



Eastern Interconnection Planning Collaborative

EIPC Gas-Electric Interface Study

Target 2: Scenarios & Sensitivities

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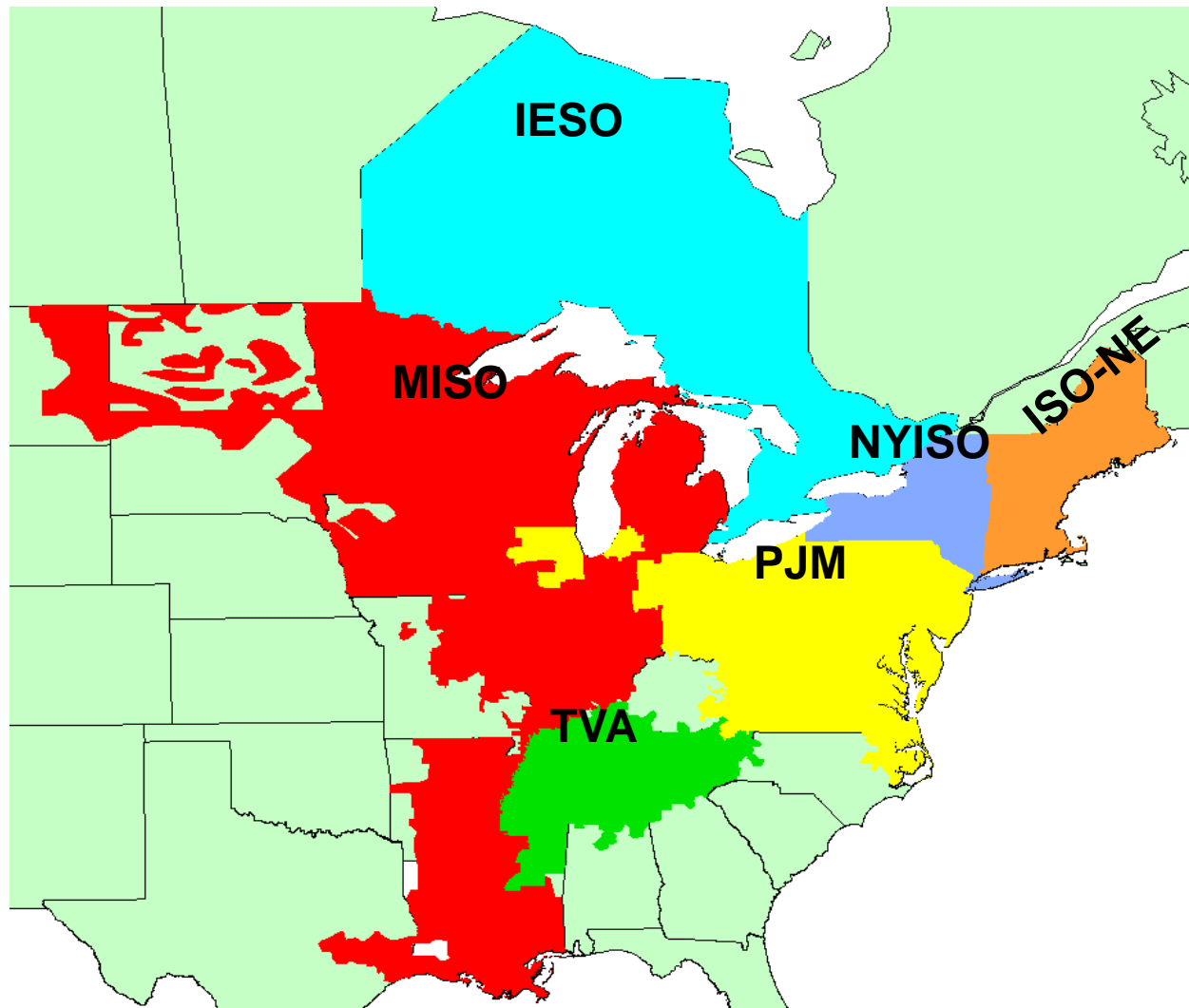
IPTF/EGCWG Meeting

March 11, 2014

Overview

- **Study Region**
- **Four Study Targets**
- **Three Scenarios**
- **Target 1: Baseline Assessment**
 - Draft Report
 - Schedule & Next Steps
 - Questions & Discussion: Levitan & Associates
- **Target 2: Adequacy Analysis**
 - Three Scenarios
 - Schedule & Next Steps
 - Draft Consolidated Sensitivity List

Study Region



Four Study Targets

Four Study 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 non-core 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 generation, including fuel assurance objectives

Target 1: Baseline Assessment

Target 1: Draft Report

- Draft Report was posted on EIPC Web - 2/21/14
- SSC Webinar held on 2/28 to present study highlights
 - Case Example: NYISO region
 - LAI presentation was posted and distributed
- Schedule/Next Steps
 - Stakeholder comments due - 3/14/14
 - Target 1 Complete/Final Report Posted – 4/1/14

Target 1: Study Framework

- Assess baseline gas-electric systems and interfaces
- Define gas pipeline, storage facilities
- Define pipeline and LDC transportation options for generators
- Assess generator fuel contracting and assurance practices
- Evaluate secondary market for released capacity

