**via email and posting**

**TO:** NAESB Board Gas-Electric Harmonization Committee Members and posting for interested industry parties

**FROM:** Jonathan Booe

**RE: Interim** Survey Results from GEH Committee Members

**DATE:** May 11, 2012

Dear Gas-Electric Harmonization Committee Members,

Attached please find the interim results of the survey as we still have a few surveys yet ot be returned. The interim results are based on the 28 surveys submitted by the committee members. Several committee members, due to travel and other commitments, intend to forward their results within the next week, and as such, their responses have not been aggregated. The results will be discussed at our meeting on May 16.

| **NAESB GEH Committee Survey – April 24, 2012** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  |  | Policy | Commercial | Standards | Comment |
| 1. Observations and Core Issues as of April 24, 2012:   * Scheduling and other inconsistencies in the interactions of the two markets impact the effectiveness of providing gas and electric service. * **Core issue: Should NAESB examine:** * **The gas & electric scheduling timelines to create more certainty and flexibility in scheduling, recognizing that providing flexibility in one area may take away flexibility in another?** | | | | | |
| 1-1 | For day-of operations, intraday nomination flexibility is key in contingency response, load following, and in backing up renewables. | 7 | 11 | 18 | 5 |
| 1-2 | As generation units sign up for firm transportation, the bumping rules in the tariff provisions may impede the benefit of holding firm gas transportation. Added flexibility and types of gas transportation services may be needed by gas-fired power generators to meet the clearing and reliability requirements of the electric market. | 10 | 18 | 12 | 2 |
| 1-3 | If a gas-fired  generator submits a generation offer before scheduling gas and the generator is not informed as to whether its generation offer is accepted until after the deadline for a  timely gas nomination, it runs the risk of being considered secondary firm, if the generator holds firm transportation, or interruptible. This exposes the generator to the risk of an obligation to generate without gas supply. On the other hand, if the gas-fired generator submits a timely nom for transportation before knowing whether its generation offer has been accepted, it runs the risk of being caught long gas supply that must be dealt with in the intraday market exposing the generator to an economic loss or penalties. | 9 | 9 | 8 | 11 |
| 1-4 | Scheduling flexibility can be introduced on a pipeline by pipeline basis to the pipeline’s customers. Natural gas market grid synchronization plays a role, as in multi-pipeline nominations which may cross multiple control areas, the least flexible pipeline in the chain of nominations will govern the timing of submittal and confirmation of transaction(s). | 8 | 11 | 15 | 9 |
| 1-5 | If timelines were modified to reduce the gaps in the clearing of gas and electricity markets, a nine hour gap could be reduced to a one hour gap if the timelines were modified to an east and a west model. This would be a considerable change to the timelines supported by the pipelines – with a focus on synchronizing the clearing times and the economic day for both markets. | 18 | 5 | 19 | 2 |
| 1-6 | Significant differences in both natural gas and electric markets day-of service and day-ahead scheduling procedures could lead to separate considerations in drafting recommendations for the day ahead and the intra-day scheduling of energy. .For example, the completion of the electric day ahead market (which is iterative and can take approximately four hours) could be synchronized with the natural gas timely nomination cycle for scheduling energy over a majority of the hours in the peak operating period of the electric day. Added intra-day flexibility in both the electric market offers and gas scheduling might improve scheduling coordination for those hours that are not common to the same gas and electric delivery days. | 13 | 8 | 18 | 4 |
| 1-7 | The timely natural gas nomination process, which is iterative, can take from three to four hours. The hourly or intraday gas nomination process is considerably shorter as is the adjustments and changes at the margin to the decisions made in support of the timely nomination process. In some cases, gas fired generators could need to make changes in their usage more quickly than the current nomination processes or services allow. | 4 | 7 | 16 | 8 |
| 1-8 | There are a number of options offered by some pipelines that introduce flexibility through the use of hourly firm non-ratable takes. Ratable takes are taken on a uniform hourly basis over the day. Non-ratable takes may be spread over a shorter period. There is a tension between the timely/intraday nomination schedule as outlined in NAESB WGQ Standard No. 1.3.1 and the hourly flexibility provided by non-ratable deliveries on some pipelines and/or by use of hourly nominations, which comes into play when bumping is to be applied to preserve firm transportation service priority. Following the schedule outlined in the NAESB standards, the interruptible transportation service may have already been used to deliver the volume by the time it is determined that bumping is to be enacted to provide firm service for hourly nominations. A recent opinion issued in FERC RP11-2569-002, et al, (<http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20120315-3006>), provides some background for this observation. | 11 | 7 | 18 | 8 |
| 1-9 | As more efficiencies and flexibility can be introduced into the scheduling for both markets, an outcome may be an increased market reliance on natural gas fired generation over other fuels used for electricity generation. | 6 | 4 | 2 | 19 |
| 1-10 | a) Incentives could be designed into the natural gas scheduling and confirmation process for a wholly electronic process that would require less time to complete than the existing process which includes communications that are not fully electronic. (This could incorporate the thoughts in observation 1-2). b) If a fully electronic expedited process for natural gas nominations were implemented, it may be prudent to re-examine the bumping rules for the market participants who follow the fully electronic expedited process. The existing combination of manual and electronic process for natural gas nominations could exist as is. | 15 | 6 | 19 | 5 |
| 1-11 | Using natural gas-fired generation to back up renewables could require enhanced and additional flexibility in day-of nominations and/or no-notice service or similar services. | 13 | 12 | 10 | 8 |
