



North American Energy Standards Board

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GAS ELECTRIC FORUM MARCH 3, 2023 MEETING SURVEY DUE FEBRUARY 27, 2023

Section I – Submitter Information

1. Please provide your contact information:

Company/Organization: **Electric Power Supply Association**
Representative: **Nancy Bagot**
Email Address: nbagot@epsa.org
Phone Number: **202-494-5529**

2. For the purposes of participating in the Gas Electric Forum, are you responding as (*please check one box only*):

- Wholesale Gas Market – Producer
- Wholesale Gas Market – Pipeline
- Wholesale Gas Market – Distributor
- Wholesale Gas Market – Services or Technology Company
- Wholesale Gas Market – End User
- Wholesale Electric Market – Transmission Company
- Wholesale Electric Market – Generator
- Wholesale Electric Market – Distributor/Load Serving Entity
- Wholesale Electric Market – End User
- Wholesale Electric Market – Independent Grid Operator & Planner
- Wholesale Electric Market – Marketer/Broker
- Wholesale Electric Market – Technology or Service Company
- Retail Energy Market – Retail Electric Service Provider/Supplier
- Retail Energy Market – End User/Public Agency
- Retail Energy Market – Retail Gas Market Company
- Retail Energy Market – Retail Electric Utility
- Other Market Participant / Observer



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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

I. Introduction & Summary

EPSA¹ 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

¹ *EPSA is the national trade association representing competitive power suppliers in the U.S. EPSA members provide reliable and competitively priced electricity from environmentally responsible facilities using a diverse mix of fuels and technologies. EPSA seeks to bring the benefits of competition to all power customers. These comments represent the position of EPSA as an organization but not necessarily the views of any particular member with respect to any issue.*



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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, EPSC 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, EPSC 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.



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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.

II. 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.



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III. 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.

IV. 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.



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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.

V. Additional Considerations for Recommendations and Priorities

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



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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.

VI. Survey Section 2 - Comments on Recommendations

Comments on many recommendations are included as endnotes to the attached survey form.



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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

- Q1 Do you support or oppose taking action in response to the **10** recommendations identified below?
- Q2 *Of the recommendations that you support*, please rank the recommendations in order of priority (**1–10**, as applicable with 1 as highest priority) that they should be given to increase the reliability of the natural gas infrastructure system in support of the Bulk Electric System.
- Q3 *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.

<i>Recommendations:</i>			<i>Take Action? (S/O)</i>	<i>Priority Given (1-10)</i>	<i>Comments Attached? (Y/N)</i>
	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.	O		a
	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.	O		
	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.	O		
	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.	O		



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<i>Recommendations:</i>			<i>Take Action? (S/O)</i>	<i>Priority Given (1-10)</i>	<i>Comments Attached? (Y/N)</i>
	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.	N/A		
	6	Consider developing a singular portal by which parties can access all critical notices issued by any natural gas pipeline.	N/A		
	7	Consider developing additional posting requirements, to be used during critical events, for natural gas facility operators regarding operational issues that are encountered.	N/A		
	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.	O		
	9	Consider the development of a computer model of the gas-electric system to simulate scenarios that will inform any operational decision making.	O		
	10	Consider a review of existing natural gas market products and services to assist natural gas-fired generators in fuel procurement.	N/A		



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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

- Q1 Do you support or oppose taking action in response to the **11** recommendations identified below?
- Q2 *Of the recommendations that you support*, please rank the recommendations in order of priority (**1 – 10**, as applicable with 1 as highest priority) that they should be given to increase the reliability of the natural gas infrastructure system in support of the Bulk Electric System.
- Q3 *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.

