



Eastern Interconnection Planning Collaborative

SSC Meeting Notes

October 29-30, 2013

Mayflower Hotel, Washington DC

This meeting summary highlights key discussion items and decisions from the meeting of the EIPC Stakeholder Steering Committee.

Objectives:

- Introduction to the EIPC Gas-Electric System Interface Study, Project Team, and Consultant
- Understand Study Work Plan, Models, and Data Sources, especially for Targets 1 and 2
- Understand Study Schedule and Solidify Dates for Future SSC Webinars and Meetings
- Provide an Opportunity for Early Input by SSC

Action Items:

None

Participants:

Up to 95 individuals were in attendance in the room and an additional 37 on the phone; a full list of attendees is attached. The meeting agenda and presentations are available in their entirety at:

http://www.eipconline.com/Gas-Electric_Activities.html

1. Welcome, Overview of Agenda, and Meeting Objectives

- Roy Thilly (EIPC) welcomed SSC members, FERC, and DOE.
- He provided background information on the SSC and the EIPC Gas-Electric System Interface Study, and stated the meeting objectives.

2. SSC Member Introductions and Initial Comments/Introduction of New Gas Sector

- SSC panel members introduced themselves
- Co-Chairman Thilly welcomed the new Gas Sector panel members: Jim Stazione (National Grid), Erica Bowman (Natural Gas Alliance) and Don Santa (INGAA).

3. Actions by Consensus and Backstop Voting Process

- Co-Chairman Thilly discussed actions by consensus, noting that in the past, SSC members have always been able to resolve issues and reach agreement by consensus without a vote - with the occasional request of a member to note a difference. Each sector sought to reach agreement within their sector and in turn present their views at the SSC

4. Introduction of Consulting Team

- David Whiteley (EIPC) introduced Levitan and Associates, Inc. (LAI) the consulting team chosen to do the EIPC Gas-Electric System Interface Study, and detailed the competitive review process by the SSC that led up to the final consultant choice.
- Richard Levitan (LAI) introduced members of his team and provided details on the different roles his team will be assigned. It was also noted that the term "target" is used rather than goals, tasks, or objectives, which have different meanings within a U.S. DOE cooperative agreement.

Summary of Targets:

- **Target 1:** Develop baseline assessment, including descriptions of the natural gas-electric system interfaces, interaction effects, specific drivers of the pipeline/LDC planning process
- **Target 2:** Evaluate the capability of the natural gas systems to meet individual and aggregate core and noncore gas demand over a 5- and 10-year horizon
- **Target 3:** Identify contingencies on the natural gas system that could adversely affect electric system reliability, and vice versa
- **Target 4:** Review the operational / planning issues affecting the availability of dual fuel capable

5. Overview of Study Objectives and Analysis

- Co-Chairman Thilly stated the material provided for today's meeting will be a starting point to kick off Study Targets 1 and 2.
- There have been ongoing discussions on how to collect data and do the modeling, and members were encouraged to provide comments as the material is presented.
- Specifics of the targets will be detailed for the group, so everyone has a clear understanding on how it will be done.
- Each target will conclude with a draft of that target for each of the section to be completed by 2015.

6. Presentation on Work Plan and Models to be used in the Analyses - Deep analysis of Targets 1 and 2

- Mr. Levitan provided a high level overview of the Study Targets.
- **Target 1:** Baseline Existing Systems. Similar to a book report and will involve much research and pulling information together to get everyone grounded. Included in this phase:
 - Identifying natural gas infrastructure & generators
 - Storage and transportation options available to generators
 - Generator fuel assurance
 - Capacity release markets
 - Unsubscribed transportation capacity
- **Target 2:** Infrastructure Adequacy. Centers on the capacity of the gas systems to meet individual and aggregate core and noncore gas demand over a 5-10 year period.
 - Mr. Levitan provided an overview of the AURORA_{xmp}, a comprehensive electricity market modeling tool that will be used to develop generator gas demands. Due to the large footprint, the Aurora model was chosen as it is more effective, and has faster execution and capacities to handle constraints, than the other models.
 - LAI will do a reference gas demand case (high gas/low gas) and,
 - In conjunction with stakeholder groups, there may be additional sensitivity studies.
 - Key driving assumptions that go into the simulation modeling will come from PPAs and other stakeholders while data such as ramp or heat rate curve may from directly from LAI via a default database that is delivered with the AURORA model.
 - In terms of the gas side, a gas demand forecast will be developed and fed into the AURORA resource assumptions, provided by PPAs infrastructure expansion and energy efficiency programs.
 - Use of the gas model that simulates market behavior and is used to transport gas to end use locations.
 - Integrate the two models into the study.
 - Target 2 analysis is running AURORA model to develop gas and feeding into the GPCM model. A slide on the model interactions was provided.
- **Target 3:** Contingency Analysis: Hydraulic modeling of selected areas, gas contingencies, loss of supply and storage, line break, loss of compression, electrical contingencies.