| 1-12 | The transparency provided through posting of scheduling and capacity information by major non-interstate natural gas pipelines could be helpful, if the impact of the intrastates market on the interstate market is deemed significant. | 16 | 4 | 11 | 8 |
| 1-13 | Deleted. Added to Observation 1-8. |  |  |  |  |
|  |  |  |  |  |  |
| 2. Observations and Core Issues as of April 24, 2012 :  Capacity issues including the availability and determination to use firm and interruptible capacity to support load requirements is a core issue in the interdependencies of the two markets, for both the day of and the day ahead markets.  Core Issue:  Recognizing the interdependency of the gas and electric markets in both the day of and day ahead operations, should NAESB examine:   * the relationship of pipeline service options and the electric capacity equivalent, (i.e. the character and quality of firmness of natural gas service and generator service selections is consistent with the service obligation/expectation of the generators and system operators/RTOs), and * the structure of communications to make for a better utilization of existing infrastructure and capacity. | |  |  |  |  |
| 2-1 | Firm gas transportation service customers may only experience problems on peak gas usage days, when they have not exercised their firm rights in accordance with the currently timely nomination cycle. Similarly, reliance in interruptible gas transportation service on peak gas usage days can be problematic, as it is likely that the firm gas transportation service customers exercising their rights may account for all available capacity. | 6 | 9 | 5 | 18 |
| 2-2 | A better understanding of the electric installed capacity and production requirements would take into account: (1) conditions under which generators determine to use firm fuel and capacity, (2) the capacity needed to support must serve loads, and (3) the barriers or economic forces that impede generators from contracting for services to meet must serve loads. | 6 | 11 | 5 | 16 |
| 2-3 | In RTO/ISO markets, with consideration for how plants are dispatched, the cost differentials between firm service and interruptible service should be examined, which may highlight the need for customer education and the definition of reasonable costs to support reliable service. | 21 | 18 | 3 | 5 |
| 2-4 | Variability in demand, such as unanticipated demand for natural gas or electricity, may be reflected as increased demand on gas-fired plants and other resources having short notice energy dispatch flexibility. Depending on the circumstances, costs and or prices may increase. | 4 | 11 | 2 | 18 |
| 2-5 | In RTO/ISO markets, ISOs and RTOs are not fuel biased in reviewing the generators’ ability to provide electricity. The generators’ fuel neutral requirements to meet load on a peak day would be helpful in avoiding or reducing curtailments. Some states may have policies in place that identify a preferred loading order to generation. | 21 | 4 | 3 | 11 |
| 2-6 | Market design issues are regional and may be most appropriately addressed by the ISOs and RTOs directly – an example of which could be the coordination issues for long term forward capacity electric markets. Gas service fixed cost recovery should be considered, including who holds and pays for the gas pipeline capacity needed to back up renewables or to serve normal load requirements. Product definition requirements and the form of firm service appropriate to the operational obligations may need to align with those regional requirements, although there may be common elements that would facilitate defining the service characteristics and scheduling rights needed to serve the electric sector. | 20 | 19 | 11 | 2 |
| 2-7 | [Deleted.] |  |  |  |  |
| 2-8 | After the RTO/ISO markets have estimated the firm capacity needed to meet load requirements, there are several pricing programs and markets available to them in ensuring the needed capacity commitments and dispatch flexibility. | 5 | 11 | 8 | 14 |
| 2-9 | Price signal information, which could be an input to cost recovery, is needed by generators when making economic decisions on fuels and services in support of reliable service. | 8 | 18 | 5 | 11 |
| 2-10 | Incorporating use of LNG and storage facilities as peak shaving units can provide flexibility for power generation and expands the capability of the market in meeting demand for power. | 5 | 18 | 1 | 12 |
| 2-11 | [Deleted.] |  |  |  |  |
| 2-12 | It is a given in the energy markets that adequate lead time is needed to secure any required replacement capacity and address any associated stress when the decision is made to: (1) retire a generating unit; or (2) decommit (e.g., take offline) a generating unit. | 11 | 7 | 2 | 14 |
| 2-13 | Adequate lead times to secure the replacement capacity and energy are needed in order to reliably address any stress that is introduced when generation units are retired or taken offline. | 12 | 12 | 5 | 11 |
| 2-14 | Intermittent wind and solar generation have an impact on pipeline capacity when gas-fired generation is used as a backstop to balance the system. ERCOT provides the data related to such generation in 15 minute increments to support planning. Weather conditions upwind of wind generation can be monitored to better plan for the requirements to be placed on all supply/demand responsive sources, which would include gas-fired generators and their pipelines. | 8 | 11 | 7 | 11 |
| 2-15 | NAESB WGQ Standard 1.3.80 may be extended to better facilitate the quick movement of gas and/or capacity between shippers and generators downstream of a pipeline constraint, and in doing so, provide more effective use of existing infrastructure, and more liquidity to the market in an ICE like market: 1.3.80 To the extent the Transportation Service Provider's (TSP) other scheduling requirements are met, a TSP should support the ability of a Service Requester to redirect scheduled quantities to other receipt points upstream of a constraint point or delivery points downstream of a constraint point at any of the TSP’s subsequent nomination cycle(s) for the subject gas day, at least under the same contract, without a requirement that the quantities be rescheduled through the point of constraint. | 7 | 8 | 26 | 0 |
| 2-16 | What economic decisions should be made regarding the costs assumed by the gas fired generators to back up the variable energy resources used? (Would this be similar to costs assumed for providing net load following service needed, (weather variability affecting consumption in conjunction with output of variable energy resources?) | 16 | 16 | 1 | 6 |