			<i>Take Action? (S/O)</i>	<i>Priority Given (1-10)</i>	<i>Comments Attached? (Y/N)</i>
	Recommendations:				
	1	Consider steps to facilitate the development of advanced exchange agreements between end users, including natural gas-fired generators.	O		b
	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.	O		
	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.	O		
	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.	N/A		
	5	Modifications or Expansion of Secondary/Capacity Release Markets - Consider creating standardized methods to post, transact, and facilitate secondary market capacity release.	N/A		



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			<i>Take Action? (S/O)</i>	<i>Priority Given (1-10)</i>	<i>Comments Attached? (Y/N)</i>
		Recommendations:			
	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	N/A		
	7	Modifications or Expansion of Secondary/Capacity Release Markets - Consider creating an intrastate-specific capacity release market.	N/A		
	8	Modifications or Expansion of Secondary/Capacity Release Markets - Consider providing real-time information regarding capacity release.	N/A		
	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.	N/A		
	10	Consider modifications to the procurement practices for LDCs that reduce the amount of required natural gas contingency reserves.	N/A		c
	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.	N/A		d



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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)

- Q1 Do you support or oppose taking action in response to the 36 recommendations identified below?
- Q2 *Of the recommendations that you support*, please rank the recommendations in order of priority (1 – 10, as applicable with 1 as highest priority) that they should be given to increase the reliability of the natural gas infrastructure system in support of the Bulk Electric System.
- Q3 *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.

<i>Recommendations:</i>			<i>Take Action? (S/O)</i>	<i>Priority Given (1-10)</i>	<i>Comments Attached? (Y/N)</i>
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.	S	1	e	
2	Gas Market Scheduling – Consider the exploration of hourly gas nominations.	S	2	f	
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.	O			
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.	S	5	g	
5	Gas Market Scheduling – Consider non-ratable flow options to provide increased flexibility in purchasing of natural gas, especially during weekends or holidays	S	4	h	
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.	S	3	i	



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<i>Recommendations:</i>			<i>Take Action? (S/O)</i>	<i>Priority Given (1-10)</i>	<i>Comments Attached? (Y/N)</i>
	7	Electric Market Design – Consider the use of multi-day clearing processes during and/or in advance of extreme weather events.	N/A		
	8	Electric Market Design - Consider if natural gas-fired generators should be required to purchase bundled packages of fuel transport and supply.	O		
	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.	N/A		
	10	Consider hourly reporting of price formation during the gas day.	N/A		
	11	Consider the development of FERC transactional reporting requirements for intraday transactions similar to timely cycle transactional reporting requirements.	N/A		
	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.	N/A		j
	13	New Pipeline Service Offerings – Consider the development of specific tariff services for natural gas pipeline capacity during critical weather events.	N/A		
	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.	N/A		
	15	Consider the creation of a 24/7 natural gas market for critical weather events.	N/A		
	16	Information Sharing – Consider if additional details should be provided by natural gas pipelines regarding actual gas flow.	S	6	k
	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.	N/A		



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<i>Recommendations:</i>			<i>Take Action? (S/O)</i>	<i>Priority Given (1-10)</i>	<i>Comments Attached? (Y/N)</i>
	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.	O		1
	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.	N/A		
	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.	N/A		
	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.	O		m
	22	Information Sharing – Consider if there should be information sharing requirements between retail gas utilities and any natural gas-fired generation those utilities serve.	N/A		
	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.	N/A		
	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.	O		
	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.	N/A		
	26	Information Sharing – Consider if there should be posting requirements for wellhead and mid-stream facility operators regarding any encountered operational issues.	N/A		



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		<i>Take Action? (S/O)</i>	<i>Priority Given (1-10)</i>	<i>Comments Attached? (Y/N)</i>	
<i>Recommendations:</i>					
	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.	O		n
	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.	S	7	o
	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.	N/A		p
	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.	O		q
	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.	N/A		r
	32	Planning/Forecasting – Consider increased transparency regarding natural gas planning processes, including long-term reliability and contingency planning.	N/A		
	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.	N/A		
	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.	N/A		s



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			<i>Take Action? (S/O)</i>	<i>Priority Given (1-10)</i>	<i>Comments Attached? (Y/N)</i>
		<i>Recommendations:</i>			
	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.	O		
	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.	N/A		t



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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

- Q1 Do you support or oppose taking action in response to the **2** recommendations identified below?
- Q2 *Of the recommendations that you support*, please rank the recommendations in order of priority (**1 – 9**, as applicable with 1 as highest priority) that they should be given to increase the reliability of the natural gas infrastructure system in support of the Bulk Electric System.
- Q3 *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.

