

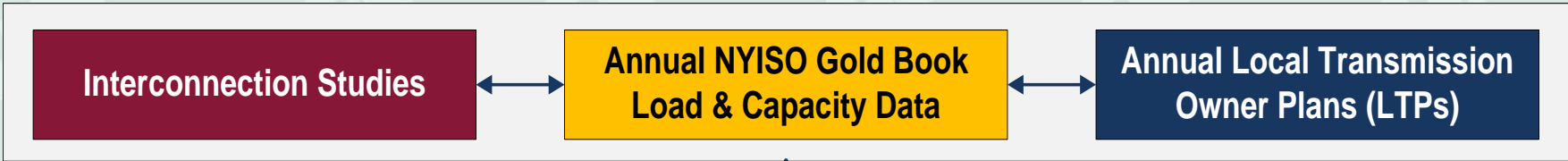


NYISO Planning Update

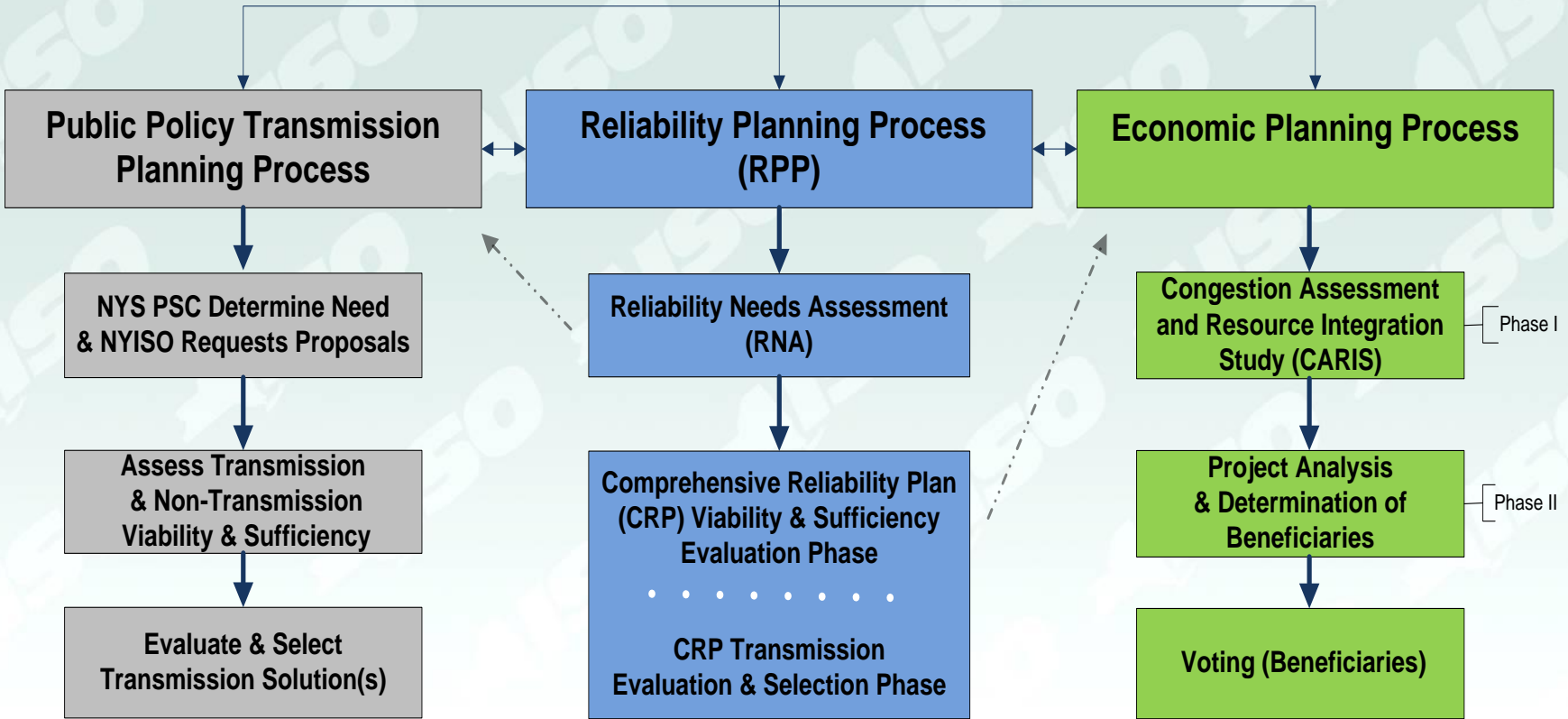
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IPSAC
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NYISO Comprehensive System Planning Process (CSPP)