- Identify the top three to five gas and electric contingencies in each PPA and in Study Region as a whole and identify possible mitigation measures / infrastructure work-arounds.
 - Identify contingencies operations.
 - The same hydraulic models that were used 10 years ago will be used here to identify what happens when pipelines or compression stations are lost.
 - Model interactions for Target 3 were discussed.
 - There was discussion re “possible mitigation measures” and how this is about what is doable from a physical standpoint.
 - The emphasis of Target 3 is on what is *operationally* real rather than *commercially* real.
- **Target 4: Dual-Fuel Capability:** Analyzes third party arrangements, how much gas is flowing in the path vs. out of the path, liquid fuel storage capability and method of resupply for dual-fuel units, pressure-sensing capabilities, reaction time, analysis of petroleum market and supply options

A detailed presentation with the work plan and models was presented for the group and is posted on the EIPC SSC website. Mr. Levitan detailed the near-term action items:

- I. Electric data compilation
 - Preparation of electric-side inputs (PPAs / LAI)
- II. Gas data compilation
 - Prepare information requests to stakeholders (LAI)
 - Send introductory letter and information requests to stakeholders (PJM / IESO)
 - Request CEII authorization from FERC (LAI)
 - Compile requested public data (Stakeholders)
 - Request CEII from FERC and stakeholders (LAI)
 - Compile requested CEII (FERC / Stakeholders)
- III. Scenario / Sensitivity Development (SSC / LAI)

7. Presentation on Data Sources

- A presentation on Targets 1-4 data sources was provided for the group.

8. EISPC Presentation on Studies and Whitepapers

- Bob Pauley (EISPC) provided an update on the EISPC completed studies and whitepapers as well as those underway.
- Recommended studies and whitepapers through 2014 are:
 - Power Flow Addition to the Transmission Planning Primer - Developing a podcast or other suitable media that allows some interactive simulations.
 - Data Mining - This effort has been led by Stan Hadley (ORNL). It provides additional insights from Phase I and II of the EIPC Study
 - Co-Optimization of Transmission with other Resources (Demonstration) - This would evaluate hypothetical transmission facilities that are co-optimized with traditional generation, renewable generation, demand response, energy storage or other as deemed to be appropriate by the states and the Planning Coordinator(s).
 - Load Forecasting – Analysis of requirements for state of the art forecasting.
 - Application of the Energy Zones Mapping Tool - Study on how the Mapping Tool might be used to enhance processes for assessing transmission development in environmentally sensitive areas
- Harry Vidas (ICF International) discussed the EISPC Study on Long-Term Natural Gas and Electric Infrastructure. He reviewed the proposal and workflow for the 11 tasks that were assigned to him.

9. Review of “Additional EIPC Study Analysis: Interim Report on High Priority Topics”

- Mr. Hadley presented a summary of Follow-on Analysis for the EIPC Stakeholder Steering, which included a recap of the EIPC process, Phase 1 and 2.
- The three year EIPC study produced a mountain of data and DOE requested a small study to data-mine for added insights.
- A survey of the EIPC/EISPC/SSC leaders raised 13 topics, which have been categorized into high, medium, and low priority.

10. SSC Questions and Discussion on Models and Data Sources

- Questions/comments from the group on models and data sources:

- Can LAI show the math and be transparent on where assumptions vary from what was fed into the EIPC model – (i.e., what the change is and what the difference is)? *It is a worthwhile recommendation and LAI intends to follow this. LAI will be as transparent as possible. Identifying key assumptions and whether our noteworthy divergence from model is achievable, however, trying to exhaustively document all differences would be an extremely burdensome.*
- What predictions or assumptions have been made relative to an increase in the use of natural gas for home heating? *In Target 2 LAI will be doing a gas demand fuel forecast. This will include additional programs filed with commissions or in the works. That will determine what additional increments should be included.*
- How do you look at peak usage for electric to feed into the GPNC models? How does this reconcile with gas? *The AURORA results shows total gas burn*
- How will you convert daily models to test peak day conditions? *Monthly data will express the relationship. GPNC is set up monthly – the study will use daily data rather than monthly.*
- How will the EIPC's and EISPC's studies be coordinated so the policymaker will have clear conclusions? *It isn't the scope to try to reconcile the two; however, there could be a representation of how the two might be similar and what is fundamentally different. It is understood that there is an interest in looking at the two side by side. Options will be explored into what may reasonably accomplished.*
- As we go thru this intense data collection, how necessary is it to go to that level to get good zonal results in this effort? *It's desirable to canvas pipelines to come up with noteworthy business practices and contrast them with others across the study region. That will help with the target 3 Study.*
- What would be the cost of moving to firm gas and what's the value of this in terms of reliability - or does this interruptible model continue to work into the future? *Some of these will be queued up in Target 4. Some have been presented to NYISO. We can go beyond research.*
- Will the study take a look at how much interruption may take place based on different interruptions of gas? *Yes, we will be able to address this in good quantitative form thru target 2 research*
- Are there assumptions on supply having to ramp up or down? *Yes, as mentioned on October 29, 2013, the electric production simulation case will yield that profile of gas burn.*

11. Presentation on Modeling Outputs and Formats for Presenting Results

- Mr. Levitan provided a walk through on examples of modeling outputs and formats for the final report, which will include extensive graphs in excel and source data for assumptions.

