

# Eastern Interconnection Planning Collaborative's (EIPC) Gas -Electric System Interface Study

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*Project Update*

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*\* All dates are identified as either actual or preliminary*

# History

- The New York ISO originally developed a Statement of Work (SOW) to study the natural gas–electric interface and infrastructure within New York State; ISO-NE, PJM, MISO, TVA, and Ontario were also interested in performing similar studies
- At the same time, the U.S. DOE recognized a gap in its review of the EIPC Reports on Phase 1 and 2 of the DOE funded eastern interconnection transmission analysis work, which prompted them to extend the interconnection studies grant to include further analysis of the interaction of the natural gas and electric industries
- Many of the alternative futures studied within Phase 1 and 2 of the EIPC analysis involved retiring coal-fired power plants and replacing them with natural gas-fired generation
- During the period of the EIPC study, noteworthy changes have occurred regarding the natural gas markets that would result in an increased dependence on new gas-fired resources
  - Recent shale gas development and changes in location of new gas supplies are also a factor



# PPAs / Study Region

- The six Participating Planning Authorities (PPAs) are a subset of EIPC members that include:
  - 1 ISO New England (ISO-NE)
  - 2 New York ISO (NYISO)
  - 3 PJM Interconnection (PJM)
  - 4 Midcontinent ISO (MISO) (including the MISO South/Entergy system)
  - 5 Tennessee Valley Authority (TVA) Areas
  - 6 Ontario's Independent Electricity System Operator (IESO)
- The Study Region encompasses the major natural gas supply, pipelines, storage and distribution systems and regional electric systems serving the PPAs. In metropolitan areas, the inclusion of local gas distribution companies (LDCs) is an important consideration because such a large number of generating plants are served directly off the LDC systems in those areas

# PPA Stakeholders / Stakeholder Steering Committee (SSC)

- The PPA Stakeholder Groups are the assembly of stakeholders created by each PPA to provide input to the PPA on its activities and to fulfill any requirements it may have under FERC Order No. 890. Since this Gas-Electric System Interface Study will be performed in a transparent and collaborative manner, the study processes is open to participation by state and federal officials, representatives from ISOs, RTOs, electric utilities, transmission and generation owners, end-users and relevant stakeholder bodies or non-government organizations (NGO's), including appropriate entities in Canada. Representatives from the North American natural gas industry are also included
- To meet these aforementioned requirements, the EIPC previously established the Stakeholder Steering Committee (SSC), a multi-constituency steering committee, to provide strategic guidance on the scenarios and sensitivities to be modeled, suggest modeling tools, suggest key assumptions for the scenarios and sensitivities, and other activities. The EIPC and SSC Charter and its membership and activities are posted on the EIPC web site which is located at: <http://www.eipconline.com/>

# Study Targets

The four Targets of the Statement of Work (SOW) are:

- Target 1 - Develop a baseline of the electric and natural gas systems, including their planning, operation and interactions
- Target 2 - Determine the adequacy of the regional gas systems to satisfy generation needs over a 5- and 10-year horizon
- Target 3 - Identify contingencies on the gas and electric systems that could negatively affect the other
- Target 4 - Examine the pros and cons of dual fuel capability for generation versus expanding gas system infrastructure



# EIPC Project Administration Timeline *(All dates are actual)*

- 1 The EIPC advised the SSC of the continuation of the Phase II work with the Gas-Electric System Interface Study on June 7, 2013
- 2 The PPA Stakeholder Groups were introduced to the SSC and its process for interaction with the PPA Stakeholder Groups via two Webinars held on June 20 and 26, 2013
  - Reconvene the SSC and review its membership
  - Update the final SSC Roster by September 30, 2013
- 3 The EIPC invites comments from the SSC and PPA Stakeholder Groups on the draft SOW – comments were due by July 12, 2013
- 4 The SSC structure was adjusted to include natural gas industry representation on July 27, 2013
- 5 The PPAs compiled stakeholder feedback on the proposed SOW thru August 2, 2013

# EIPC Project Administration Timeline – cont'd

*(All dates are actual)*

- 6 Prior to issuance of the Request for Proposals (RFP), the PPAs review, post and incorporate appropriate Stakeholder comments into a revised SOW
- 7 The PPAs finalized the Project Management Plan (PMP) and SOW by August 2, 2013
- 8 The RFP process was initiated with the publishing of the final Statement of Work, along with the formal announcement of the RFP on the EIPC website, an EIPC Media Release, and advertisements in both Platts MW Daily and Gas Daily publications on August 3, 2013
- 9 Responses to the RFP were required to be completed by midnight on August 30, 2013
- 10 The contract was awarded to Levitan & Associates, Inc. (LAI) of Boston, MA



# EIPC Project Update – August 11, 2014

## Target 1

- Complete - The final draft report and exhibits have been posted to the EIPC website, along with the matrix of comments from stakeholders

