**via posting & email**

**TO:** NAESB Gas Electric Harmonization (GEH) Committee and posting for interested parties

**RE:** Draft Outline of Analysis of Commercial Observations – Edited June 8, 2012

**DATE:** June 8, 2012

Dear NAESB GEH Committee,

At our last GEH meeting on May 16, we decided to review the results of the survey which was amended and posted on May 24. We agreed to look at the observations that were defined as of primary or secondary interest for policy items, commercial items or potential standards development.

The following report, drafted initially on June 1, 2012 and reviewed and edited by the group on June 8 in the Baltimore meeting, provides the observations that were defined as being either primarily or largely commercial. The observations have been consolidated for ease of reading, and the consolidated items have been cursorily reviewed for:

* Practices in existence today that address the underlying issues, but do now lend themselves to uniform market applicability
* Practices that are primarily adopted regionally or by specific pipeline, are distinct, and are unlikely to be extended to other regions or to all pipelines.

and the template provides for:

* Observations that lead to a confidence that pipeline-specific or regional commercial practices have made significant progress to address gas-electric harmonization issues
* Framing issues that put the observations in context, in particular recognizing the limitations of commercial initiatives that may encounter policy constraints.

This work paper, along with the work papers developed for policy issues and standards development recommendations, will provide the foundation for the recommendations to be presented to the Board of Directors in September.

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**OPENING STATEMENT ITEMS:**

* Commercial issues related to gas-electric market harmonization may eventually lead to standards development where there is broad enough attractiveness and a need for the predictability of standardization, but it is the opinion of the committee that at this time standards development is not necessary in the areas addressed here. As such a “tipping point” should be reached – a recognition in the markets that more uniformity provided by standards would be beneficial.
* Regional and pipeline-specific arrangements may not lend themselves to the broader uniformity that is provided when creating standards with regional choices.
* Commercial issues that are specific to individual pipeline systems, ISOs and RTOs, or commercial arrangements through bilateral agreements with specific generation owners may be best addressed by the stakeholders of those situations, rather than extending the analysis of the issues to a much broader audience.
* A fundamental underpinning of commercial solutions is that they are inherently bilateral, wherein neither side of the transaction is compelled to agree. This balance of rights and discretion among generators, organized markets, the pipelines that serve them, and the other customers dependent upon those pipelines must be maintained for commercial solutions to work. Departures from that balance can and should only be considered or addressed in the policy arena, outside of NAESB’s purview.
* As commercial practices are more broadly accepted, they may be the basis for standards development either to provide conformity across the country or to provide conformity with regional or operational differences identified by the interested stakeholders. However, again, such standardization cannot move forward if it involves an involuntary shifting of relative rights until there is a prior policy determination.
* As commercial practices are put in place to support harmonization of the two markets at a regional level, should existing standards inhibit the adoption of the practices, then standards should be reviewed to determine if changes are needed.
* As observations are listed for each of the consolidated issues, it can be seen that there is an overlap across policy issues, commercial issues and standards development recommendations. These overlaps are to be expected as the observations are multi-faceted, in which there may be standards development recommended for part of an observation at the same time that there are considerations for policy direction or regional commercial practices for other parts of an observation.

**COMMERCIAL PRACTICES ISSUES:**

1. Flexibility in the interactions of the natural gas and electric markets is used now to meet customer needs. These services reflect the specific operational or regional requirements of the pipelines and pipeline customers and would probably not be candidates for standards development. Additional services can be introduced and implemented through services offered by pipelines to their respective customers.

* This recommendation incorporates observations noted for: 1.1, 1.11, 2.4, 2.10, 2.14, 2.15, 3.1, 3.2
* Pipeline no-notice and park and loan services; plans for addressing contingency response and unanticipated variability in demand; incorporating the use of LNG and storage for flexibility; pipeline services that could be designed to offer quick movement of gas or capacity between shippers and generators downstream of constraints are examples of regionally based or commercial/bilateral agreements that provide flexibility in the markets, are currently implemented regionally to address regional needs, but are wholly or in part not suitable for standards development.
* Framing issues for commercial practices that introduce flexibility but are not suitable for broader market applications are:
  + As services are offered, changes may be required to existing standards.

2. Use of the natural gas firm transportation service to support power generation may require specifically designed transportation services to meet market clearing and reliability requirements in the electric market.

