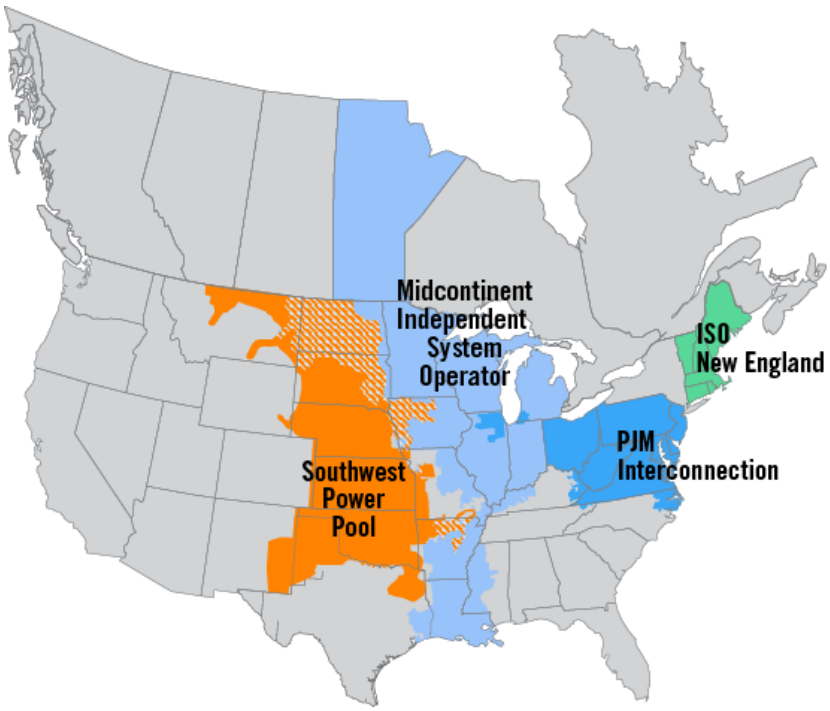
Strategies for Enhanced Gas-Electric Coordination: A Blueprint for National Progress

The regional transmission organizations ISO-NE, MISO, PJM and SPP (Joint RTOs) present this position paper to identify for state and federal policymakers issues that, if appropriately resolved, can enhance the reliability of gas-electric coordination for the benefit of customers of each of these vital energy products. This paper is intended not just to identify issues but to suggest potential initiatives that can help achieve the goal of enhancing the reliability and efficiency of commodity supply and delivery for each industry. The initiatives suggested herein are not set in stone but can be flexibly adopted by particular regions to address each region's unique needs. However, as noted herein, there are certain overarching national issues involving gas-electric coordination on which the regulators at the state and federal level, working together with stakeholders, can help make progress.

Although the Joint RTOs believe that focused work is needed on the issues and initiatives outlined below, we would be remiss if we did not recognize that efforts have been undertaken to improve gas-electric coordination in recent times. Notably, the level of communication and coordination as well as generator performance was markedly improved during the January 2024 Winter Storm Gerri and Winter Storm Heather events than what had been experienced during the December 2022 Winter Storm Elliott or the February 2021 Winter Storm Uri events. By the same token, significant progress has been made on regional gas-electric coordination issues in specific regions including in the west. These more recent experiences underscore the value of better aligning both the purchase of commodity and delivery of natural gas. If anything, these most recent positive experiences underscore the value of focusing on additional enhancements, building on the work of each of the regions, to better align these two industries. The initiatives suggested herein aim to enhance that coordination ultimately benefiting customers in both systems through improved reliability and market efficiency.

EXECUTIVE SUMMARY

As illustrated below, the Joint RTOs collectively serve all or parts of 36 states and the District of Columbia and are entrusted with providing the reliable and efficient supply and delivery of electricity to 144 million people in their respective regions. Comprising independent entities, the mission of the Joint RTOs is centered on reliability and the operation of efficient competitive wholesale electricity markets.



Respective Joint RTOs continue to rely on thermal generation fueled by natural gas. This fact has underscored the need for increased coordination of both the markets and operations of gas and electricity infrastructure to enhance the reliability of both of these essential services. In this paper, the Joint RTOs put forth a range of immediate- and near-term initiatives aimed at achieving three overarching goals:

- **Gas Market Enhancements That Help To Improve Supply and Pricing Options To Ensure Reliability Given a Rapidly Evolving Electric Generation Fleet:** This focus is on enhancing gas commodity and transportation market liquidity and transparency, especially during weekends and holidays, as well as scheduling flexibility through the availability and expansion of flexible transportation products, such as no-notice services.
- **Operational Enhancements That Proactively Address Specified Reliability Needs and Identified Vulnerabilities:** The Joint RTOs urge reforms to address gas and electric infrastructure co-dependent vulnerabilities (such as electric-fueled compressor stations and wellhead weatherization to support extreme weather supplies) and provide comment herein on proposals for additional changes to match the electric and gas day.