12. Discussion on Scenarios and Sensitivities to be Analyzed

- Co-Chairman Thilly and Mr. Whiteley asked for comments from members on sensitivities, and noted that this is just a starting point, there will be further discussion at future webinars.
- The purpose of this portion of the meeting is to get ideas out for people to think about.

- A low gas scenario would not be useful since we are looking at limits of gas structure. What happens if given the protests against fracking and potential regulation for fracking would change flow of gas and prices?
If we were interested in looking at reduced fracking reduced shale gas production – is this within the realm or a different study. The study can consider this – under tighter environmental safeguards.
- Should the impact of carbon regulation and price be considered since it would have an impact thru elasticity demand for both natural gas and electricity?
It is one of the attributes of the study – it's a study on infrastructure adequacy as it relates to the study region.
- What is the timing and framework for how SSC members can provide input on sensitivities?
Webinars will be used to get input.

13. Project Management & Schedule Update

- Mr. Whiteley provided reviewed the project tasks and scopes.

14. Working Session on Future Webinar and Meeting Schedules

- Tim Burdis (EIPC) provided the tentative schedule for upcoming webinars.

15. Remarks, Input, Questions from SSC Members

16. Summary and Next Steps

- Co-chair Thilly adjourned the meeting

EIPC Attendees (In-Person/Teleconference)

10/29/2013 12:00 PM – 10/30/2013 1:30 PM EST

#	First Name	Last Name	Company
1	David	Andrejcek	Federal Energy Regulatory Commission
2	Victor	Araujo	National Regulatory Research Institute
3	Jerron	Atkin	Erdman Anthony
4	Mark	Babula	ISO New England Inc.
5	Nancy	Bagot	Electric Power Supply Assn
6	Rajnish	Barua	National Regulatory Research Institute
7	Adam	Bednarczyk	Federal Energy Regulatory Commission
8	Denis	Bergeron	Maine Public Utilities Commission
9	Thomas	Bessette	MA Department of Public Utilities
10	Robert V.	Bibbo	Normandeau Associates
11	Garrett	Bissell	Couch White, LLP
12	John	Borchert	Central Hudson Gas and Electric Corporation
13	Erica	Bowman	Americas Natural Gas Alliance
14	David	Boyd	MN Public Utilities Commission
15	Delanie	Breuer	Public Service Commission of Wisconsin
16	Daniel	Brooks	Electric Power Research Institute (EPRI)
17	Gary	Brown	New York Public Service Commission
18	Mark	Brownstein	Environmental Defense Fund
19	Leigh	Bullock	NYISO
20	Timothy	Burdis	PJM Interconnection
21	David	Burnham	Federal Energy Regulatory Commission
22	Kevin	Carden	Astrape Consulting
23	Richard	Carlson	Levitan & Associates, Inc.
24	Michael	Caron	Public Utilities Regulatory Authority
25	Jack	Cashin	Electric Power Supply Association
26	Henry	Chao	New York Independent System Operator
27	Ananth	Chikkatur	ICF International
28	Hisham	Choueiki	Ohio PUC
29	Ron	Christian	Vectren Corporation
30	Christina	Cody	NARUC
31	Anthony	Cox	UGI Energy Services
32	Alicia	Dalton-Tingler	NETL
33	Joyce	Davidson	FERC
34	Paul A.	DeCotis	Long Island Power Authority
35	Stacy	Dimou	Bangor Hydro Electric
36	Vandan	Divatia	Northeast Utilities
37	Joan	Dreskin	Interstate Natural Gas Assn of America
38	Beth	Duckles	AAAS Fellow/Department of Energy
39	Jack	Elder	Levitan & Associates, Inc.
40	Mason	Emnett	FERC