## Target 2

- The AuroraXMP Model (EPIS, Inc.) is being used for the production simulations of the electric sector to develop power plant fuel consumption
- The GPCM Model (RBAC, Inc.) is being used to develop the gas sector supply/demand balances and identify the gas transmission constraints
- The initial draft Target 2 report was posted to the EIPC website on June 20, 2014 and discussed at the SSC meeting in Atlanta on June 25-26, 2014
- Written stakeholder comments were due by mid-July and will be reviewed for incorporation within the updated Target 2 report - to be distributed to stakeholders by September 30, 2014

# EIPC Project Update – August 11, 2014 – cont'd

## Target 3

- LAI has reviewed the Form 567 materials provided by FERC, and begun incorporating them into the WinFlow hydraulic models
- The CPCN Exhibit G FERC request has not yet been delivered
- LAI has developed a pipeline-level contingency list for each PPA based on prior modeling efforts and locations with a high concentration of gas-fired generation

## Target 4

- Work is continuing on the various Target 4 work tasks
- The Target 4 / task 5 (T4/t5) workload is the cost analysis of mitigating fuel delivery constraints with either firm pipeline expansion or dual fuel functionality



# EIPC Project Update – August 11, 2014 – cont'd

## Scenarios and Sensitivities

- Three Base Scenarios: High, Reference and Low Gas Demand Scenarios
- Two sets of Sensitivities have been proposed
  - 26 proposed Sensitivities in Set #1 (March 2014)
  - 11 proposed Sensitivities in Set #2 (July 2014)

## Scenarios and Sensitivities for New England

Sensitivity #01 - Adjust the basis adder for the natural gas prices to reflect market pricing on a peak day (inversion pricing)

Sensitivity #04 - Deactivation of additional coal and nuclear units and add gas-fired resources

Sensitivity #05a - Deactivation of additional coal/nuclear units and add wind and solar

Sensitivity #05b - Deactivation of additional coal/nuclear units and add Quebec hydro-by-wire

Sensitivity #05c - Deactivation of additional coal/nuclear units and add EE/DR

# EIPC Project Update – August 11, 2014 – cont'd

## Scenarios and Sensitivities for New England – cont'd

- Sensitivity #06 - Increased electric and gas EE/DR, including potential increase in dispatchable gas-side DR during the peak heating season
- Sensitivity #13 - Increased infrastructure to enable additional Marcellus/Utica flows to neighboring PPAs
- Sensitivity #16 - Increased sendout from Canaport and Dstrigas LNG import terminals
- Sensitivity #23 - High/increased LNG exports, along the Gulf of Mexico and Atlantic Seaboard
- Sensitivity #31 - Electric load at 90/10 and high RCI gas demand: polar vortex
- Sensitivity #33 - Sensitivity #31 plus high outage rates on coal and oil units, but leave gas-fired units FOR the same
- Sensitivity #34 - Force gas-fired units to run at full load to test maximum electric sector demand
- Sensitivity #37 - Sensitivity #13 plus add Canaport as an LNG export facility

# EIPC Remaining Project Timeline

## – August 11, 2014 *(All dates are preliminary)*

- Between July 24 and August 31, 2014 – LAI to provide dates for issuance of Aurora runs for Sensitivities/GPCM runs for three Scenarios and Sensitivities
  - (Set #1 and Set #2), including frequency/duration and mitigation
- August 31, 2014 – GPCM runs largely complete
- September 12, 2014 – Draft of the revised Target 2 report due to PPAs
- September 17, 2014 – PPA comments due back on Target 2 report
- September 30, 2014 – Target 2 Draft Report distributed to stakeholders
  - Includes results of Second Set of Sensitivities
- October 10, 2014 - SSC Webinar to discuss Target 2 Report, Target 3 & 4 status
- October 17, 2014 - Stakeholder comments on Target 2 revised Draft Report are due
- October 24, 2014 - Target 4 Draft Report sent to Stakeholders
- Between October 25 and December 12, 2014 - PPA Stakeholder Group meetings on Target 3 and Target 4 results
- October 31, 2014 - Target 2 final Draft Report submitted to DOE  
(Target 2 Complete)

# EIPC Remaining Project Timeline

## – August 11, 2014 – cont'd

- November 5, 2014 - SSC Webinar to discuss Target 4 Draft Report and results
- November 14, 2014 – Stakeholder comments on Target 4 Draft Report due
- December 2, 2014 - Target 3 Draft Report sent to Stakeholders
- December 5, 2014 - Target 4 final Draft Report submitted to DOE  
(Target 4 Complete)
- December 10, 2014 - SSC Webinar to discuss Target 3 results
- December 19, 2014 - Stakeholder comments on Target 3 Draft Report due
- January 15, 2015 - Target 3 final Draft Report submitted to DOE  
(Target 3 Complete)
- February 17, 2015 - Draft revision to Phase II Report to Stakeholders
- February 25-26, 2015 - SSC final meeting to discuss Total Draft Report
- March 10, 2015 - Final written Stakeholder comments due on total Draft Report
- April 8, 2015 - Revised final Draft Report sent to DOE
- June 4, 2015 - Final Report submitted & End of Project

# Questions