- **Regulatory Coordination of State and Federal Authority To Address Emergencies:** The Joint RTOs outline the need for specific reforms to address the Department of Energy's authority to address fuel emergencies as well as the need for better alignment of curtailment priorities at both the state and federal level.

This position paper identifies ten specific recommendations along with suggested specific action steps to be undertaken respectively by the RTOs, gas producers, marketers and pipelines, and/or federal and state regulators corresponding to each recommendation. The specific initiatives and action steps can be summarized as follows:

Issue	Strategic Initiative	Lead(s)
Increased Transparency in Secondary Markets	States could consider issuing policy statements indicating that in determining just and reasonable rates for gas commodity and capacity, purchases and sales through a more transparent and centralized secondary market could, as one factor among many, receive a higher presumption of reasonableness, while those purchases outside those markets could be subject to greater scrutiny in state gas cost recovery proceedings.	State Regulators
Enhancing Weekend and Holiday Gas Commodity Trading Supply and Liquidity	FERC with the states should consider leading industry dialogue to further investigate opportunities that would enable an end to multiday trading requirements of natural gas over weekends and holidays that significantly strain natural gas/power coordination and dispatch.	FERC, NARUC, Gas Pipelines, Gas Marketers, Gas Generation Operators
Enhancing Weekend Supply Liquidity of LDC Holdings in Gas Commodity Markets	Through NARUC, work should be undertaken with the states on a national level to ensure that best practices associated with creating incentives to avoid LDCs holding more capacity and commodity than needed, particularly going into long weekend periods, while still respecting their reliability obligations.	NARUC
Enhancing Scheduling Flexibility	Incenting development of packages of firm transportation and storage	Natural Gas Marketers, Interstate Pipelines
Developing Additional Reserve Products in RTO Markets	RTOs working through their stakeholder processes would continue to address the regional challenges, needs and priorities (including the potential for additional reserve products) reflecting each region's unique resource mix and policy drivers. It would be helpful for FERC to continue to indicate its support for the development of such products and use its authority to encourage pipelines, suppliers and owners of storage to participate in this work.	ISO/RTOs, FERC, Gas Pipelines, Gas Marketers
Reforming Force Majeure Provisions in the Standard NAESB Contract	FERC and the states could indicate their support for contracts for the sale of commodity that include more enhanced force majeure provisions rather than defaulting to the standard NAESB force majeure provision.	FERC, States, NAESB
Addressing Potential Gas-Electric Co-Dependency Vulnerabilities	Pipeline and gas supply industries, working with the RTOs and electric distribution utilities, identify critical gas infrastructure dependent on electric supplies and work to ensure that there are redundant sources of power available to such critical gas facilities.	ISO/RTOs, Pipeline Operators, Gas Suppliers and Electric Distribution Providers
Alignment of the Gas-Electric Day	Undertake an updated examination of the present gas-day structure and nomination cycles as we go into an era where more immediate demands will be placed on the pipelines.	ISO/RTOs, Pipeline Operators, NAESB

Issue	Strategic Initiative	Lead(s)
Refining the Human Needs Definition	This initiative could be undertaken working with a small group of states willing to focus on the issue or on a broader scale through the NARUC Gas and Electricity Committees, as the issue is not limited to any one region but is applicable to any class of generators qualifying as critical load but located behind an LDC city gate.	States, LDCs and/or NARUC
Reexamining Emergency Gas Prioritization at the Federal Level	FERC should consider reexamining its firm definition and potentially creating, within the firm classification, a critical load prioritization with appropriate pricing for this enhanced service.	FERC
Availability of Emergency Authority To Address Fuel Supply or Transportation Shortfalls	Federal and state policymakers should work with DOE to explore better processes and procedures around use of the Defense Production Act if that remains the only statutory tool and, if progress cannot be made in these areas, consider requesting Congress to grant more workable authority particularly in the event of fuel commodity or transportation emergencies.	Fed/State Policymakers, DOE, FERC/Congress
Wellhead Gas Producer Weatherization	As FERC's jurisdiction does not extend to the wellhead, there should be further discussion with state and federal regulators as to whether the state regulatory role should be extended to address the reliability of service from wellheads within their jurisdiction that enhances their present jurisdiction over the safety of such facilities	NARUC, States, PHMSA, Gas Suppliers, ISO/RTOs
Targeted Permitting Reforms	Permitting reforms are actively under consideration in Congress and at the state level. However, permitting reforms for transmission vs. pipelines are being considered in separate silos that largely ignore the interdependent nature of these two systems. The electric industry and gas pipeline industry should coordinate so as to better educate policymakers on the interdependencies of these two systems and the need for permitting reform to address these co-dependencies in a comprehensive manner.	FERC, RTOs, Pipeline Operators
Examining Criteria for Expansion of Critical Infrastructure	Reforming the criteria for the need determination in pipeline siting proceedings and ensuring cost recovery for expansions of pipeline infrastructure is a multifaceted issue that requires ongoing dialogue. As a caveat, discussion in this area should not slow current efforts at permitting and siting critical pipeline infrastructure. Accordingly, one approach would be to begin targeted discussions between the pipeline and electric industries working with state and federal regulators on these larger issues. The NARUC Gas-Electric Alignment for Reliability (GEAR) working group could serve as one forum to begin these discussions that would then be supported by regional pipeline/electric industry discussions.	FERC, State Policymakers

