

DRAFT EISPC STAFF COMMENTS REGARDING THE EIPC SCOPE OF WORK - 9/July/2013

At the outset, EIPC's ambitious Scope of Work would be very helpful to the electric and natural gas industries, in both the near-term and longer term, if the project objectives can be achieved. An example of short-run benefits is the better understanding of the operational complexities in coordinating electric and natural gas supply. In the longer-term, the EIPC study could serve as a foundation for new generation electric and natural gas planning tools and processes that would facilitate improving coordination between the two industries. In both the short and the longer-term, the EIPC study should be helpful in detailing what we don't know and what we should know. The second observation is that it is in EIPC's and EISPC's mutual interest to collaborate on some of the work that is over-lapping.

Common Baseline Infrastructure:¹

It would seem to be beneficial to have a common foundation for the baseline infrastructure. This would make direct comparisons between the EIPC and EISPC Studies easier and more efficacious. While EISPC understands it is more efficient for EIPC to develop the baseline infrastructure,² EISPC believes there are advantages to having this done in a collaborative manner; provided it is done expeditiously and with due regard to CEII and other confidential information.

For reasons of credibility and accuracy, collaborating on the baseline infrastructure would benefit both the EISPC and EIPC study. Particularly with the participation of the various elements of the natural gas industry as contemplated by Section 6.7 - 6.10 of the EIPC Scope of Work, collaboration would provide insights and information that might not be possible or efficiently collected absent the full participation of the natural gas industry (e.g., the pipelines, producers, LDCs, and energy intensive industrial users that may switch to natural gas). EISPC believes that its insights and those of other members of the SSC would benefit the development of the baseline infrastructure (e.g., load growth, demand response...)³. Some of the recently completed and on-going EISPC Studies and Whitepapers may also provide useful information that would benefit the EIPC and EISPC Studies. In short, the participants in this process bring a wealth of expertise, experience, and information that ought to be fully utilized in the conduct of both the EISPC and EIPC Studies.

Because of the familiarity of EISPC and the SSC and to the extent appropriate, EISPC's preference is to use the information from the three transmission build-outs in constructing the baseline infrastructure.

1. Develop a baseline assessment that includes descriptions of the natural gas-electric system interface(s) and how they impact each other. Utilizing public information and other appropriate sources of data, compile a baseline of the natural gas and electric system interface(s) within each PPA Area and the entire Study Region (SOW Sections 4 & 5). Assess the specific drivers of the planning process for each of the major pipelines/LDCs in the Study Region, as well as the current level of interaction, at an operational and planning level, between the bulk electric and natural gas systems. TARGETS Scope of Work page 3, Section 5.2 pages 5-6.

² No later than 10/28/13, the PPAs shall deliver to the Consultant their baseline (SOW Subsection 4.1, 4.2, and 4.3) of the existing natural gas-electric system interface. The Consultant will review and comment on the PPA Inputs by 11/18/13. The PPAs shall review the Consultants comments and if applicable, subsequently modify their PPA Inputs accordingly. The PPAs and the Consultant shall agree and approve the final PPA Inputs by 12/02/13 Scope of Work page 4.

³ The major assumptions pertaining to the existing and future PPA Area; demand growth, existing/future capacity, transmission expansion, demand response, renewable penetration, imports/exports, and any other relevant assumptions (SOW Sub-Section 6.2). Scope of Work page 4. See also Section 6 page 7.

Changes necessitated by better and more information is appropriate but it would be helpful to know the rationale and ramifications of the changes. Stan Hadley (ORNL) and others are “mining” the information from Phase I and II that may also be useful to both Studies. From the perspective of the EISPC Study, the advice of EIPC in development of the longer-term (beyond the 10 year planning horizon contemplated by the EIPC Scope of Work infrastructure would be very helpful.

Ten Year Planning Horizon

Particularly since EIPC is going to do a hydrological study that is very complex, EISPC understands their concerns about going beyond 10 years.⁴ However, the 10 year planning horizon doesn’t seem likely to capture the more complete consequences of stringent carbon and other environmental regulations on the current generating fleet as well as potential new generation, the integration of wind resources that may entail additional natural gas generation to firm-up these resources, the need to add generation for reliability reasons, to include increased demand for natural gas by energy-intensive end-users that may convert generation to natural gas, and to reflect the potential for increased use of natural gas by other types of customers. To this end, it would seem beneficial to both the EIPC and EISPC Studies to give on-going consideration on how to integrate the information and results of the two Studies to the extent possible.

Sensitivities

As discussed in Section 6.6 of the EIPC Scope of Work, collaboration on the *potential* sensitivities may benefit both the EIPC and EISPC studies. Again, having an appropriate degree of commonality may facilitate comparisons and consistency of analysis.