			<i>Take Action? (S/O)</i>	<i>Priority Given (1-9)</i>	<i>Comments Attached? (Y/N)</i>
Recommendations:					
	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.	S		u
	2	Consider the development of or modification to capacity release markets for intrastate pipelines, including needed transparency requirements.	S		v
	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.	N/A		
	4	Consider greater visibility into the firm contracting practices and circumstances creating force majeure events in the intrastate markets.	S		w
	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.	S		x
	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.	S		y



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			<i>Take Action? (S/O)</i>	<i>Priority Given (1-9)</i>	<i>Comments Attached? (Y/N)</i>
<i>Recommendations:</i>					
	7	Consider resiliency requirements for gas infrastructure similar to those of other critical facilities.	S		Z
	8	Consider the implementation of recommendations from the American Gas Foundation Resiliency Study as appropriate within state jurisdictions.	N/A		
	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.	N/A		



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Section II – Prioritization of Recommendations & Comment Opportunity

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

Q1 Do you support or oppose taking action in response to the 2 recommendations identified below?

Q2 N/A

Q3 *For the 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.

<i>Recommendations:</i>			<i>Take Action? (S/O)</i>	<i>Comments Attached? (Y/N)</i>
	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.	O	
	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.	S	aa



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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]

- Q1 Do you support or oppose taking action in response to the 4 recommendations identified below?
- Q2 *Of the recommendations that you support*, please rank the recommendations in order of priority (1–4, as applicable with 1 as highest priority) that they should be given to increase the reliability of the natural gas infrastructure system in support of the Bulk Electric System.
- Q3 *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.

<i>Recommendations:</i>			<i>Take Action? (S/O)</i>	<i>Priority Given (1-4)</i>	<i>Comments Attached? (Y/N)</i>
	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.	S	3	bb
	2	Consider the establishment of natural gas curtailment plans as part of tariffs or state commission orders that define priorities for natural gas customers.	S	2	
	3	Consider increased collaboration between pipelines and RTOs to shift generation to areas where gas is available in accordance with planning targets.	O		
	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.	S	1	cc



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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

Q1 Do you support or oppose taking action in response to the **15** recommendations identified below?

Q2 *Of the recommendations that you support*, please rank the recommendations in order of priority (**1 – 10**, as applicable with 1 as highest priority) that they should be given to increase the reliability of the natural gas infrastructure system in support of the Bulk Electric System.

Q3 *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.

<i>Recommendations:</i>			<i>Take Action? (S/O)</i>	<i>Priority Given (1-10)</i>	<i>Comments Attached? (Y/N)</i>
	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.	S	1	dd
	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.	O		
	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.	S		ee
	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.	S		
	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	S	2	



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<i>Recommendations:</i>			<i>Take Action? (S/O)</i>	<i>Priority Given (1-10)</i>	<i>Comments Attached? (Y/N)</i>
		capabilities, additional transmission or transportation capabilities, storage, and/or onsite LNG.			
	6	Consider de-rating generators that do not provide adequate reliability.	O		ff
	7	Consider new incentives to spur infrastructure investments and forward energy supply chain arrangements to meet reliability and flexibility needs of generators.	N/A		
	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.	N/A		
	9	Consider creating a reliability surcharge for electric customers to address costs associated with building out additional needed capacity for electric generation.	O		
	10	Consider incentives for additional storage infrastructure in production areas and along the pipeline system and/or additional compression.	N/A		
	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.	S	3	
	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.	S	4	
	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.	O		gg



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			<i>Take Action? (S/O)</i>	<i>Priority Given (1- 10)</i>	<i>Comments Attached? (Y/N)</i>
		<i>Recommendations:</i>			
	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.	O		hh
	15	Consider the development of mechanisms to evenly disperse fuel procurement costs during critical events among all consumers within a region.	O		



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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)

Q1 Do you support or oppose taking action in response to the recommendation identified below?