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DISCUSSION

The Joint RTOs have no pecuniary interest in any particular type of generation resource. However, given our growing reliance on gas-fired generation, our role as reliability coordinators for over two-thirds of the nation compels us to keenly focus on effective gas-electric coordination. Electric reliability is increasingly reliant on the inter-relationship between the electric markets and well-functioning gas markets as well as the availability of adequate natural gas infrastructure. Each regional transmission organization has experienced or forecasts significant increases in load demand. Gas-fired generation plays a critical role in helping to balance the grid.

This reliance on gas-fired generation necessitates heightened flexibility and efficiency from gas supply and pipeline operations. However, in certain parts of the country, the pipeline system faces constraints due to challenges building new infrastructure. The rising demand for increased throughput and more flexible use of the pipeline system by thermal generation clashes with both the necessary new infrastructure and certain traditional regulatory rules governing pipelines and gas markets.

For many grid operators, compounding these challenges is the imminent retirement, over the next five to ten years, of significant levels of dispatchable thermal generation. This impending shift further accentuates the urgency for coordinated efforts to address the evolving landscape of gas-electric coordination and infrastructure development.

While it is indisputable that, in certain regions, expanding natural gas infrastructure – including production, transportation and storage – is imperative to support reliability, the natural gas industry faces formidable challenges to new investment due to heightened state and federal environmental regulation, permitting complexities and local siting opposition. While the Joint RTOs support targeted expansion of the pipeline system, we believe that in the interim, increased reliability of the electric system can be achieved from optimizing both the operation of the existing infrastructure and the liquidity of gas markets.

This challenge is not unfamiliar to the Joint RTOs. Before the introduction of Federal Energy Regulatory Commission (FERC) Orders 888 and 2000, similar concerns existed about the lack of capacity on the existing electric transmission system. The implementation of markets and Locational Marginal Pricing (LMP) under these orders enabled system operators to enhance the efficiency of the existing transmission system, resulting in cost savings for customers. Applying a similar approach, this position paper operates under the assumption that we will continue to operate for some time with the existing gas and electric infrastructure. This position paper proposes certain reforms based on that assumption.[1]

In this position paper, the Joint RTOs put forth a range of immediate- and near-term initiatives aimed at achieving three overarching goals:

- **Market Enhancements:** Increasing gas market liquidity and scheduling flexibility: This focus is on enhancing liquidity of gas commodity and transportation services, especially during weekends and

[1] It is essential to emphasize that in certain RTO regions, it remains critically important to expand the existing natural gas infrastructure. For those regions, infrastructure expansion is integral to an overarching, comprehensive plan at improving gas-electric coordination and bolstering the natural gas pipeline infrastructure so critical to this nation's energy security needs.

holidays, as well as opportunities for increased scheduling flexibility through the availability and expansion of products, such as no-notice services.

- **Operational Enhancements:** The Joint RTOs propose improvements to address gas and electric infrastructure co-dependency vulnerabilities and provide comment on proposals for additional changes to match the electric and gas day.

- **Regulatory Harmonization:** Given the growing significance of natural gas as a critical fuel source, the Joint RTOs propose better alignment of curtailment priorities at both the state and federal levels and clear authority for the Department of Energy to be able to use its emergency authority to address fuel emergencies.

The Joint RTOs believe that the reforms necessary to enhance gas-electric coordination are a shared responsibility of both industries. Making market changes in one industry without concomitant reforms in the other will do little to ensure a comprehensive solution. As a result, the Joint RTOs acknowledge that electric markets have already made significant reforms to address cold weather, so while incremental reforms remain to be undertaken within the market rules presently covering the electric markets, it is unlikely that electric market reforms alone will address the gas-electric coordination issues outlined herein.

