FEBRUARY 22, 2021

Bulk System Planning Process High Level Design Status Update and Next Steps

Ahmed Maria, Director, Transmission Planning
Alexandra Barrett, Senior Transmission Planning Engineer
Bonnie Chan, Senior Planner
Steve Norrie, Senior Transmission Planning Specialist

ieso
Connecting Today. Powering Tomorrow.

Webinar Participation (including audio)

- To interact, click the "Show Conversation" icon (message bubble symbol) to submit a written question or click on the "Raise hand" icon (hand symbol) at the top of the application window to indicate to the host you would like to speak
- Audio should be muted at all times. To unmute audio, click on the microphone icon at the top of the application window
- This webinar is conducted according to the IESO Engagement Principles

Webinar Participation (Connection Issues)

- If you experience issues logging in:
  - Disconnect from remote server connections (VPN) and try logging in again
  - Download the mobile app and join through mobile
- Need help? Contact Microsoft Office Support

Agenda

- Scope of today's discussion
- Introduction to the Bulk System Planning Process
- Proposed High Level Design (HLD)
- Feedback from previous engagements
- Related IESO activities
- Discussion
- Next Steps

Scope of Today's Discussion (Why are we Here?)

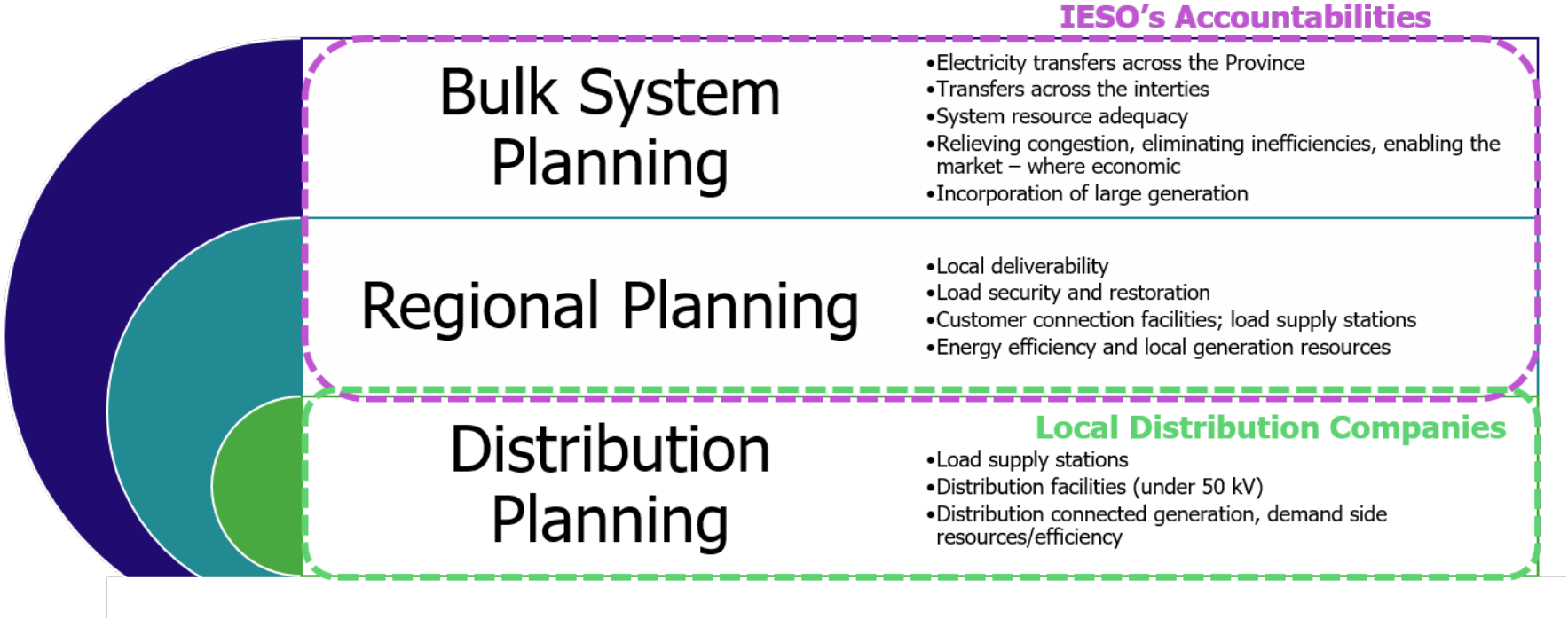
- Build understanding of how the IESO plans the bulk power system
- Discuss a proposed high level design for a new process for planning the bulk power system, and inform stakeholders about how bulk system planning fits in relation to the IESO's Resource Adequacy Framework and Annual Acquisition Report
- Seek feedback on the high level design, specifically, feedback on how stakeholders want to participate in bulk system planning
- Present next steps in the process design and the timeline for implementing the new process