| 2-17 | Optimizing and servicing the growing electricity and natural gas capacity markets, and adding capacity to the markets may point to process improvement measures and structured communications, among other actions – which would necessarily involve all segments of the markets. Both natural gas and electricity capacity products in the future may need to divide into sub product characteristics, which for the electricity products, may impact the fuel service requirements- e.g. contingency reserves or peaking, net load following and the like. | 10 | 17 | 8 | 12 |
| 2-18 | To the extent that gas storage is sought to enhance reliability, need to address areas of the country where storage is geologically infeasible (perhaps via innovative above-ground storage technology for power plants or LNG needle peaking facilities or alternate fuel requirement). | 11 | 18 | 2 | 10 |
|  |  |  |  |  |  |
| 3. Observations and Core Issues as of April 24, 2012 :  Curtailment policies and practices are components of the interdependency of the two markets that impacts harmonization. Curtailment is interruption of service that has been scheduled.  Core Issue:  Should NAESB examine its existing or new standards (NAESB Std. No. 1.3.80 as an example) to support the movement of natural gas to support electric generation, and conversely, electricity needed by natural gas pipelines, to better respond in situations of potential curtailment and involuntary interruption of service, (improving capacity release program is an example)? | |  |  |  |  |
| 3-1 | Generators can introduce flexibility through the use of reserves and ancillary services, which is determined through regionally based decisions and considered part of market design. | 9 | 14 | 6 | 9 |
| 3-2 | Most pipelines already offer a park-and-loan service that uses linepack in meeting intermittent capacity requirements and provides for greater market flexibility. The flexibility provided by the use of non-ratable takes is made possible through the use of linepack. Linepack however may not be suitable to address issues that arise in peak day demand conditions for generators that have not already contracted for park-and-loan service or non-ratable takes. Taking linepack can impact the pipeline’s deliverability and cause the pipeline to shut down the unauthorized party to preserve the reliability of the system. In addition, there may well be occasions when linepack is fully utilized to support other pipeline operations. | 10 | 14 | 5 | 9 |
| 3-3 | Knowing the status on dispatchable generation and pipeline capacity can be important in decisions to modify planned outages scheduled for gas-fired facilities, transmission, and pipelines.   The information is also crucial in addressing unplanned outages.  However, it is not clear how this impacts gas-electric market harmonization,  Entities responsible for balancing electricity supply and demand need improved overall situational awareness of the potential impacts of pipeline operations.  This includes ensuring sufficient notice of scheduled outages on natural gas pipelines; balancing authority knowledge regarding those entities that can be impacted by pipeline outages; and understanding between the balancing authority and the generator regarding the impact of a pipeline outage to generator operations.  Similarly, pipeline and storage operators as well as LDC with gas generation behind their citygate need improved overall situational awareness of the potential impacts on their operations from planned or unplanned generation or transmission outages, expected changes in electricity demand, and expected changes is renewable generation and the potential impact on gas generation requirements. This includes ensuring sufficient notice of likely impacts on gas generation served by the pipeline, storage or LDC.  Nonetheless, public disclosure of information of this type could have unintended anti-competitive inter-fuel impacts. | 14 | 4 | 22 | 2 |
| 3-4 | When determining actions to be taken by electric service providers in curtailment conditions, the information on critical infrastructure is needed. That information includes electric compressor locations for those interstate and intrastate pipelines’ that use electric compressors, electric compressor locations for those LDCs that use electric compressors, gas processors’ locations that use grid or utility provided electricity to maintain operations, storage operators locations that use grid or utility provided electricity to maintain operations, other locations that require electricity to maintain flow measurement and flow management/control would be helpful. | 17 | 7 | 16 | 3 |
| 3-5 | In imminent stress conditions leading to possible curtailments of firm service or interruption of balance of power deliveries, identification of the gas-fired generators to run, when they are going to run, and the contractual rights for needed capacity is information that is helpful to the decision making entities in both markets. | 12 | 8 | 17 | 5 |
| 3-6 | The decisions made as the two markets work together should focus on how best to serve the customer and balance the cost of delivered power against the assurance that firm service is not interrupted on days experiencing peak day conditions or other stress conditions. | 13 | 8 | 7 | 11 |
| 3-7 | Supply curtailment policies at the state level may need review, as well as state commissions’ use of base gas instead of operational capacity to address shortages. Some generators may purchase gas from LDCs, and even those that purchase their own gas may be behind an LDC citygate and its transportation policies. LDCs may use end use curtailment to support residential demand. Storage factors into curtailment policies if it is behind the city gate, and may relieve constraints that could occur during peak periods. | 24 | 3 | 3 | 4 |
| 3-8 | [Deleted – combined with observation 3-3.] |  |  |  |  |
|  |  |  |  |  |  |
| 4. Observations and Core Issues as of April 24, 2012 :  Additional and more formal structure for communications of the parties in the gas and electric markets is needed, particularly for unanticipated demand situations.  Core Issue:  Should NAESB examine a more comprehensive approach to communications between the two markets and among participants in each of the markets as the communications impact the interdependency of the markets? | |  |  |  |  |
| 4-0 | As information is made available to support market transparency and decision making that enhances market interoperability, care should be taken that the needed confidentiality is preserved so that anti-competitive aspects are not introduced. The purpose of the information, who provides the information, who accesses the information, and how the information is presented, should be analyzed to ensure that the needed confidentiality is preserved. | 17 | 4 | 17 | 6 |