With these thoughts in mind, the Joint RTOs are proposing the following national initiatives for consideration by policymakers at the state and federal level:

I. MARKET ENHANCEMENTS

A. Increased Transparency in the Secondary Markets:

Today, the secondary markets for gas transportation and commodity are relatively opaque with gas marketers putting together short-term arrangements for generating unit owners. Although gas commodity is traded on the ICE exchange, there is no effective centralized clearinghouse for price discovery of pipeline capacity available in the secondary markets or products bundled by marketers of both commodity and capacity. This lack of transparency hinders rational price formation in electricity markets.

Suggested Initiative: Given that some of the principal sellers of capacity and commodity in the secondary market are local distribution companies (LDCs) whose gas purchasing practices are regulated at the state level while many of the generators purchasing these products are regulated by FERC, a coordinated regulatory approach is needed. In the case of LDCs, the states could consider issuing policy statements indicating that in determining just and reasonable rates for gas commodity and capacity, a portion of purchases and sales through a more transparent and centralized secondary market could, as one factor among many, receive a higher presumption of reasonableness while those purchases outside those markets could be subject to greater scrutiny in state gas cost recovery proceedings. By the same token, FERC could indicate through a policy statement or other means that as market power mitigation tools are applied by RTOs and ISOs, a greater presumption of the competitiveness of market outcomes should attach to generators who have undertaken, as part of their fuel procurement policies, a greater degree of purchases and sales out of transparent markets for capacity and commodity when they are purchasing in the secondary markets.

B. Enhancing Weekend and Holiday Gas Commodity Trading Supply and Liquidity: The current multiday trading of natural gas commodities over weekends and holidays does not effectively align with the daily weather changes and resulting demand changes. The lack of discrete supply options has significant natural gas/power coordination and dispatch implications. Advances in liquidity and timing of the natural gas commodity products and trading with the power market daily schedules would increase reliability and efficiency of the electric system. Current discussion among industry participants alone have not been able to address the commercial inflexibility in natural gas supply over weekends and/or holidays.

As Nancy Bagot of the Electric Power Supply Association (EPSA) noted in her testimony at the FERC 2023 Annual Reliability Technical Conference:

> "Largely the supply illiquidity issue stems from gas marketing and purchasing customs to treat Saturday, Sunday, and Monday as a bundled package and less so the scheduling of pipeline transportation, as pipelines accept nominations on a daily and intra-day basis, though certain restrictions on pipelines to require pro-rata nominations and takes over a gas day creates additional incompatibility with power markets. Intraday natural gas supply flexibility is limited by directives requiring nominations and gas flow to conform to the approved tariff services and timelines. The conundrum here is how this scenario is created by the commercial custom of the gas market selling, and large purchasers buying, "weekend packages." There are no identified structural or economic reasons for natural gas to trade daily for only four days a week and as bundled packages for the remaining three days a week. This is a legacy custom, not the result of rules or regulations being imposed on gas suppliers or by gas pipelines. And yet, this is an issue that must be resolved as winter storms do not respect this arbitrary habit of treating weekends and/or holidays differently."

Suggested Initiative: NARUC led dialogue on opportunities to facilitate more robust and liquid gas commodity trading availability through its GEAR working group initiative. Consistent with Recommendation 7 of the Gas Electric Harmonization Report, "State public utility commissions and applicable state authorities in states with competitive energy markets should engage with producers, marketers and intrastate pipelines to ensure that such parties' operations are fully functioning on a 24/7 basis in preparation for and during events in which extreme weather is forecasted to cause demand to rise sharply for both electricity and natural gas, including during weekends and holidays."

C. Enhancing Weekend Supply Liquidity of LDC Holdings in Gas Commodity Markets: While gas supply is able to be purchased over most weekend periods, supply liquidity and price risk become a significant challenge for gas generators, particularly during cold periods and longer holiday weekends in the winter months. Large gas buyers (LDCs and industrial customers) with more predictable needs will typically buy their weekend gas requirements on Friday morning for the Saturday, Sunday and Monday gas days. This results in far less gas being available for purchase over weekend periods. However, given the variability of loads and the fact that electric markets are cleared daily, it is very inefficient and becomes far more difficult to accurately commit generating units days in advance and then be constrained by that commitment. Such multiday commitments also have the unintended consequence of unduly suppressing wholesale electricity prices thereby reducing the responsiveness of the rest of the fleet in real time. The NAESB process focused only on proposing multiday commitments of resources in the electric markets without correspondingly proposing reforms to address the lack of liquidity in the weekend gas markets that give rise to the challenge in the first instance.

