letters on September 14, 2022, November 4, 2022, and November 28, 2022. [↑](#footnote-ref-17)
18. All priority recommendations in these comments appear in order of priority (First, Second and Third, respectively). [↑](#footnote-ref-18)
19. “Southern Companies” refers to three retail electric operating companies (Alabama Power Company, Georgia Power Company, and Mississippi Power) and four natural gas distribution companies (Atlanta Gas Light, Chattanooga Gas, Nicor Gas, and Virginia Natural Gas). [↑](#footnote-ref-19)
20. 16 Tex. Admin. Code 7.455 [↑](#footnote-ref-20)
21. LDCs are understandably prohibited from offering firm service to other non-human needs customers, even if some of those customers may provide electricity to some human needs consumers as well as commercial, industrial, and other sorts of end users. [↑](#footnote-ref-21)
22. 49 FPC at 911-12, cited in *Arkansas Power & Light Co. v. Federal Power Commission*, 517 F.2d 1223, 1230 (1975). [↑](#footnote-ref-22)
23. <file:///C:/Users/jenni/AppData/Local/Microsoft/Windows/INetCache/Content.Outlook/2DJZGZCJ/Fuel_Assurance_and_Fuel-Related_Reliability_Risk_Analysis_for_the_Bulk_Power_System.pdf>. [↑](#footnote-ref-23)
24. <https://www.washingtonpost.com/nation/2021/03/06/texas-power-plants/> [↑](#footnote-ref-24)
25. There are slightly less than 10,000 negotiated rate tariffs currently on file at the Railroad Commission. [↑](#footnote-ref-25)
26. An example of these reforms already working is the use of the recently adopted supply chain map during the February 2022 winter season. On one particular occasion, the mapping committee, chaired by the PUC Executive Director and vice- chaired by the Executive Director of the Railroad Commission, used the data for the 65,000 plus mapped facilities to mitigate a potential gas-electric disruption within 10 minutes of being notified. The PUC and Railroad Commission worked together, ultimately preventing a loss of power to that facility. The committee held a meeting since that time where they discussed legislative recommendations that are aimed at improving communication and information sharing with regard to the map and the critical infrastructure on it. [↑](#footnote-ref-26)
27. With the exception of intrastate LDCs, who *do* operate under a rate and tariff structure. [↑](#footnote-ref-27)
28. “Matterhorn Express Pipeline Reaches Final Investment Decision.” *Business Wire*. May 19, 2022. <https://www.businesswire.com/news/home/20220519005711/en/Matterhorn-Express-Pipeline-Reaches-Final-Investment-Decision>. (*Last accessed October 27, 2022*). [↑](#footnote-ref-28)
29. Approximately 200. [↑](#footnote-ref-29)
30. An interstate customer’s flow information is used for imbalance management purposes and is for customer view only; it is not a public posting. Intrastate pipelines often provide similar access to customer flow information for the same purpose. [↑](#footnote-ref-30)
31. Texas Atty. Gen. has determined that the protection of pipelines customer information (names and delivery points) a trade secret and not subject to Texas Open Records Requests - *see* Open Records Decision Nos. 552 (1990) and 5059 (2009). [↑](#footnote-ref-31)
32. “Natural Gas Flaring Is Set to Rebound in Permian Basin,” Yahoo Finance, November 14, 2022. <https://finance.yahoo.com/news/natural-gas-flaring-set-rebound-150000373.html?guccounter=1> [↑](#footnote-ref-32)
33. Committee heard testimony from Carrie Bivens - the Independent Market Monitor (IMM) for ERCOT. Ms. Bivens testified that the *current* ERCOT market design sends the appropriate signals to ensure the necessary build out of generation as needed. She stated the adoption of a PCM model – one that rewards generators for being available to operate, regardless of whether they are ever called on to do so - will decrease efficiency of the energy market and will not add any benefit since the reliability standard is already being met. She went on to say that she believes what Texas is facing is an operational flexibility issue, not a resource adequacy issue. [↑](#footnote-ref-33)
34. *See Comments of the ISO/RTO Council*, Docket No. RM14-2-000(November 25, 2014). [↑](#footnote-ref-34)
35. Moreover, although some have raised the concept of a ‘gas RTO’, given the separation of commodity from transportation under FERC Order 636, pipelines themselves could well take on some of these enhanced management functions. [↑](#footnote-ref-35)
36. For more information, please visit [www.apga.org](http://www.apga.org). [↑](#footnote-ref-36)
37. <https://playbook.aga.org/reliable/> [↑](#footnote-ref-37)