

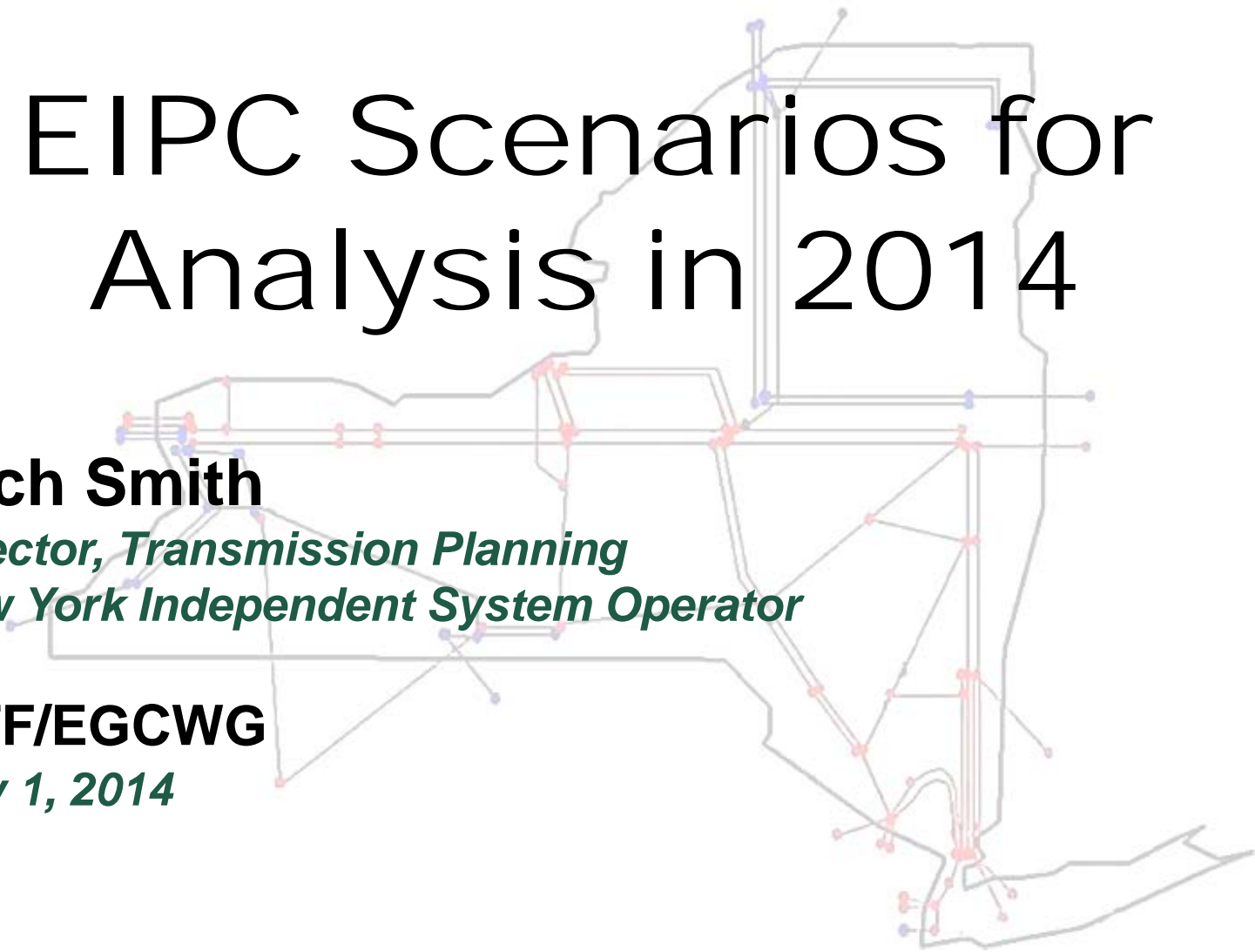
EIPC Scenarios for Analysis in 2014

Zach Smith

*Director, Transmission Planning
New York Independent System Operator*

IPTF/EGCWG

May 1, 2014



Scenario Suggestions

- ◆ **Scenarios selected for evaluation**
 - A. *Updated Base Case*
 - B. *Heat Wave and Drought*
- ◆ **Other Suggested Scenarios**
 - *Increased Gas Generation*
 - *High Transmission Build-Out*
 - *Inter-Regional Capabilities and Constraints during Winter Conditions*
 - *Inter-Regional Capabilities and Constraints during Spring Peak Conditions*