Although the merits of multiday commitment are being addressed in individual RTO/ISO stakeholder processes, to the extent RTOs are forced to provide multiday commitments as NAESB recommends, the industry would not be addressing the real liquidity issue holistically. Rather, if not carefully done, simple adoption of a multiday commitment could be reducing the flexibility needed by RTO operators to meet changing conditions by instead creating a growing group of long-lead-time units that need long lead times **not** because of physical limits on the unit itself but instead because of the lack of liquidity in the gas markets.[2] Given the need for more flexible units in RTO markets, a move toward multiday commitments, with no other reforms, has the potential to simply reinforce the lack of liquidity and therefore lose the flexibility needed to efficiently run power markets. In essence, the lack of liquidity in the gas markets at a minimum translates into an inefficient friction in the electricity markets and, at worst, results in reliability issues in both markets.

Suggested Initiative: LDCs have a legitimate need to acquire and reserve pipeline capacity and gas supply on a forward basis to meet their obligation to serve their core customers. But there is a lack of consistency among the states as to:

a. The appropriate level of supply purchased
b. Equally if not more important, incentives to release unneeded capacity and commodity into the secondary market

Gas cost recovery is, in most states, a 100% pass-through at the state level. There often is a limited, and in many cases inconsistent, level of review among the states as to: (1) when release of unneeded capacity is in the interest of the LDCs' customers; and (2) how revenues from capacity release are handled. Moreover, incentives for capacity release vary by state with some states allowing a 50/50 split of the revenues gained from capacity release while other states provide little incentive for LDCs to release unneeded capacity. This patchwork creates a variety of conflicting incentives that then impact the liquidity and transparency of the secondary market across the nation.

Although, certainly cold snaps put pressure on LDCs to retain as much supply and transportation capacity as possible. Cold waves are not always interconnection-wide, with weather variations across a region playing a role in demand in the gas heating markets just as they do in affecting demand in electricity markets. As a result, through NARUC, work should be undertaken with the states on a national level to ensure that best practices associated with creating incentives to avoid LDCs holding more capacity and commodity than needed, particularly going into long weekend periods, while still respecting their reliability responsibilities. To the extent such supplies are prematurely locked up as we approach a weekend period, the problem of a lack of liquidity in the weekend markets simply feeds on itself and is compounded. To complement this effort, work should be undertaken and continued by RTOs nationwide to provide, through energy reserve and pricing incentives, for generators to acquire incrementally released pipeline capacity as we enter into and move through holidays and weekends.

[2] Forecasting load on weekends and holidays is especially challenging as the weather, economy and usage patterns continue to change in this post-COVID environment. This uncertainty makes it even more difficult to create a weekend gas commitment that will, on one hand, provide the needed flexibility without, on the other hand, over-procuring gas at a high cost to consumers and a reduction in available capacity to other users of the pipeline system.

D. Enhancing Scheduling Flexibility: Along with the liquidity issue outlined above, there are significant differences in the level of scheduling flexibility available to generators to respond to RTO dispatch instructions, particularly during constrained system conditions. The Joint RTOs recognize that the degree of pipeline scheduling flexibility is heavily influenced by the degree of storage available on the system and the extent to which the pipeline is fully subscribed during peak conditions. However, the Joint RTOs suggest that additional attention be brought to incenting the development of packages of firm transportation and storage and other pipeline services that can better meet the flexibility needs driven by changing electric system demands.

***Suggested Initiative*:** To the extent RTO markets can be modified to stress the need for fuel security in their capacity awards (e.g., through the application of improved accreditation methodologies) or other market mechanisms, gas marketers would have increased incentives to bundle transportation, commodity and storage products and make them available in advance to meet generators' ability to achieve capacity accreditation. In recent discussions, certain pipelines and their marketing arms have expressed interest in developing innovative packages of transportation such as enhanced "no notice" and "park and loan" services to better meet the needs of generators whose profile of gas consumption changes hourly. By the same token, marketers have expressed interest in bundling commodity, transportation and storage products that better meet the needs of the generation community. Given that generators are a growing customer base for these marketers, RTO market designs that appropriately recognize and accredit firm fuel arrangements are critical to further incenting the development of these products.

E. Developing Additional Reserve Products in RTO Markets: Joint RTOs continue to work to advance market-based solutions to support reliable operations. The Joint RTOs believe flexible reserve products can ensure proper incentives and pricing of this critical product. Enhanced reserve pricing can help to create a more liquid market for "just in time" purchases of gas commodity and new more flexible gas transportation services. In addition, additional enhanced and flexible reserve products have the potential to spur development of more liquid products being offered by gas marketers and pipelines.