| 4-1 | Communication and associated procedures may support the development of decision enabling tools with respect to day-of service, that may support efforts for contingency response. | 3 | 4 | 19 | 8 |
| 4-2 | Nuclear Power Plant Communications (Report 16, Nuclear Plant Interface Coordination – Standard NUC-001-2, NERC, April 2010, http://www.nerc.com/files/NUC-001-2.pdf) could be used as a template for a more formal structure for communications. | 8 | 1 | 9 | 16 |
| 4-3 | [Deleted – replaced by 4-0.] |  |  |  |  |
| 4-4 | An information clearinghouse may be considered as a mechanism for accessing posted information and providing information to be posted, as not all electric utilities are represented by ISOs and RTOs, who as regional entities can provide a similar function to their stakeholders. | 11 | 8 | 15 | 6 |
| 4-5 | Under FERC Order No. 698, mechanisms are in place to provide information between the pipelines and gas operations group of the generators. Additional information needed is managed on an informal basis. It may be that a more formal structure would be advisable on the state of the electric system and the availability of gas from the pipelines. On peak days, notifications are sent when there are issues. It may be reasonable to provide additional structure on the communications. (Referenced also in item no. 3-8) | 10 | 2 | 21 | 2 |
| 4-6 | With an increased focus on safety and integrity management issues in both natural gas and electric markets, as infrastructure ages there may be an increase in the number of planned outages due to maintenance, which emphasizes the importance of communication process in notifications to affected parties to ensure that appropriate planning occurs. | 4 | 4 | 13 | 12 |
| 4-7 | More formalized structure for communication should extend past pipeline and plant operators to any segment of the two markets that is impacted by or makes decisions that affects the interdependency of the two markets. This broader accessibility is tempered by the protection of and limited access to commercially or operationally sensitive data. | 16 | 5 | 21 | 3 |
| 4-8 | Communications protocols may reflect the technology that was common when the protocols were adopted such that both now need updating in order to support provision of greater flexibility. | 2 | 3 | 23 | 5 |
| 4-9 | Deleted. |  |  |  |  |

| Core Issue / Observation | | | NOTES |
| --- | --- | --- | --- |
| 1 | 1 | For day-of operations, intraday nomination flexibility is key in contingency response, load following, and in backing up renewables. | FERC needs to encourage; may need to look at who can’t provide more flex given their facilities |
| Commercial - To consider the ramifications of scheduling natural gas to reflect the current electricity generation outlook would require more people and not provide a benefit. Comment - This may be true for the gas providers, but not for the electricity providers. |
| 1 | 2 | As generation units sign up for firm transportation, the bumping rules in the tariff provisions may impede the benefit of holding firm gas transportation. Added flexibility and types of gas transportation services may be needed by gas-fired power generators to meet the clearing and reliability requirements of the electric market. | Issue with pipes who cannot provide flex; how to assure generators can recover cost. Not sure wanting creating more uncertainty for IT is a bad thing. |
| Generally, electricity generators are accepting of the concept that there is no such thing as firm gas or firm gas transmission unless they own the transportation facility. |
| 1 | 3 | If a gas-fired  generator submits a generation offer before scheduling gas and the generator is not informed as to whether its generation offer is accepted until after the deadline for a  timely gas nomination, it runs the risk of being considered secondary firm, if the generator holds firm transportation, or interruptible. This exposes the generator to the risk of an obligation to generate without gas supply. On the other hand, if the gas-fired generator submits a timely nom for transportation before knowing whether its generation offer has been accepted, it runs the risk of being caught long gas supply that must be dealt with in the intraday market exposing the generator to an economic loss or penalties. | This bad outcome can be fixed if we are willing to change energy day and nom schedules; likely need FERC policy statement to encourage |
| Gas and Power Day need to be synchronized |
| Agree, but the generator knows what was done yesterday or last week and unless something big has changed, it’s likely the use will be similar to the past. |
| 1 | 4 | Scheduling flexibility can be introduced on a pipeline by pipeline basis to the pipeline’s customers. Natural gas market grid synchronization plays a role, as in multi-pipeline nominations which may cross multiple control areas, the least flexible pipeline in the chain of nominations will govern the timing of submittal and confirmation of transaction(s). | Encouragement from FERC useful |
| A minimum cross pipeline level of responsiveness should be instituted with “exceeding the standard minimum” permitted |
| Intrastate pipelines should also comply |
| Note: standards may help establish parameters governing integration of individual flexibility with the grid. |
| Standards - Scheduling Flexibility Comment - Grid Sync |
| 1 | 5 | If timelines were modified to reduce the gaps in the clearing of gas and electricity markets, a nine hour gap could be reduced to a one hour gap if the timelines were modified to an east and a west model. This would be a considerable change to the timelines supported by the pipelines – with a focus on synchronizing the clearing times and the economic day for both markets. | Policy encouragement/agreement, then standards |
| Only Policy if there is resistance to achieving this as a minimum standard for both Gas and organized Electric markets |
| Gas and Power Day need to be synchronized |
| Assume “timelines” refer to “Tariff timelines” |
| 1 | 6 | Significant differences in both natural gas and electric markets day-of service and day-ahead scheduling procedures could lead to separate considerations in drafting recommendations for the day ahead and the intra-day scheduling of energy. .For example, the completion of the electric day ahead market (which is iterative and can take approximately four hours) could be synchronized with the natural gas timely nomination cycle for scheduling energy over a majority of the hours in the peak operating period of the electric day. Added intra-day flexibility in both the electric market offers and gas scheduling might improve scheduling coordination for those hours that are not common to the same gas and electric delivery days. | Policy encouragement/agreement, then standards |