A. Updated Base Case

- ◆ **Submitted by: New York PSC**
- ◆ **Study Case: 2023 Summer Peak**
- ◆ **General Description**
 - *Addition of NY Transmission Owners' Transmission Solutions ("TOTS")*
 - Marcy South Series Compensation
 - Fraser – Coopers Corners 345 kV line reconductoring
 - Con Edison New 2nd Rock Tavern – Ramapo 345 kV line
 - Con Edison Staten Island Un-bottling
 - *Updates in other Regions based upon firm resource additions/retirements*

B. Heat Wave and Drought

- ◆ **Submitted by: Eastern Interconnection States' Planning Council (EISPC)**
- ◆ **Study Case: 2023 Summer Peak**
- ◆ **Questions to be Answered Based on Power Flow Analysis:**
 - *“What new interregional high voltage transmission facilities may be needed to support transfers over large geographic distances?”*

B. Heat Wave and Drought

General Description and Premise

- ◆ This scenario would assess the Eastern Interconnection's ability to transfer large amounts of power among regions of interest during a heat wave and drought under summer peak conditions.
- ◆ For transfer studies, the source would be the areas not as severely affected by the persistent high temperatures and protracted drought. The sink would be the areas that are severely affected.
- ◆ The addition or removal of resources should be identified as specifically as possible. The scenario should specify how a corresponding amount of generation in the base data should be removed or added, based on the assumption that the rolled up base case represents a balance between load and resources.
- ◆ Location, size, and mode of operation for storage technologies should be identified. Additional advanced technologies considered on case-by-case basis.
- ◆ Changes to peak demand forecast should be specified as a change to aggregate demand in the Base Plan.

Increased Gas Generation

- ◆ **Submitted by: New York PSC**
- ◆ **Study Case: 2023 Summer Peak**
- ◆ **General Description**
 - *Start with Scenario A (Updated Base Case) and include:*
 - *Indian Point Unavailable*
 - *1000MW of gas fired generation added in the Lower Hudson Valley*
 - *Increased gas fired generation in other Regions*

Transmission Build-Out

- ◆ **Submitted by: New York PSC**
- ◆ **Study Case: 2023 Summer Peak**
- ◆ **High Transmission Build-Out**
- ◆ **General Description**
 - *Start with Scenario A (Updated Base Case) and include:*
 - *1000 MW of increased transfer capability over UPNY/SENY interface*
 - *1000MW HVDC from Canada*
 - *Increased transmission build-out in other Regions*

Winter Conditions

- ◆ **Scenario Submitted by: EIPC as Sample Scenario 1**
- ◆ **Study Case: 2018 Winter Peak**
- ◆ **Inter-Regional Capabilities and Constraints during Winter Conditions**
- ◆ **Questions to be Answered Based on Power Flow Analysis:**
 - *“What constraints arise when renewable generation, gas generation, etc. are transferred during winter conditions?”*

Winter Conditions

General Description and Premise

- ◆ This scenario would assess the Eastern Interconnection's ability to transfer large amounts of power among regions of interest during winter peak conditions
- ◆ The 2018 model year would incorporate the generation retirements and other system changes associated with the implementation of the EPA MATS rules.
- ◆ Winter operations are growing in complexity as gas-fired generation, renewable generation, and demand-side options continue to increase as percentage of the overall generation mix.
- ◆ This scenario would provide both an assessment of inter-regional capabilities and constraints for 2018 winter conditions, and also would provide suitable modeling to enable independent analysis by transmission planners and other industry analysts.

Spring Peak Conditions

- ◆ **Scenario Submitted by: EIPC as Sample Scenario 2**
- ◆ **Study Case: 2018 Spring Peak**
- ◆ **Inter-Regional Capabilities and Constraints during Spring Peak Conditions**
- ◆ **Questions to be Answered Based on Power Flow Analysis:**
 - *“What constraints arise when renewables, gas generation, etc. are transferred during spring conditions?”*

Spring Peak Conditions

General Description and Premise

- ◆ This scenario would assess the Eastern Interconnection's ability to transfer large amounts of power among regions of interest during spring peak conditions.
- ◆ The 2018 model year would incorporate the generation retirements and other system changes associated with the implementation of the EPA MATS rules.
- ◆ Spring operations are growing in complexity as gas-fired generation, renewables, and demand-side options continue to increase as percentage of the overall generation mix.
- ◆ Generation resources are more likely to be off-line due to lower loads and due to maintenance outages. Wind resources generally have higher capacity factors while solar resources have shorter production hours than summer but higher than winter.