Reliability Planning Process

- ◆ **Two-year process**
- ◆ **Reliability Needs Assessment (RNA)** evaluates the adequacy and security of the bulk power system over a ten-year study period, and identifies Reliability Needs
- ◆ **Comprehensive Reliability Plan (CRP)** develops a comprehensive plan to satisfy the reliability needs identified in RNA

2016 RNA

- ◆ **Study period: 2017-2026**
- ◆ **Final results**
 - *The LOLE criterion met for all ten years*
 - *Two transmission security Reliability Needs identified beginning in 2017*
 - NYSEG's Oakdale 345/115 kV transformer
 - LIPA's East Garden City to Valley Stream 138 kV circuit
 - *Scenarios performed to assess the impact of possible key assumption changes*

2016 RNA

- ◆ **Approved by NYISO board on October 18, 2016**
- ◆ **At November 7, 2016 ESPWG/TPAS:**
 - *NYSEG LTP: the 3rd Oakdale transformer and bus reconfiguration in 2021*
 - *The return of Greenidge (Q431) before summer 2017*
 - *LIPA: will allow load shedding under N-1-1*
- ◆ **Reliability Needs through 2026 have been resolved, so NYISO will not solicit solutions**
- ◆ **CRP Report will be issued in 2017**

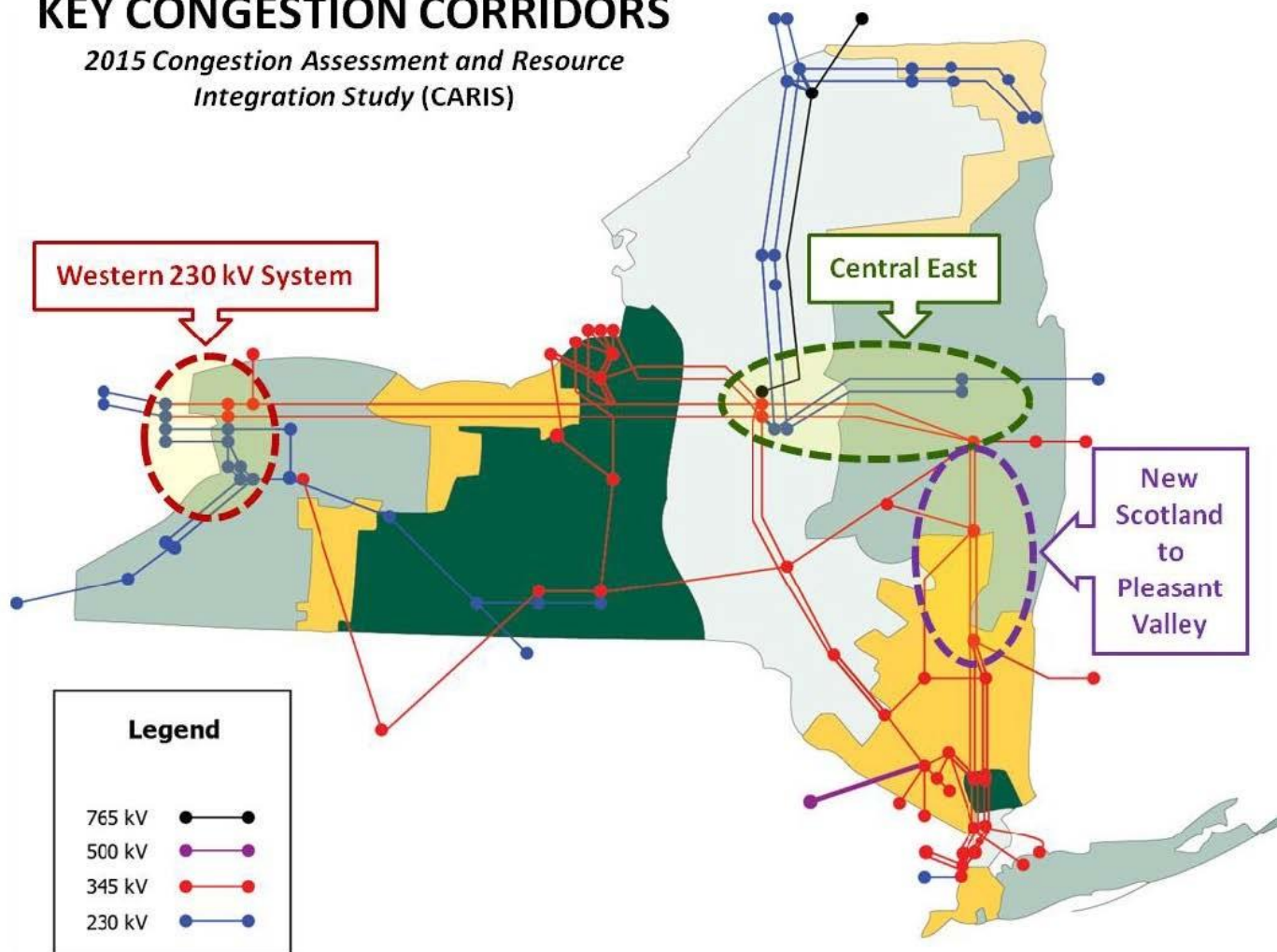
Economic Planning Process

- ◆ **Two-year process: Congestion Assessment and Resource Integration Study (CARIS)**
- ◆ **Phase I: Study Phase**
 - *Performed in alternate years to the RNA*
 - *Determine top congested locations in NYCA*
 - *Develop generic solutions – transmission, generation, demand response, and energy efficiency*