| Only Policy if there is resistance to achieving both the Day ahead and Intraday synchronizations as minimum standards for both Gas and organized Electric markets |
| 1 | 7 | The timely natural gas nomination process, which is iterative, can take from three to four hours. The hourly or intraday gas nomination process is considerably shorter as is the adjustments and changes at the margin to the decisions made in support of the timely nomination process. In some cases, gas fired generators could need to make changes in their usage more quickly than the current nomination processes or services allow. | Seems like the gas industry could move now to shorten up the process and/or add periods; are there any pipes/LDCs that can’t? |
| To the extent the intraday minimum Standard addressed above is not “perfect” the perfect should not be the enemy of the good. Additionally PL’s will see the “perfect” as service offering opportunities |
| Gas and Power Day need to be synchronized |
| 1 | 8 | There are a number of options offered by some pipelines that introduce flexibility through the use of hourly firm non-ratable takes. Ratable takes are taken on a uniform hourly basis over the day. Non-ratable takes may be spread over a shorter period. There is a tension between the timely/intraday nomination schedule as outlined in NAESB WGQ Standard No. 1.3.1 and the hourly flexibility provided by non-ratable deliveries on some pipelines and/or by use of hourly nominations, which comes into play when bumping is to be applied to preserve firm transportation service priority. Following the schedule outlined in the NAESB standards, the interruptible transportation service may have already been used to deliver the volume by the time it is determined that bumping is to be enacted to provide firm service for hourly nominations. A recent opinion issued in FERC RP11-2569-002, et al, (http://elibrary.ferc.gov/idmws/file\_list.asp?accession\_num=20120315-3006), provides some background for this observation. | This demonstrates that more periods are needed. Also, if we want generators to pay for firm they have to be able to rely on it throughout the day (policy issue). Need pipes to figure out how to add more flexibility for non-ratable takes and allow generators to recover cost. (policy issue) |
| No bump rules were developed in a past operating environment and should be changed from the standard to a service offering. No Bump rules for interruptible should be eliminated and Secondary as Primary once scheduled needs to be re-considered, again here as a service offering not as a minimum standard. |
| 1 | 9 | As more efficiencies and flexibility can be introduced into the scheduling for both markets, an outcome may be an increased market reliance on natural gas fired generation over other fuels used for electricity generation. | An observation not any of Policy, Commercial or Standard |
| 1 | 10 | a) Incentives could be designed into the natural gas scheduling and confirmation process for a wholly electronic process that would require less time to complete than the existing process which includes communications that are not fully electronic. (This could incorporate the thoughts in observation 1-2). b) If a fully electronic expedited process for natural gas nominations were implemented, it may be prudent to re-examine the bumping rules for the market participants who follow the fully electronic expedited process. The existing combination of manual and electronic process for natural gas nominations could exist as is. | Fully automated should be the minimum standard and other means of confirmation and scheduling purely service offerings that do not cause deferral or degradation of the minimum standard |
| The electricity provider’s action is all electronic and the process could be easily changed. |
| Note: Engineering and analytical work must be done to determine the amount of capacity required for every scheduling cycle so that pipelines can perform as scheduled. |
| 1-10 a) Standards - “introduce flexibility” could be addressed through Standards 1-10 b) Policy |
| 1 | 11 | Using natural gas-fired generation to back up renewables could require enhanced and additional flexibility in day-of nominations and/or no-notice service or similar services. | Need more attention paid to how much notice the gas-fired generator will get to fire up. In many cases will be insufficient time to nominate and deliver gas, in which case plant is sucking line pack. |
| An observation not any of Policy, Commercial or Standard |
| Not all renewables will require backup. Those that do will only need backup occasionally. |
| Policy - services Standards - flexibility |
| 1 | 12 | The transparency provided through posting of scheduling and capacity information by major non-interstate natural gas pipelines could be helpful, if the impact of the intrastates market on the interstate market is deemed significant. | PG&E and SoCal Gas both do this and it is incredibly helpful |
| Agreed Strongly. Policy First then Standard |
| Need State and Federal Policy coordination |
| Given court decision will require Federal legislation or action by PUCs. |
| Of little value to electrics. |
| Policy - States |
| 1 | 13 | Deleted. Added to Observation 1-8. |  |
| 2 | 1 | Firm gas transportation service customers may only experience problems on peak gas usage days, when they have not exercised their firm rights in accordance with the currently timely nomination cycle. Similarly, reliance in interruptible gas transportation service on peak gas usage days can be problematic, as it is likely that the firm gas transportation service customers exercising their rights may account for all available capacity. | An observation not any of Policy, Commercial or Standard |
| 2 | 2 | A better understanding of the electric installed capacity and production requirements would take into account: (1) conditions under which generators determine to use firm fuel and capacity, (2) the capacity needed to support must serve loads, and (3) the barriers or economic forces that impede generators from contracting for services to meet must serve loads. | The organized Electric Markets should define firm power as firm generation capacity and firm fuel – regardless of fuel source. |