What happens if EIPC doesn’t have the money to go forward with the types of sensitivities, the analysis of reliability ramifications, or the desired hydrological analysis?⁵ All of these concerns would argue for collaboration to enable scarce funds to be used to maximum benefit for both the EIPC and EISPC Studies.

Geographic Scope

Because the topology of the natural gas and electric industry is likely to change over the next several years to, among other things, account for changes in supply due to shale plays and demand and the ramifications of stringent environmental regulations, the EIPC Study *may* benefit from some reliance on

⁴ By each PPA Area and for the overall Study Region, evaluate the capability of the natural gas system(s) to supply the individual and aggregate fuel requirements from the electric power sector **over a five and ten year study horizon** under a Reference Gas Demand Case and a High Gas Demand Case. Subject to funding availability, the Consultant will also provide a separate price quote to evaluate the same for a Low Gas Demand Case and other potential sensitivities which the PPAs or the SSC and PPA Stakeholder Groups may choose to exercise. TARGETS Scope of Work page 3

⁵ ... *Subject to funding availability, the Consultant will also provide a separate price quote to evaluate the same for a Low Gas Demand Case and other potential sensitivities which the PPAs or the SSC and PPA Stakeholder Groups may choose to exercise.* By each PPA Area and for the overall Study Region, identify contingencies on the natural gas system that could adversely affect electric system reliability and vice versa. This contingency analysis shall be performed at the five year study horizon. *Subject to funding availability, the Consultant will also provide a separate price quote to evaluate the same type of contingency analysis at the ten year horizon or for other optional sensitivities which the PPAs or the SSC and PPA Stakeholder Groups may choose to exercise.* TARGETS Scope of Work page 3

the EISPC analysis to represent areas of the Eastern Interconnection and Nation that are not in the EIPC Scope of Work⁶. Similarly, EISPC's Study would benefit from EIPC's expertise to incorporate potential long-term changes in the electric infrastructure. EISPC hopes that it would still be possible to incorporate information (and participation) from all regions in the Eastern Interconnection, the Western Interconnection (for natural gas system in particular), and ERCOT.

Other Issues / Comments / Concerns

EISPC recognizes the need for a cut-off of the size of generating units that are included in the baseline infrastructure. However, 100 MW⁷ may be too high and might benefit from a discussion with the SSC (including the energy-intensive industrial users that are contemplating a switch to natural gas).

Longer-term, what are the potential benefits and derivative effects of the EIPC study for:

- State policymakers to fulfill their statutory obligations to ensure reliable and low-cost natural gas and electricity for all types of customers,
- Federal policymakers to ensure reliable electric and natural gas systems,
- The electric and natural gas industries to meet their obligations to customers and their investors,
- and others such as the development of cost-effective resources that may entail renewable resources, demand response, customer-owned generation, energy storage, and other?

If the EIPC Study is successful, it should provide guidance to electric utilities and the natural gas industries on how to improve their operational coordination and foster a better understanding of the two industries. In the longer-term, it may help to establish joint natural gas and electric industry planning activities; with due regard to CEII, proprietary information, and without violating antitrust type concerns.

EISPC also hopes that a successful EIPC Study would advance the development of a new generation of planning tools and processes such as greater incorporation of risk analysis into planning of electric and natural gas infrastructure (to complement deterministic methods), co-optimization of electric and natural gas infrastructure, a more robust assessment of Resource Adequacy, development of a Gas Flow and Power Flow model that could show how the two systems work together, and improved data bases for both the natural gas and electric industry, and improved abilities for the natural gas and electric industry to engage in long-term planning without compromising competitive concerns.

⁶ The six PPAs are: ISO New England (ISO-NE), New York ISO (NYISO), PJM Interconnection (PJM), Ontario's Independent Electricity System Operator (IESO), the Midwest ISO (MISO), including the Entergy system, and the Tennessee Valley Authority (TVA). They are all members of the 26-member Eastern Interconnection Planning Collaborative (EIPC). The Non-Study Region means a geographic area adjacent to or bordering the Study Region. This Non-Study Region may extend beyond international, state or provincial borders, and is meant to characterize the areas within Mexico, United States and Canada that are not participating within this Gas-Electric System Interface Study. However, natural gas facilities located in the Non-Study Region will be considered as being part of the Study Region, if those natural gas facilities are critical to supplying natural gas to a gas facility located within a PPA Area or Study Region. TARGETS Scope of Work page 3

⁷ Identification of all gas capable (gas-only and dual fuel) generating units which are 100 MW or greater (or to the extent desired by a PPA, lower capacity units) connected to each gas pipeline, and 50 MW or greater located within a gas LDC system. (Scope of Work page 4)