 - *Provide information to developers and marketplace*
- ◆ **Phase II:**
 - *Specific Projects*
 - Transmission projects seeking regulated cost recovery under NYISO Tariff
 - Eligibility threshold: Cost over 25m, B/C ratio over 1.0, 80% beneficiary vote
 - *Additional CARIS Studies*
 - Assumptions and scenarios customizable
 - Confidential except for basic information

2015 CARIS Phase 1

KEY CONGESTION CORRIDORS

2015 Congestion Assessment and Resource Integration Study (CARIS)



2016 CARIS Phase 2

- ◆ **The 2016 CARIS Phase 2 Base Case is complete.**
- ◆ **No Specific Projects submitted as of November 22, 2016**
- ◆ **Additional CARIS Studies**
 - *PPL requested to assess the economic impact of new transmission between Lackawanna, PA and Ramapo, NY*

Public Policy Planning

- ◆ **Two-year process performed in parallel with RNA/CRP**
- ◆ **Phase I: Identify Needs and Assess Solutions**
 - *PSC identifies transmission needs driven by Public Policy Requirements and defines sufficiency criteria*
 - *NYISO solicits solutions (transmission, generation, or EE/DR)*
 - *NYISO evaluates viability and sufficiency of all solutions*
 - *PSC reviews Viability and Sufficiency Assessment (VSA) and confirms continued transmission need*
- ◆ **Phase II: Transmission Evaluation and Selection**
 - *NYISO evaluates viable and sufficient transmission solutions to identify the more efficient or cost-effective solution*
 - *NYISO Board may select a transmission solution for purposes of cost allocation and recovery under the NYISO Tariff*