Suggested Initiative: The opportunities for this change can come from the RTOs working through their stakeholder processes to address the regional challenges, needs and priorities reflecting each region's unique resource mix and policy drivers. Much of that work is underway in the RTO regions. It would be helpful for FERC to continue to indicate its support for the development of such products and use its authority to encourage pipelines, suppliers and owners of storage to participate in those discussions and to propose their own corresponding flexible products the costs of which could be recovered by generators through the RTO-developed reserve products.

II. OPERATIONS ENHANCEMENTS

A. Reforming Force Majeure Provisions in the Standard NAESB Contract: Currently, natural gas generators bear much, if not all, the risk and cost associated with managing wellhead performance. While generators can try to hedge against this risk, current force majeure language permits wellhead entities to claim force majeure for a broad spectrum of conditions. The standard NAESB contract for the purchase of gas commodity includes a force majeure provision that does not require the supplier to take reasonable steps proactively to limit the occurrences of force majeure events (such as winterization of facilities) or face consequences for failing to do so. If the scope of force majeure language was narrowed,

however, it would presumably help to send better market signals toward promoting winterization investments at the wellhead.

***Suggested Initiative*:** As pricing of commodity flows through in power rates and gas LDC purchase costs, FERC and the states could issue a policy statement indicating that instances of force majeure could be subject to review as to whether adequate steps, such as winterization, were taken to mitigate the force majeure so as to continue to ensure that prices for commodity remain just and reasonable during an extended force majeure event. In addition, FERC and the states could indicate their support for contracts for the sale of commodity that include more enhanced rather than the standard NAESB force majeure provisions.

B. Addressing Potential Gas-Electric Co-Dependency Vulnerabilities: Although good work has been done to better winterize key infrastructure components on the gas and electric systems, there remain notable vulnerabilities as a result of natural gas infrastructure being dependent on the availability of electricity. During Winter Storms Elliott and Uri, both the gas and electric systems identified instances where effective winterization efforts could have reduced vulnerabilities on both systems. Certain electric-powered natural gas compressor stations and processing facilities were affected by an interruption of electric supplies, which then led to declines in available commodity to fuel electric generators. In short, the co-dependencies, without adequate backup facilities, can represent a significant area of vulnerability for both systems. Recognizing these vulnerabilities, we can increase our collaborative efforts to address and mitigate these issues.

***Suggested Initiative*:** As to the co-dependencies of critical infrastructure, resolving this issue requires work by the pipeline and gas supply industries, working with the RTOs and electric distribution utilities to ensure that there are redundant sources of power available to critical facilities. Moreover, since the conversion of compression stations and processing facilities to be powered with electricity was driven, in part, by the need to meet environmental permitting requirements, closer coordination with federal and state environmental regulators is needed to address the co-dependency vulnerabilities.

Similarly, it would be appropriate for the industry and policymakers to examine winterization vulnerabilities of upstream facilities. These issues could be addressed by individual entities but also could be coordinated on a policy level through a consortium of pipelines, EDCs and RTOs working with NARUC and the Environmental Council of the States (ECOS). The DOE national labs could be utilized to further support this effort through analysis of best winterization practices of production facilities and identification of continued vulnerabilities.

C. Coordination of Modeling of the Gas and Electric Systems in Planning and Operations: Although there are a number of co-dependencies in the gas and electric systems, the planning of the gas pipeline systems and the electric grid have largely occurred independent of each other. The NAESB recommendations touch on this issue but tend to focus more on the DOE labs undertaking their own independent analyses as opposed to developing more common modeling protocols to be used in individual RTO and pipeline planning processes.

***Suggested Initiative**:* Although the electric and pipeline systems have certain innate differences ranging from the speed of the transmission of the product to the way the systems are planned and regulated,

given the ever-growing co-dependencies of gas and electric, there needs to be additional work on coordinated modeling of the future demands and congestion points for each system. Common modeling will help to inform expansion decisions and illustrate places where future customer demands on the gas and electric systems need to be better coordinated and addressed. This initiative could begin through a series of workshops between the gas and electric industries that could be overseen by FERC given its regulatory authority over both industries.

D. Alignment of the Gas-Electric Day: In many regions, RTOs and ISOs have already moved the timing of the opening and closing of their electric markets to better align with the gas day. The latest NAESB recommendations in this area argue for more changes but potentially overstate the effectiveness of additional change in addressing the more fundamental issues outlined above. Efforts within the last decade to align markets between gas and electric under FERC Order 809 resulted in modifications to the electric industry's market clearing times for Day-Ahead Market activity. Complementing this, an additional nomination time was created; however, no changes to the gas-day clearing times to better align with market clearing was undertaken.