| Info can be easily made available. Understanding it may be a problem. |
| 2 | 3 | In RTO/ISO markets, with consideration for how plants are dispatched, the cost differentials between firm service and interruptible service should be examined, which may highlight the need for customer education and the definition of reasonable costs to support reliable service. | Not just FT vs. IT but non-ratable takes and even more flexible park and loan, too. May also need pipeline education know how to structure services more attractively. |
| The organized Electric Markets should define firm power as firm generation capacity and firm fuel – regardless of fuel source. Policy First then commercial then standard |
| The customer is not interested. |
| Not suggesting any standard |
| 2 | 4 | Variability in demand, such as unanticipated demand for natural gas or electricity, may be reflected as increased demand on gas-fired plants and other resources having short notice energy dispatch flexibility. Depending on the circumstances, costs and or prices may increase. | Policy issue is how to recover those costs; commercial issue is how to provide/support this need for flexibility (if nothing done the plants will suck linepack and folks will not be happy on the day there is not enough) |
| An observation not any of Policy, Commercial or Standard |
| 2 | 5 | In RTO/ISO markets, ISOs and RTOs are not fuel biased in reviewing the generators’ ability to provide electricity. The generators’ fuel neutral requirements to meet load on a peak day would be helpful in avoiding or reducing curtailments. Some states may have policies in place that identify a preferred loading order to generation. | An observation not any of Policy, Commercial or Standard |
| 2 | 6 | Market design issues are regional and may be most appropriately addressed by the ISOs and RTOs directly – an example of which could be the coordination issues for long term forward capacity electric markets. Gas service fixed cost recovery should be considered, including who holds and pays for the gas pipeline capacity needed to back up renewables or to serve normal load requirements. Product definition requirements and the form of firm service appropriate to the operational obligations may need to align with those regional requirements, although there may be common elements that would facilitate defining the service characteristics and scheduling rights needed to serve the electric sector. | ISOs/RTOs however have to deal with pipelines that cross control area boundaries so coordination among ISOs/RTOs should not be avoided |
| The organized Electric Markets should define firm power as firm generation capacity and firm fuel – regardless of fuel source. Policy First then commercial then standard |
| Policy followed by Standards |
| 2 | 7 | [Deleted.] |  |
| 2 | 8 | After the RTO/ISO markets have estimated the firm capacity needed to meet load requirements, there are several pricing programs and markets available to them in ensuring the needed capacity commitments and dispatch flexibility. | but not enough on the gas side and that’s what we need to fix as we begin to rely so much more heavily on gas-fired generation |
| The organized Electric Markets should define firm power as firm generation capacity and firm fuel – regardless of fuel source. Policy First then commercial then standard |
| Appears to be power related ? |
| NERC |
| 2 | 9 | Price signal information, which could be an input to cost recovery, is needed by generators when making economic decisions on fuels and services in support of reliable service. | what kind of price information? |
| The organized Electric Markets should define firm power as firm generation capacity and firm fuel – regardless of fuel source. Policy First then commercial then standard |
| There are rules on how soon this information can be made commercially available. It is not likely that these rules can be changed. |
| 2 | 10 | Incorporating use of LNG and storage facilities as peak shaving units can provide flexibility for power generation and expands the capability of the market in meeting demand for power. | Policy issue about cost recovery but otherwise commercial investment can provide |
| An observation not any of Policy, Commercial or Standard |
| No suggested change or action |
| 2 | 11 | [Deleted.] |  |
| 2 | 12 | It is a given in the energy markets that adequate lead time is needed to secure any required replacement capacity and address any associated stress when the decision is made to: (1) retire a generating unit; or (2) decommit (e.g., take offline) a generating unit. | An observation not any of Policy, Commercial or Standard |
| A states rights issue. |
| 2 | 13 | Adequate lead times to secure the replacement capacity and energy are needed in order to reliably address any stress that is introduced when generation units are retired or taken offline. | Minimum notice of retirement should be a standard. Off-line should be dealt with in Intra-day markets |
| 2 | 14 | Intermittent wind and solar generation have an impact on pipeline capacity when gas-fired generation is used as a backstop to balance the system. ERCOT provides the data related to such generation in 15 minute increments to support planning. Weather conditions upwind of wind generation can be monitored to better plan for the requirements to be placed on all supply/demand responsive sources, which would include gas-fired generators and their pipelines. | 2-10 may help, but need policy recognition that this is a problem and commercial/standard reformation to remedy. How can pipelines or LDCs deliver more gas to specific locations on 15 mins notice? |
| An observation not any of Policy, Commercial or Standard |
| Info (in ERCOT) can be made available to NG pipelines. |
| Informational standards |
| No suggested change or action required |
| 2 | 15 | NAESB WGQ Standard 1.3.80 may be extended to better facilitate the quick movement of gas and/or capacity between shippers and generators downstream of a pipeline constraint, and in doing so, provide more effective use of existing infrastructure, and more liquidity to the market in an ICE like market: 1.3.80 To the extent the Transportation Service Provider's (TSP) other scheduling requirements are met, a TSP should support the ability of a Service Requester to redirect scheduled quantities to other receipt points upstream of a constraint point or delivery points downstream of a constraint point at any of the TSP’s subsequent nomination cycle(s) for the subject gas day, at least under the same contract, without a requirement that the quantities be rescheduled through the point of constraint. | With policy and commercial agreement could extend the standard |
