

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



Project Update

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Table of Contents

- Legend
- History
- Participating Planning Authorities (PPAs) / Study Region
- PPA Stakeholders / Stakeholder Steering Committee (SSC)
- The Four Study Targets
- Project Administration Timeline *
- **Status Update ***

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

Legend

- Information (text) in dark color was previously delivered to the PAC at these meetings:
 - 2013
 - June 19, August 13, September 17, October 16, November 20, December 18
 - 2014
 - January 22, February 19, March 17, April 29, May 21, June 19
- Information (text) in red color is an update to the previously published information/dates
 - Prior updates can be found on the PAC Materials web site; by meeting date
 - This update starts at Page 10

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 also factor in

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 will be 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 five- 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

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

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 thru August 2, 2013
- 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

Project Update – July 15, 2014

133 Target 1

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

134 Target 2

- The initial draft Target 2 report was posted to the EIPC website on June 20, 2014 and discussed at the Stakeholder Steering Committee (SSC) meeting in Atlanta
- Written stakeholder comments are due by July 11, 2014 and will be reviewed for incorporation in the updated Target 2 report to be distributed to stakeholders by September 30, 2014
- The PPAs, the SSC and LAI have determined the second set of sensitivities that will be analyzed in the coming weeks
- LAI has requested additional information from PPAs regarding 90/10 winter peak loads, historical forced outage rates, and assumptions regarding nuclear unit outages, which will be needed to construct several of the set 2 sensitivity cases

Project Update – July 15, 2014 – cont'd

135 Target 2 – AURORA Update

- After extensive review and comment by the PPAs of the Aurora production simulation runs, LAI has updated the Aurora database with several changes that fine-tuned various input assumptions
- Revised Aurora runs have been distributed to the PPAs on July 8, 2014 with comments from PPAs returned to LAI by July 11, 2014

136 Target 2 – GPCM Update

- Revisions are underway to GPCM inputs, RCI forecast, and pipeline infrastructure
- Final comments on the preliminary pipeline datasets distributed to INGAA for member pipeline review are due by July 11, 2014
- Following up on the SSC meeting in Atlanta, a GPCM webinar with INGAA membership and other stakeholders was held on Wednesday, July 9, 2014
- In response to stakeholder comments received in Atlanta, additional presentation formats showing the locations of un-served demand reported by GPCM, in lieu of, or in addition to the pipeline utilization maps displayed in the initial draft Target 2 Report, are being developed. The additional presentation formats will be distributed to the PPAs as the GPCM results are completed and spooled for review

Project Update – July 15, 2014 – cont'd

137 Target 3

- LAI has reviewed the Form 567 materials provided by FERC, and begun incorporating them into the WinFlow steady-state hydraulic modeling system
- 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
 - Distribution to the PPAs is scheduled during the week of July 21, 2014
- LAI has requested the use of several pipeline hydraulic models from their owners
 - To date, LAI has reached out to a number of pipelines doing business in PJM, New York and New England and either received expressions of support or an indication that the request remains under management review
 - A like request was submitted to INGAA on July 2, 2014 but the holiday break has slowed down communications between INGAA and their membership
 - Closure is expected by mid-July, 2014

Project Update – July 15, 2014 – cont'd

138 Target 4

- Work is continuing on the various Target 4 work tasks
- LAI has reviewed their data needs and determined that sufficient information has been received from the PPAs in response to the Target 4 data request and public sources to prepare assumptions to complete the analyses
- The list of locations for Target 4 / task 5 (T4/t5) analysis remains outstanding and potentially constitutes a milestone challenge; however, LAI recognizes the need for Target 2 frequency / duration analysis to be completed for at least the Reference Gas Demand Scenario (RGDS) before the PPAs are able to prioritize the locations for the engineering economic tradeoff analysis specified in task 5
- Efforts to expedite the requisite Target 2 analysis to support T4/t5 research is underway, but no schedule of deliverables is presently available

Project Timeline – July 15, 2014

139 Remaining Project Timeline

- 139.1 July 11, 2014 – Stakeholder comments on initial Target 2 Draft Report are due
- 139.2 August 1, 2014 - SSC Webinar
 - 139.2.a Discuss Target 2 status and results of additional sensitivities
 - 139.2.b Discuss Target 3 and 4 status
- 139.3 Between July 24 and August 31, 2014 – Provide dates for issuance of Aurora runs for Sensitivities and GPCM runs for three Scenarios and Sensitivities (Set #1 and Set #2), including frequency and duration and mitigation
- 139.4 August 31, 2014 – GPCM runs largely complete
- 139.5 September 12, 2014 – Draft of the revised Target 2 report due to PPAs
- 139.6 September 17, 2014 – PPA comments due back on Target 2 report
- 139.7 September 30, 2014 – Target 2 Draft Report distributed to stakeholders
 - 139.7.a Includes results of Second Set of Sensitivities
- 139.8 October 10, 2014 - SSC Webinar to discuss Target 2 Report, Target 3 & 4 status
- 139.9 October 17, 2014 - Stakeholder comments on Target 2 revised Draft Report due
- 139.10 October 24, 2014 - Target 4 Draft Report sent to Stakeholders

Project Timeline – July 15, 2014

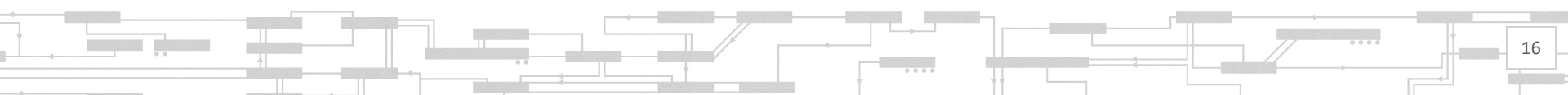
139 Remaining Project Timeline – cont'd

- 139.11 Between October 25 and December 12, 2014 - PPA Stakeholder Group Meetings on Target 3 and Target 4 results
- 139.12 October 31, 2014 - Target 2 final Draft Report submitted to DOE (Target 2 Complete)
- 139.13 November 5, 2014 - SSC Webinar to discuss Target 4 Draft Report and results
- 139.14 November 14, 2014 – Stakeholder comments on Target 4 Draft Report due
- 139.15 December 2, 2014 - Target 3 Draft Report sent to Stakeholders
- 139.16 December 5, 2014 - Target 4 final Draft Report submitted to DOE (Target 4 Complete)
- 139.17 December 10, 2014 - SSC Webinar to discuss Target 3 results
- 139.18 December 19, 2014 - Stakeholder comments on Target 3 Draft Report due
- 139.19 January 15, 2015 - Target 3 final Draft Report submitted to DOE (Target 3 Complete)
- 139.20 February 17, 2015 - Draft revision to Phase II Report to Stakeholders
- 139.21 February 25-26, 2015 - SSC final meeting to discuss Total Draft Report

Project Timeline – July 15, 2014 – cont'd

139 Remaining Project Timeline – cont'd

- 139.22 March 10, 2015 - Final written Stakeholder comments due on total Draft Report
- 139.23 April 8, 2015 - Revised final Draft Report sent to DOE
- 139.24 June 4, 2015 - Final Report submitted & End of Project



Questions