Suggested Initiative: Additional changes to the timing of the gas and electric days could be marginally helpful for certain markets, but it is clear that this is not the "silver bullet" solution to gas-electric coordination issues as it does not address the fundamental problems of gas procurement flexibility, liquidity and granularity noted above. To ensure that this issue is addressed comprehensively, there also needs to be an updated examination of the present gas-day structure and nomination cycles as we go into an era where more immediate demands will be placed on the pipelines.

III. REGULATORY HARMONIZATION AND REFORMS

A. Refining the Human Needs Definition: States have prioritized gas delivery service to critical loads through their definition of human needs priorities in LDC tariffs. But in many states, there is a lack of recognition in these tariffs and regulations that these same human needs customers also depend on electricity for health and safety. As a result, state policymakers should consider refining the human needs' definition to also consider units supporting critical reliability needs and electric system restoration plans as receiving priority in the event of gas curtailments. As a potential model, the Joint RTOs note that California gas pipelines have already moved forward in this area through revisions to certain LDC tariffs. For example, in 2016 the California PUC adopted a settlement agreement modifying SoCalGas and SDG&E's curtailment priorities to account for day-ahead forecasts of peak electric generator loads provided by the relevant electric grid operator(s). Specifically the PUC indicated to SoCalGas and SDG&E that a proposed curtailment of dispatched electric generator load could adversely affect electric grid reliability or cause firm electric load shedding.

***Suggested Initiative*:** This larger initiative could look at the California experience and other examples of best practices. The initiative could be undertaken working with a small group of states willing to focus on the issue or on a broader scale through the NARUC Gas and Electricity Committees as the issue is certainly not limited to any one region but is applicable to any class of generators qualifying as critical load but located behind an LDC city gate. This is even more critical as states pursue higher levels of electrification.

B. Reexamining Emergency Gas Prioritization at the Federal Level: At the federal level, gas transportation is available on a nondiscriminatory basis to all firm customers. This leaves little room, in the event of a true emergency, for prioritization of gas to units supporting critical reliability needs and electric system restoration plans deemed black start or critical load and elevates industrial uses to the same priority as these other priorities. Moreover, DOE has advised that a Section 202c petition is not available to prioritize deliveries of natural gas commodity in such situations.

Suggested Initiative: Given these existing regulations, FERC should consider reexamining its firm definition and potentially creating, within the firm classification, a critical load prioritization with appropriate pricing for this enhanced service.

C. Availability of Emergency Authority To Address Fuel Supply or Transportation Shortfalls: Although the language of Section 202 c of the Federal Power Act clearly contemplates fuel emergencies, DOE to date has declined to interpret the statute to direct the delivery or procurement of fuel in such circumstances. Instead DOE has indicated that the only avenue for relief for fuel emergencies would be resorting to invoking the Truman-era Defense Production Act. However, DOE has no specific processes or precedent as to the use of this act, and the precedent of other federal agencies that have used the Defense Production Act are a poor fit for the electric sector.

***Suggested Initiative*:** The electric industry should speak out on this gaping hole in emergency authority, engage with DOE on its more narrow interpretation of Section 202(c), require better processes and procedures around use of the Defense Production Act if that remains the only statutory tool, and, if progress cannot be made in these areas with DOE, consider requesting Congress to grant more workable authority particularly in the event of fuel commodity or transportation emergencies.

D. Wellhead Gas Producer Weatherization: Currently, there is a jurisdictional gap when it comes to the regulation of wellheads (i.e., producers). This presents a problem that relies on intrastate requirements to meet interstate reliability performance needs. As FERC's jurisdiction does not extend to the wellhead, there should be further discussion with state and federal regulators as to whether the state regulatory role should be extended to address the reliability of service from wellheads within their jurisdiction that enhances their present jurisdiction over the safety of such facilities. In a number of states, state commissions already have authority to review the safety of pipeline gathering facilities either through direct legislative authority or through delegated authority emanating from federal legislation that created the Pipeline and Hazardous Materials Safety Administration (PHMSA). Such discussions could include consideration as to the merits of whether there should be a reliability baseline for wellhead operations and to what extent wellheads should be winterized or protected to prevent water and other liquids in the gas from freezing and blocking the flow of gas (aka freeze-offs) in situations that would not otherwise be addressed under today's federal and state safety requirements.

Both in Winter Storm Elliott and Winter Storm Uri, electric and gas pipeline reliability was stressed as a result of freezing of upstream gas drilling and production facilities. Without appropriate winterization throughout the supply chain, efforts focused on winterizing just generators or just pipelines may not achieve the intended goal.