* This recommendation incorporates observations noted for: 1.2, 2.1
* Commercial practices and services offered by pipelines to generators, addressing specific generator needs to utilize their firm capacity outside of the timely nomination cycle, could address market clearing issues. These practices are regionally defined and do not have an applicability to a more broader scale that would be envisioned for standards development.

3.. Natural gas pipeline capacity growth that is needed to meet gas fired power generation commitments is determined through commercial practices of the pipelines and generators with interaction to ensure that reliability requirements are met.

* This recommendation incorporates observations noted for: 2.13, 2.17
* The commercial practices and reliability requirements are designed to address stress that can be introduced when generation units are retired or taken offline. Standards development is generally not appropriate, other than possibly to provide information for decision making and structured communication, and to provide granularity in electricity capacity products sub-product characteristics..

4. Services can be and have been provided to avoid potential gas-fired power generation curtailments resulting from the complexities introduced when the timely nomination cycle is at odds with generation timing, when the economics of decision making may to lead the selection of interruptible service (which by definition may be interrupted) and when nominations cross multiple pipelines.

* This recommendation incorporates observations noted for: 1.3, 1.4, 2.2, 2.3, 2.6, 2.8, 2.9, 2.16, 2.18
* Under state curtailment plans, there is a risk that generators may have an obligation to generate without the ability to receive the necessary natural gas supply. This cycle may be addressed in individually tailored services. Similarly, the complexities presented in (a) nominations across multiple pipeline and control areas; (b) economic decisions considering the cost differential for services and the consequent potential impacts on reliability; and (c) the use of storage or LNG to support gas-fired power generation, may all be addressed in specifically tailored services or agreements supporting the regional or commercial practices of the pipelines and generators.
* As a clarification, “curtailment” in natural gas transportation perspective occurs when it becomes necessary to cut firm transportation service, not interruptible service. When interruptible service is cut, it is considered interrupted – not curtailed.
* Fundamental reasons why standards development in this area should not be undertaken:
  + It is not appropriate to develop standards that would mandate contracting for firm transportation.

**Below please find the list of observations where if noted in green indicate that they are primary, and in yellow indicate that they are secondary for commercial related issues that at this time would not lead to standards development. These observations have been consolidated, and reviewed in regard to**

* Practices in existence today that address the underlying issues, but do now lend themselves to uniform market applicability
* Practices that are primarily adopted regionally or by specific pipeline, are distinct, and are unlikely to be extended to other regions or to all pipelines.
* Observations that lead to a confidence that pipeline-specific or regional commercial practices have made significant progress to address gas-electric harmonization issues, and
* Framing issues that put the observations in context, in particular recognizing the limitations of commercial initiatives that may encounter policy constraints

|  | |  | **COMMERCIAL - PRIMARY and SECONDARY CORE ISSUES & OBSERVATIONS** | Policy | **Commercial Primary** | **Commercial Secondary** | 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. | 10 |  | 14 | 22 | 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. | 15 | 19 |  | 17 | 3 |
| 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. | 12 | 13 |  | 12 | 12 |
| 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). | 9 |  | 12 | 21 | 11 |
| 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. | 16 |  | 14 | 14 | 12 |
| 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. | 7 |  | 12 | 7 | 22 |
| 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. | 12 |  | 12 | 8 | 18 |
| 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. | 25 |  | 21 | 3 | 8 |
| 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. | 5 |  | 13 | 3 | 23 |
| 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. | 25 |  | 23 | 15 | 3 |
| 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 |  | 15 | 8 | 18 |
| 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. | 10 | 22 |  | 7 | 13 |
| 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. | 7 | 22 |  | 1 | 16 |
| 2 | | 13 | Adequate lead times to secure the replacement capacity and energy is needed in order to reliably address any stress that is introduced when generation units are retired or taken offline. | 14 |  | 13 | 7 | 14 |
| 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. | 11 |  | 13 | 11 | 14 |
| 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. | 8 |  | 11 | 31 | 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?) | 20 |  | 19 | 2 | 7 |
| 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. | 14 | 18 |  | 12 | 13 |
| 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). | 14 | 20 |  | 2 | 14 |
| 3. 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. | 11 | 17 |  | 7 | 11 |
| 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 | 17 |  | 5 | 13 |
| 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. | 30 |  | 6 | 5 | 5 |