| Agree this helps. However, it is really only with respect to Intra-day |
| Policy - Capacity Release Rules |
| 2 | 16 | What economic decisions should be made regarding the costs assumed by the gas fired generators to back up the variable energy resources used? (Would this be similar to costs assumed for providing net load following service needed, (weather variability affecting consumption in conjunction with output of variable energy resources?) | We are dreaming if we think the gas-fired generators are holding firm capacity so they can operate to back up intermittent renewables. |
| The organized Electric Markets should define firm power as firm generation capacity and firm fuel – regardless of fuel source. Policy First then commercial then standard |
| I personally think this is overplayed. |
| No suggested change or action required |
| 2 | 17 | Optimizing and servicing the growing electricity and natural gas capacity markets, and adding capacity to the markets may point to process improvement measures and structured communications, among other actions – which would necessarily involve all segments of the markets. Both natural gas and electricity capacity products in the future may need to divide into sub product characteristics, which for the electricity products, may impact the fuel service requirements- e.g. contingency reserves or peaking, net load following and the like. | seems like process improvements that can be done now can be commercially-driven but beyond that need some policy inspiration/agreement to support. Maybe this one isn’t specific enough to do much with. |
| An observation not any of Policy, Commercial or Standard |
| Policy followed by Commercial |
| 2 | 18 | To the extent that gas storage is sought to enhance reliability, need to address areas of the country where storage is geologically infeasible (perhaps via innovative above-ground storage technology for power plants or LNG needle peaking facilities or alternate fuel requirement). | Combine with 2-10? |
| An observation not any of Policy, Commercial or Standard |
| No suggested action or change required |
| 3 | 1 | Generators can introduce flexibility through the use of reserves and ancillary services, which is determined through regionally based decisions and considered part of market design. | RTOs/ISOs can modify the market design to include but generators cannot do this unilaterally because they need market design to assure cost recovery |
| An observation not any of Policy, Commercial or Standard |
| Could structure natural gas markets in a similar way – i.e. with an ancillary service type market. |
| 3 | 2 | Most pipelines already offer a park-and-loan service that uses linepack in meeting intermittent capacity requirements and provides for greater market flexibility. The flexibility provided by the use of non-ratable takes is made possible through the use of linepack. Linepack however may not be suitable to address issues that arise in peak day demand conditions for generators that have not already contracted for park-and-loan service or non-ratable takes. Taking linepack can impact the pipeline’s deliverability and cause the pipeline to shut down the unauthorized party to preserve the reliability of the system. In addition, there may well be occasions when linepack is fully utilized to support other pipeline operations. | Issue is how we assure adequate line pack (and is line pack cheapest way to assure access on short notice, or on-site above-ground storage at generating facility or what?) |
| Like the intraday minimum Standard addressed above. There should be a minimum standard for intra-day or cross day PAL. However such minimum standard will not be “perfect”. Thus, the perfect should not be the enemy of the good. Additionally PL’s will see the “perfect” as service offering opportunities |
| 3 | 3 | Knowing the status on dispatchable generation and pipeline capacity can be important in decisions to modify planned outages scheduled for gas-fired facilities, transmission, and pipelines.   The information is also crucial in addressing unplanned outages.  However, it is not clear how this impacts gas-electric market harmonization, Entities responsible for balancing electricity supply and demand need improved overall situational awareness of the potential impacts of pipeline operations. This includes ensuring sufficient notice of scheduled outages on natural gas pipelines; balancing authority knowledge regarding those entities that can be impacted by pipeline outages; and understanding between the balancing authority and the generator regarding the impact of a pipeline outage to generator operations.  Similarly, pipeline and storage operators as well as LDC with gas generation behind their citygate need improved overall situational awareness of the potential impacts on their operations from planned or unplanned generation or transmission outages, expected changes in electricity demand, and expected changes is renewable generation and the potential impact on gas generation requirements. This includes ensuring sufficient notice of likely impacts on gas generation served by the pipeline, storage or LDC. Nonetheless, public disclosure of information of this type could have unintended anti-competitive inter-fuel impacts. | Need policy decision on what information and who shares. Communication needs to also cover anticipated weather and/or changes in weather that could affect operations. This information may be very helpful in crafting policies, services, and implementing standards. Pipelines generally post maintenance information now and might well be useful to look at much we can actually share now without policy guidance. |
| We will know the unintended impacts as we see them. Information sharing should be a standard. Applicable to all fuel types. |
| Policy followed by Standards |
| This commercially sensitive info will not be made available without a regulatory order. |
| Policy - Requiring generators to share info with others besides transportation providers |
| 3 | 4 | When determining actions to be taken by electric service providers in curtailment conditions, the information on critical infrastructure is needed. That information includes electric compressor locations for those interstate and intrastate pipelines’ that use electric compressors, electric compressor locations for those LDCs that use electric compressors, gas processors’ locations that use grid or utility provided electricity to maintain operations, storage operators locations that use grid or utility provided electricity to maintain operations, other locations that require electricity to maintain flow measurement and flow management/control would be helpful. | If 3-3 is overall situational awareness and 3-4 applies to imminent curtailment, need policy decision on what more information should be shared here and who shares. |