To ensure there is a level playing field across all states and to the extent not addressed otherwise at the federal level, it will be important for states to agree on an appropriate reliability baseline. If there are

variances in performance expectations from one state to another, it could lead to competitive advantages and disadvantages in the market. The Joint RTOs reiterate NAESB GEH Forum Report recommendation 16 that:

> "As identified in the November 2021 Report, a majority of the natural gas production issues during the events of Winter Storm Uri, were attributable to weather and freeze-related issues and included a recommendation that the forum consider programs that could encourage and provide compensation opportunities for natural gas infrastructure facility winterization. The importance of these discussions within the forum were reinforced by the events surrounding Winter Storm Elliott, which GEH Forum participants stated highlighted the need to ensure adequate cold weather protections are in place for upstream facilities, even in regions with historically colder climates. As noted by many forum participants, weatherization protections are foundational in ensuring reliability of the natural gas and electric systems as well as human safety, and both electric and natural gas participants supported the consideration of strategies or requirements to weatherize natural gas infrastructure, including wellhead and processing and gathering systems."

Suggested Initiative: From that perspective, the establishment of a nationwide forum would be helpful so that states can collectively agree on how to address this issue. NARUC could develop as part of GEAR weatherization guidelines appropriate for each region/jurisdiction to support the protection and continued operation of natural gas production and processing and gathering system facilities during extreme weather events. Such an effort can inform applicable state authorities for potential requirements or recommendations to support reliable gas commodity supply particularly in extreme weather conditions.

E. Targeted Permitting Reforms: Although the above reforms will help to make significant incremental progress on better utilizing the existing gas pipeline infrastructure, they should not be read as a substitute for the need to timely expand the pipeline system where needed. To date, the expansion of the pipeline system has become extremely contentious, as has expansion of the transmission grid. Enhanced communication with the public is one critical element to underscore the need for expansion of these two systems to ensure that customer demands can be met in our growing economy. By the same token, both industries face a host of permitting challenges that can significantly slow critically needed expansions.

Suggested Initiative: Permitting reforms are actively under consideration in Congress and at the state level. However, permitting reforms for transmission vs. pipelines are being considered in separate silos, which largely ignore the interdependent nature of these two systems. The electric industry and gas pipeline industry should coordinate so as to better educate policymakers on the interdependencies of these two systems and the need for permitting reform to address these co-dependencies in a comprehensive manner.

F. Need for Gas Reliability Standards: In the well-publicized prologue to the NAESB Report, the independent authors called for the creation of a reliability organization for the gas industry similar to NERC's role in overseeing the reliability of the bulk electric grid. The authors recognize that these efforts probably require an act of Congress to force a reluctant gas industry to embrace this proposal. Although this issue certainly warrants further exploration and discussion, that discussion should not be at the expense of utilizing existing authorities to enhance gas-electric coordination through initiatives such as those proposed in this paper. Therefore, utilizing existing statutory authority at the state and federal level

would go a long way to enhance gas-electric coordination without the industry waiting for Congress to resolve the structural reform called for by the authors to the prologue to the NAESB gas-electric report.

G. **Examining Criteria for Expansion of Critical Infrastructure:** Due to the current permitting challenges and limitation for cost recovery, pipeline operators are limited to making investments in new infrastructure only if they receive a long-term commitment from shippers (either producers or consumers of gas). FERC will not allow cost recovery without those long-term commitments. However, merchant gas-fired electric generators have little incentive to make these long-term contractual commitments in the face of declining capacity factors. Wholesale electric market incentives, if properly structured, will drive generators to seek peaking gas supplies, but the question is whether those supplies will be available without some regulatory support for the pipeline industry to plan for meeting that demand, and a means for cost recovery. A related problem is that during the course of the energy transition, average utilization of the gas infrastructure will likely drop, further undermining the economics of the gas pipeline industry.

Suggested Initiative: Reforming the criteria for the need determination in pipeline siting proceedings and ensuring cost recovery for expansions of pipeline infrastructure is a multifaceted issue that requires ongoing dialogue. As a caveat, discussion in this area should not slow current efforts at permitting and siting critical pipeline infrastructure. Accordingly, one approach would be to begin targeted discussions between the pipeline and electric industries working with state and federal regulators on these larger issues. The NARUC GEAR working group could serve as one forum to begin these discussions that would then be supported by regional pipeline/electric industry discussions.

As noted above, the Joint RTOs present this position paper and catalog of potential initiatives to stimulate discussion of national reforms that could significantly enhance gas-electric coordination while we await the development of new pipeline infrastructure. We look forward to working with all stakeholders to engage on these important initiatives.