EIPC Webinar & Discussion

- ◆ **On March 25, 2014 EIPC held an interconnection-wide webinar to:**
 - *Discuss the scenario suggestions*
 - *Collect input on the ones that were a higher priority*
 - *Select the scenarios to perform analysis*

- ◆ **Considerations by EIPC:**
 - *Original scenario suggestions*
 - *Input from stakeholders*
 - *Resource availability to undertake analysis and reporting*

EIPC Scenario Decision 2014

- ◆ **Scenario A – Updated Base Case for 2023**
 - *Includes New York TOTS projects*
 - *Includes significant updates from other regions*

- ◆ **Scenario B – Drought Scenario for 2023**
 - *Starts from updated base case (Scenario A)*
 - *Drought scenario suggested by EISPC to be studied including various transfers into the Southeast*
 - *Additional discussion with EISPC and specification of additional details*

EIPC Scenario Decision 2014

◆ On Scenarios Not Selected

- *Development of other scenarios such as the shutdown of nuclear plants or other regional generation, or additional sensitivities that include additional regional transmission build-outs, would be handled, as appropriate, by the region involved rather than become part of the EIPC analysis*

Future Development

- ◆ **Developing 2018 winter case as part of the scenario analysis was supported**
- ◆ **Additional resources needed to create a winter case equivalent to effort to develop original roll-up cases**
- ◆ **More appropriate to defer the building of a winter case to the next round, possibly in 2015**
 - *Allows development of completely new winter case with the latest information rather than modify the existing cases created in 2013*

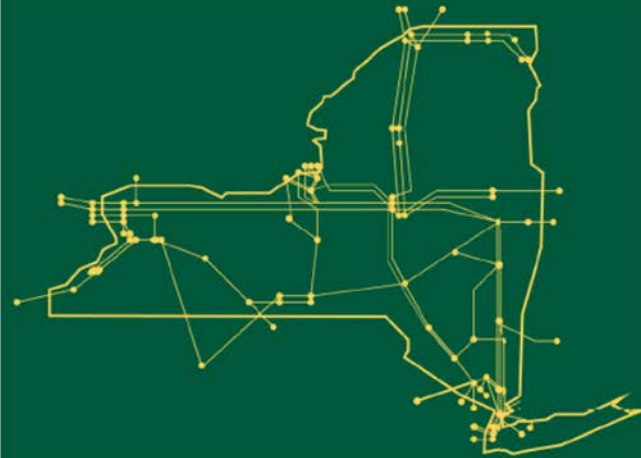
Scenario Analysis Timeline

Task*	Start	Finish
EIPC and EISPC finalize modeling assumptions for Heat Wave & Drought Scenario to be evaluated. (Scenario B)	4/15/2014	5/2/2014
EIPC performs update of previously created 2023 Summer Roll-up cases. (Scenario A)	4/15/2014	5/30/2014
EIPC recreates transfer analysis performed in the initial Roll-up analysis to identify effect of model updates on transfer capability between areas. (Scenario A)	5/30/2014	6/27/2014
EIPC modifies updated 2023 Summer Roll-up case to model the agreed upon assumptions for the Heat Wave & Drought conditions. (Scenario B)	4/25/2014	6/27/2014
EIPC performs Heat Wave & Drought analysis. (Scenario B)	6/27/2014	8/29/20134
EIPC assembles draft report (supplement to the original Roll-up Report) to incorporate results of transfer analysis on updated 2023 Summer Roll-up case and results of Heat Wave & Drought Scenario.	8/29/2014	10/31/2014
Hold web conference to present the scenario analysis results and to obtain input on the updated Roll-up report.	10/31/2014	11/28/2014
If needed, hold an interconnection-wide stakeholder meeting to review Roll-up report.	11/28/2014	12/31/2014

**Timeline dates are subject to change*

- ◆ **EIPC information is posted on the EIPC website at www.eipconline.com. Check the website for any updates.**

The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.



www.nyiso.com