Q2 N/A

Q3 If you support the recommendation, 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.

<i>Recommendation:</i>			<i>Take Action? (S/O)</i>	<i>Comments Attached? (Y/N)</i>
	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	S	ii



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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

Q1 Do you support or oppose taking action in response to the **3** recommendations identified below?

Q2 *Of the recommendations that you support, please rank the recommendations in order of priority (**1–3**, as applicable with 1 as highest priority) that they should be given to increase the reliability of the natural gas infrastructure system in support of the Bulk Electric System.*

Q3 *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.*

<i>Recommendations:</i>				<i>Take Action? (S/O)</i>	<i>Priority Given (1-3)</i>	<i>Comments Attached? (Y/N)</i>
	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.	O			
	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.	S	1	jj	
	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.	S	2	kk	



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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)

Q1 Do you support or oppose taking action in response to the 5 recommendations identified below?

Q2 *Of the recommendations that you support*, please rank the recommendations in order of priority (1–5, as applicable with 1 as highest priority) that they should be given to increase the reliability of the natural gas infrastructure system in support of the Bulk Electric System.

Q3 *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.

<i>Recommendations:</i>				<i>Take Action? (S/O)</i>	<i>Priority Given (1-5)</i>	<i>Comments Attached? (Y/N)</i>
	1	Consider fuel security as a capacity attribute or required for participation in the wholesale electric markets rather than penalty-based systems.	O		ll	
	2	Consider enhancing capacity performance/pay-for-performance programs and price signals that encourage fuel procurement in advance of critical weather events.	S		mm	
	3	Consider alternative service options that value reliability, fast-ramping, and frequency attributes.	N/A			
	4	Consider reexamining the duration of commitments in capacity auctions.	N/A			
	5	Consider developing capacity accreditation requirements that take into account actual expected generation availability for all resources.	S		nn	



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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

Q1 Do you support or oppose taking action in response to the 4 recommendations identified below?

Q2 *Of the recommendations that you support*, please rank the recommendations in order of priority (1–4, as applicable with 1 as highest priority) that they should be given to increase the reliability of the natural gas infrastructure system in support of the Bulk Electric System.

Q3 *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.

		<i>Take Action? (S/O)</i>	<i>Priority Given (1-4)</i>	<i>Comments Attached? (Y/N)</i>
Recommendations:				
	1	Consider incentives for power customers to make investments in additional infrastructure for dual fuel capability to meet peak demand.	S	oo
	2	Consider passing costs of developing fast-ramping resources to balance intermittent volatility to operators of renewable generation.	S	
	3	Consider regulatory requirements to provide evidence of firm supply/transportation or dual fuel capability as part of resource adequacy planning.	S	
	4	Consider fuel-neutral policies to provide certainty in long-term investments in dual fuel capabilities for electric generators.	S	



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

Q1 Do you support or oppose taking action in response to the 5 recommendations identified below?

Q2 *Of the recommendations that you support*, please rank the recommendations in order of priority (1 – 5, as applicable) that they should be given to increase the reliability of the natural gas infrastructure system in support of the Bulk Electric System.

Q3 *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.

<i>Recommendations:</i>			<i>Take Action? (S/O)</i>	<i>Priority Given (1-5)</i>	<i>Comments Attached? (Y/N)</i>
	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.	N/A		
	2	Consider mechanisms that incentivize investment in reliability through natural gas services and infrastructure, including storage options.	S		
	3	Consider expanding third-party storage opportunities or more storage along mainline pipeline systems for short notice/no-notice service.	N/A		pp
	4	Consider allowing pipelines to build in reserve capacity within expansion projects to account for contingencies during constraint events.	N/A		
	5	Consider expanding the integration of alternative fuels or LNG produced and stored behind the city gate.	N/A		



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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

Q1 Do you support or oppose taking action in response to the 2 recommendations identified below?