Questions and Discussion



Target 2: Adequacy Analysis

Target 2: Three Scenarios

- **Reference Gas Demand Scenario**
 - Continuation of current market conditions with reasonably expected changes consistent with PPA resource planning processes
- **High Gas Demand Scenario**
 - Increased coal plant attrition, competitive gas-to-coal price parity assumptions
 - Represents a plausible maximum gas demand
- **Low Gas Demand Scenario**
 - Higher delivered gas prices, slower electricity demand growth, higher-than-expected growth in renewables
 - Represents a plausible minimum gas demand

Target 2: Schedule/Next Steps

- Post Consolidated List of Sensitivities – 3/5/14
- **IPTF/EGCWG Meeting – 3/11/14**
- Final Stakeholder Written Input on **First Set** of Target 2 Sensitivities Due – **3/14/14**
- **SSC Webinar: 3/21/14**
 - Discuss Target 2 status
 - Discuss input on sensitivities from Regional stakeholder processes and SSC
 - Finalize the **First Set** of sensitivities
 - Kickoff Target 3

Preliminary Schedule

- SSC Webinar – 5/7/14 (TBD)
 - Discuss Target 2 status and available results
 - Discuss **Second Set** of sensitivities
- Target 2 **Initial** Draft Report sent to Stakeholders – 5/30/14
 - Includes results from **First Set** of sensitivities
- **PPA Stakeholder Group Meetings on Target 2 Results**
 - **IPTF/EGCWG Meeting – 6/5/14**
- Stakeholder Comments on Target 2 **Initial** Report Due – 6/13/14
- **SSC Mid-Point Meeting:** June 25-26, 2014
 - Discuss Target 2 results & Draft Report
 - Finalize **Second Set** of sensitivities (PPAs will determine how many sensitivity runs can be accommodated)
 - Discuss on-going work in Target 3 and Target 4

Preliminary Schedule (Cont'd)

- Post list for **Second Set** of sensitivities – 7/3/14
- Target 2 Revised Draft Report send to stakeholders – 9/12/14
 - Includes results from **Second Set** of sensitivities
- SSC Webinar – 9/19/14 (TBD)
 - Discuss Target 2 Draft Final Report
 - Discuss Target 3 status and available results
- Target 2 Complete – 10/10/14
 - Final Report Posted

Potential Sensitivities

Guidelines for Potential Case Sensitivities

- Applied to one or more of the three Scenarios
- Developed by changing a single independent variable
- Multiple sensitivities could be combined to test multiple factors simultaneously
- Suggested variables should represent relatively small excursions around key uncertainty factors rather than paradigm shifts

Stakeholder Input

- EIPC provided an list of potential sensitivities for discussion on SSC Webinars held on December 20th
- Stakeholders provided additional input and discussion
 - SSC Webinars on January 31st and February 28th
 - Joint EGCWG/IPTF meetings held on January 6th & 23rd and February 20th
- Written comments were received (on February 21st) and posted from
 - TO/TD Sector
 - Gas Sector
- From these inputs, EIPC has compiled a list of sensitivities for further consideration and comment (see following slides)

**DRAFT FOR STAKEHOLDER DISCUSSION ON
MARCH 21, 2014 SSC WEBINAR**

Consolidated Sensitivity List for Target 2

Requested =>	
Approved =>	

	Short Description	Reference Gas Demand Scenario	High Gas Demand Scenario	Low Gas Demand Scenario
1	Adjust the basis adder for the natural gas prices to reflect market pricing on a peak day			
2	Remove change in gas price from scenario drivers			
3	Significantly lower delivered natural gas prices			
4	Deactivation of additional coal and nuclear - add gas fired resources			
5	Deactivation of additional coal and nuclear - add renewable resources in various mixes: wind, solar, Quebec hydro by wire (multiple sensitivities)			
6	Increased electric and gas EE/DR, including potential increase in dispatchable gas-side DR during the Peak Heating Season			
7	Combination of #5 and #6			
8	Extend nuclear licenses			
9	Inclusion of new transmission build-out sensitivity – interconnection queue (?)			
10	Energy East pipeline does not proceed			
11	Significantly higher natural gas prices, including significant new environmental regulations that raise prices in shale producing basins			
12	Increased infrastructure to enable additional Marcellus/Utica flows to neighboring PPAs			
13	Increased gas storage availability			

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Consolidated Sensitivity List for Target 2

14	Increased electric storage availability – Aurora only?			
15	Increased LNG deliveries to Canaport and Distagas LNG import terminals			
16	Backup fuel inventory sensitivity (applicable to dual fuel units), high and low (e.g. 30-day backup fuel inventory, 5-day backup fuel inventory)			
17	High electric load growth			
18	High industrial natural gas demand (Should be combined with high electric growth?) – How to determine locations for additional demand?			
19	#4 + #17 + #18 – will require information on locations of LDC increased demand – active coordination with LDCs needed			
20	Low electric load growth (economic stagnation)			
21	Low industrial natural gas demand (Should be combined with low electric growth?) – How to determine locations for additional demand?			
22	High/Increased LNG exports, e.g., along the Gulf of Mexico or Atlantic Seaboard			
23	Extreme weather – higher priority due to recent experience (cold snap)			
24	Delayed restart of Ontario nuclear units and no nuclear refurbishment – The nuclear units reach end of life and are retired			
25	Additional coal and nuclear retirements + oil retirements in New England + the postponement / cancellation of certain proposed transmission projects including Northern Pass Transmission (Run same case as #4 + remove transmission?)			
26	Additional coal retirements + retirement of Indian Point 2/3 + significant delay in the restart of nuclear units in Ontario (Run same case as #4?)			

Questions and Discussion