Western NY Public Policy Transmission Need (PPTN)

- ◆ July 20, 2015 PSC Order: NYISO to consider projects that increase Western NY transmission capability sufficient to:
 - *Obtain the full output from Niagara (2,700 MW including Lewiston Pumped Storage);*
 - *Maintain certain levels of simultaneous imports from Ontario across the Niagara tie lines (i.e., maximize Ontario imports under normal operating conditions and at least 1,000 MW under emergency operating conditions);*
 - *Maximize transfers out of Zone A to the rest of the state;*
 - *Prevent transmission security violations (thermal, voltage or stability) that would result under normal and emergency operating conditions; and*
 - *Maintain reliability of the transmission system with fossil-fueled generation in Western NY out-of-service, as well as in-service.*

Western NY PPTN - Timeline

- ◆ **November 1, 2015 – NYISO issued a solicitation for Public Policy Transmission Projects and Other Public Policy Projects**
- ◆ **December 31, 2015 – Eight developers submitted 15 project proposals**
- ◆ **April 29, 2016 – NYISO issued the draft VSA**
- ◆ **May 30, 2016 – NYISO finalized the VSA and identified 10 viable and sufficient projects**
- ◆ **October 13, 2016 – PSC issued an order confirming the WNY PPTN**
- ◆ **Next steps – NYISO is currently working on the evaluation and selection of transmission solutions**

AC TRANSMISSION PPTN

◆ Segment A (Central East)

- *New Edic/Marcy to New Scotland 345 kV line*
- *Decommission Porter to Rotterdam 230 kV lines*
- *230/345 kV connection to Rotterdam*

◆ Segment B (UPNY/SENY)

- *New Knickerbocker to Pleasant Valley 345 kV line*
- *Rock Tavern substation terminal upgrades*
- *Shoemaker – Sugarloaf 138 kV line*

- ◆ See PSC Order for full description



AC Transmission PPTN - Timeline

- ◆ **December 17, 2015 – PSC issued an Order finding the need for new AC transmission facilities to reduce congestion from upstate to downstate NY**
- ◆ **February 29, 2016 – NYISO issued a solicitation for Public Policy Transmission Projects and Other Public Policy Projects**
- ◆ **April 29, 2016 – Six Developers submitted 16 project proposals**
- ◆ **September 21, 2016 – NYISO issued the draft VSA**
- ◆ **October 27, 2016 – NYISO finalized the VSA and identified 13 viable and sufficient projects**
- ◆ **Next steps – PSC reviews the VSA. If PSC confirms need for transmission, the NYISO will proceed with evaluation and selection of transmission solutions**

2016-2017 Public Policy Planning Cycle

- ◆ **August 1, 2016 – NYISO initiated the 2016-2017 Public Policy Transmission Planning Process (PPTPP) cycle by issuing a solicitation for proposed transmission needs driven by Public Policy Requirements**
- ◆ **September 30, 2016 – 12 entities proposed transmission needs**
- ◆ **October 3, 2016 – NYISO filed the proposals with PSC for its consideration**
- ◆ **Next steps – If PSC determines that there is a need for transmission, NYISO will solicit proposals for specific projects.**

Stakeholder Material

- ◆ **The NYISO Comprehensive System Planning Process is regularly discussed at the Electric System Planning Working Group:**
 - http://www.nyiso.com/public/markets_operations/committees/meeting_materials/index.jsp?com=bic_espwg
- ◆ **Study documentation is available at:**
 - http://www.nyiso.com/public/markets_operations/services/planning/planning_studies/index.jsp

The mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest and provide benefit to consumers by:

- *Maintaining and enhancing regional reliability*
- *Operating open, fair and competitive wholesale electricity markets*
- *Planning the power system for the future*
- *Providing factual information to policy makers, stakeholders and investors in the power system*

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