Q2 N/A

Q3 *For the 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.

<i>Recommendations:</i>			<i>Take Action? (S/O)</i>	<i>Comments Attached? (Y/N)</i>
	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.	N/A	
	2	Consider the creation of a call market option for LNG.	N/A	



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4 Recommendation 24

- 2 b.i [Recommendation 24] Three topic areas addressed if federal and state entities with jurisdiction over natural gas infrastructure should
 3 a.i cooperate to further study and enact measures to address natural gas supply shortfalls during extreme cold weather events including: (2.b.i)
 3 g 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.

The comment summaries for these three topic areas have been combined as the comments were identical.

- Q1 Do you support or oppose taking action in response to the 5 recommendations identified below?
- Q2 *Of the recommendations that you support*, please rank the recommendations in order of priority (1–5, as applicable) that they should be given to increase the reliability of the natural gas infrastructure system in support of the Bulk Electric System.
- Q3 *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.

<i>Recommendations:</i>			<i>Take Action ? (S/O)</i>	<i>Priority Given (1-5)</i>	<i>Comments Attached? (Y/N)</i>
	1	State Commissions should explore new methodologies that better capture the true value gas infrastructure provides to the resilience of the entire energy system.	N/A		
	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.	N/A		
	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.	S	1	qq



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		<i>Take Action ? (S/O)</i>	<i>Priority Given (1-5)</i>	<i>Comments Attached? (Y/N)</i>	
Recommendations:					
	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.	S	3	rr
	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.	S	2	ss
<p><i>Thank you very much for taking time to complete this survey. Your feedback is valued and NAESB appreciates your support. Your responses will help shape the discussion in the meeting held on March 3, 2023.</i></p>					

Endnotes – Comments from EPSA to clarify support, opposition, or “Not Applicable/No Answer” votes

^a 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.

^b 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.

^c 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.

^d This is not an issue for which requirements should be considered, particularly as to specific backup resources.



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^e 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.

^f 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.

^g This should be discussed, noting that there may be different needs over holiday weekends and during critical periods or forecasted extreme weather events.

^h Questions regarding feasibility during critical periods.

ⁱ 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.

^j These are commercial products to be developed and sold via private transactions.

^k Intrastate pipelines should be required to post more transparent data, akin to what is posted by interstate pipelines on EBBs.

^l 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.

^m The method and substance of communications between customers and their service providers should not be dictated by regulators.

ⁿ This is being addressed by ISOs/RTOs in capacity accreditation stakeholder processes and should not be the subject of a standard or universal requirement.

^o More standardized or more detailed notice of expected events should assist market participants in preparing and understanding possible system constraints or tight conditions.

^p 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.



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^q 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.

^r 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.

^s 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.

^t 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.

^u 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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^y 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.

^z Consideration of weatherization for natural gas facilities is needed to address critical supply chain concerns as experienced in Winter Storm Elliott.



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^{aa} 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.

^{bb} For Recommendations 1-5 in this section, properly designed market incentives should signal and support the desired resource, service, or behavior.

^{cc} 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.

^{dd} 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.

^{ee} 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.

^{ff} This recommendation is unclear; this issue should be addressed in thermal resource capacity accreditation in ISO/RTO stakeholder processes.

^{gg} The utilization of 3rd party storage for no notice service may be feasible but this recommendation addresses different concepts with varied degrees of feasibility.

^{hh} 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.

ⁱⁱ 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.

^{jj} 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.



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^{kk} 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.

^{ll} This is under consideration in capacity accreditation processes at the ISOs/RTOs.

^{mmm} 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.

ⁿⁿ 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.

^{oo} 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.

^{pp} The utilization of 3rd party storage for no notice service may be feasible but this recommendation addresses different concepts with varied degrees of feasibility.

^{qq} 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.

^{rr} 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.

^{ss} 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.