| Where gas needs electricity and electricity needs gas to provide service, they both should have the same level of service vis a vis “curtailment” as human needs does. |
| Note this impacts electric retail distribution companies in selecting load interruptions |
| Policy followed by Standards |
| Sensitive information available only on regulatory order. |
| Information standards? |
| Standards - NERC |
| 3 | 5 | In imminent stress conditions leading to possible curtailments of firm service or interruption of balance of power deliveries, identification of the gas-fired generators to run, when they are going to run, and the contractual rights for needed capacity is information that is helpful to the decision making entities in both markets. | seems like this should be subsumed into 3-4? |
| An observation not any of Policy, Commercial or Standard |
| Policy followed by Standards |
| Sensitive information available only on regulatory order. |
| Information standards? |
| 3 | 6 | The decisions made as the two markets work together should focus on how best to serve the customer and balance the cost of delivered power against the assurance that firm service is not interrupted on days experiencing peak day conditions or other stress conditions. | suppose there is a policy issue about willingness to pay to avoid interruption |
| A Principal to guide Policy and Standards development |
| Sensitive information available only on regulatory order. |
| No suggested action or change required |
| 3 | 7 | Supply curtailment policies at the state level may need review, as well as state commissions’ use of base gas instead of operational capacity to address shortages. Some generators may purchase gas from LDCs, and even those that purchase their own gas may be behind an LDC citygate and its transportation policies. LDCs may use end use curtailment to support residential demand. Storage factors into curtailment policies if it is behind the city gate, and may relieve constraints that could occur during peak periods. | This is the key issue that I wouldn’t expect falls to NAESB to resolve but instead to highlight it for action by the states. |
| Where gas needs electricity and electricity needs gas to provide service, they both should have the same level of service vis a vis “curtailment” as human needs does. |
| Policy - States |
| 3 | 8 | [Deleted – combined with observation 3-3.] |  |
| 4 | 0 | As information is made available to support market transparency and decision making that enhances market interoperability, care should be taken that the needed confidentiality is preserved so that anti-competitive aspects are not introduced. The purpose of the information, who provides the information, who accesses the information, and how the information is presented, should be analyzed to ensure that the needed confidentiality is preserved. | See comments on 3-3 and 3-4 |
| We will know the unintended impacts as we see them. Information sharing should be a standard. Applicable to all fuel types. |
| 4 | 1 | Communication and associated procedures may support the development of decision enabling tools with respect to day-of service, that may support efforts for contingency response. | Principal to guide Standard development |
| 4 | 2 | Nuclear Power Plant Communications (Report 16, Nuclear Plant Interface Coordination – Standard NUC-001-2, NERC, April 2010, http://www.nerc.com/files/NUC-001-2.pdf) could be used as a template for a more formal structure for communications. | Policy - See 3-3 notes |
| 4 | 3 | [Deleted – replaced by 4-0.] |  |
| 4 | 4 | An information clearinghouse may be considered as a mechanism for accessing posted information and providing information to be posted, as not all electric utilities are represented by ISOs and RTOs, who as regional entities can provide a similar function to their stakeholders. | Could be included as part of the policy encouraging/allowing greater information sharing |
| Don’t think this is a good idea. |
| Suggest pursue this after communication standards in place |
| 4 | 5 | Under FERC Order No. 698, mechanisms are in place to provide information between the pipelines and gas operations group of the generators. Additional information needed is managed on an informal basis. It may be that a more formal structure would be advisable on the state of the electric system and the availability of gas from the pipelines. On peak days, notifications are sent when there are issues. It may be reasonable to provide additional structure on the communications. (Referenced also in item no. 3-8) | Probably needs more formality because of instances where folks have not realized such information sharing was needed; link to 3-3 and 3-4 |
| Policy followed by Standards |
| 4 | 6 | With an increased focus on safety and integrity management issues in both natural gas and electric markets, as infrastructure ages there may be an increase in the number of planned outages due to maintenance, which emphasizes the importance of communication process in notifications to affected parties to ensure that appropriate planning occurs. | A Principal to guide Standard development |
| 4 | 7 | More formalized structure for communication should extend past pipeline and plant operators to any segment of the two markets that is impacted by or makes decisions that affects the interdependency of the two markets. This broader accessibility is tempered by the protection of and limited access to commercially or operationally sensitive data. | Policy followed by Standards |
| 4 | 7 | More formalized structure for communication should extend past pipeline and plant operators to any segment of the two markets that is impacted by or makes decisions that affects the interdependency of the two markets. This broader accessibility is tempered by the protection of and limited access to commercially or operationally sensitive data. | Policy followed by Standards |
| 4 | 8 | Communications protocols may reflect the technology that was common when the protocols were adopted such that both now need updating in order to support provision of greater flexibility. | Individual companies will need to make the actual investment, but it does seem like we might gain some increase in flexibility and communication by doing some updating. Some of that might result require some standards updating if any were limiting. |
| No suggested change action required |
| 4 | 9 | Deleted. |  |