#	First Name	Last Name	Company
41	John	Farber	Delaware Public Service Commission
42	Bert	Finzer	Arkansas Public Service Commission
43	Joseph	Fiordaliso	NJ Board of Public Utilities
44	Emily	Fisher	Lawrence Berkeley National Lab
45	Elizabeth	Fleming	Public Service Commission - South Carolina
46	Flora	Flygt	American Transmission Company
47	Denise	Foster	PJM Interconnection
48	Al	Freeman	Michigan PSC
49	Anish	Gaikwad	Electric Power Research Institute
50	christopher	garbacz	Mississippi Public Utilities Staff
51	Doug	Gotham	Purdue University
52	Vignesh	Gowrishankar	NRDC
53	Ian	Grant	Tennessee Valley Authority
54	Stan	Hadley	Oak Ridge National Lab
55	Brenda	Harris	Occidental Chemical
56	Gary	Helm	PJM
57	Erin	Hogan	NYSERDA
58	Colette	Honorable	APSC
59	Cynthia	Hsu	AAAS Science & Technology Fellow
60	Eric	Jacobi	CT DEEP
61	David	Johnston	Indiana Utility Regulatory Commission
62	Kimberly	Jones	NC Utilities Commission
63	Kelli	Joseph	NYISO
64	Robert	Kaineg	Charles River Associates
65	Betty Anne	Kane	Public Service Commission of the District of Columbia
66	Seth	Kaplan	Conservation Law Foundation
67	Will	Kaul	Great River Energy
68	David	Kelley	Southwest Power Pool
69	Miles	Keogh	NARUC
70	Joe	Kerecman	Calpine
71	sheree	kernizan	GA PSC
72	Leanne	Khammal	Federal Energy Regulatory Commission
73	Drake	Kijowski	PSEG Energy Resources & Trade LLC
74	Ryan	Kind	Missouri Public Counsel
75	Vladimir	Koritarov	Argonne National Laboratory
76	Agnita	Kote	naruc
77	Mark	Kresowik	Sierra Club
78	Peter	Larsen	Lawrence Berkeley National Laboratory
79	Jerry	Lein	North Dakota Public Service Commission
80	Valerie A.	Lemmie	Eastern Interconnection States' Planning Council
81	Richard	Levitan	Levitan & Associates, Inc.
82	Yilu	Liu	University of Tennessee
83	Jacob	Lucas	FERC

#	First Name	Last Name	Company
84	Mark	Marsan	PSE&G
85	Talina	Mathews	Kentucky Public Service Commission
86	James	McCalley	Iowa State University
87	Paul	McCurley	NRECA
88	Rae	McQuade	North American Energy Standards Board
89	James	Melia	PA Public Utility Commission
90	Kevin J.	Moody	PA Independent Oil & Gas Association (PIOGA)
91	G. Scott	Morris	Alabama PSC
92	Stuart	Nachmias	Con Edison
93	Paul	Napoli	Public Service Electric & Gas Company - (PSE&G)
94	Tim	Noeldner	WPPI Energy
95	Kwame	Obeng	NARUC
96	Frederick	Ochsenhirt	State Corporation Commission
97	David	Owens	Edison Electric Institute
98	Al	Padron	Federal Energy Regulatory Commission
99	Lopa	Parikh	EI
100	Bob	Pauley	EISPC
101	Robert	Pick	Nebraska Public Power District
102	Dan	Rochester	IESO
103	John	Rogness	KY Energy Office
104	Elliot	Roseman	ICF International
105	Eric	Runge	Day Pitney LLP for NEPOOL
106	Don	Santa	INGAA
107	Maria	Scheller	ICF International
108	Tom	Schneider	Consultant
109	Jerry	Schwartz	American Forest & Paper Association
110	Maryam	Sharif	New York Power Authority
111	Pam	Silberstein	NRECA
112	Lisa	Simpkins	Exelon Corporation
113	Rob	Sinclair	Ontario Power Authority
114	JT	Smith	MISO
115	William H.	Smith, Jr.	Organization of MISO States (OMS)
116	James	stanzione	National Grid
117	Ed	Tatum	Old Dominion Electric Cooperative
118	Peter	Terranova	UGI Energy Services
119	Roy	Thilly	EIPC Steering Committee
120	Sharon	Thomas	NARUC
121	Eric	Thoms	MISO
122	Burl	Till	Tennessee Valley Authority
123	Aida	Timm	NARUC
124	JOYCE	TURKALY	PA Independent Oil & Gas Association (PIOGA)
125	Peri	Ulrey	Natural Gas Supply Association
126	Ellen	Vancko	Public Service Commission

#	First Name	Last Name	Company
127	James	Volz	Vermont Public Service Board
128	Mark	Wehlage	Xcel Energy
129	Jason	Weiers	Otter Tail Power Company
130	Jolette	Westbrook	Massachusetts Department of Public Utilities
131	David	Whiteley	EIPC
132	Dena	Wiggins	Process Gas Consumers Group
133	Sara	Wilmer	Levitan & Associates, Inc.
134	Dallas	Winslow	Public Service Commission
135	Nick	Wintermantel	Astrape Consulting
136	Kerry	Worthington	EISPC / NRRI