Introduction to Bulk System Planning Process

Planning and the IESO's Mandate

- The IESO is accountable for planning the integrated power system to cost-effectively maintain the reliability of the IESO-controlled grid
  - The IESO makes use of planning processes to plan the power system, including the Regional Planning Process as endorsed by the Ontario Energy Board, and the IESO's Bulk System Planning Process
- The power system plans produced through these processes help enable new customers to connect (i.e., ensure grid can deliver the required power), help protect rate-payer interests by balancing supply and demand, and facilitate implementation of government policy

Levels of Electricity Planning and Their Scope



Formalizing the Bulk System Planning Process

This initiative will formalize the bulk system planning work that the IESO already does, including:

- Identifying system issues such as performance relative to reliability standards
- Identifying opportunities to enhance the cost-effectiveness of the system
- Making recommendations for courses of action to address issues and/or capitalize on opportunities

Why Formalize the Bulk System Planning Process?

- This initiative intends to achieve the following:
  - Provide stakeholders with a better understanding of power system plans and outlooks via a more transparent and public process
  - Obtain the best possible information to identify system issues and/or opportunities and possible solutions to address them
  - Identify consistent timelines and regular reporting to help foster more effective engagement and better integration with downstream processes (e.g., resource acquisition)

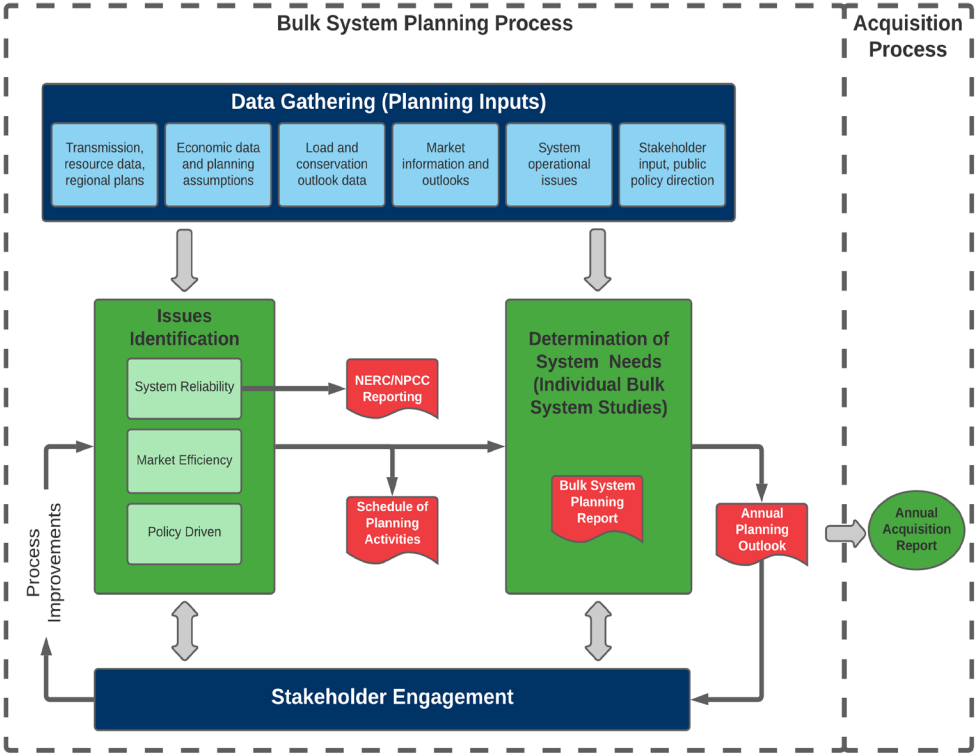
Proposed High Level Design (HLD)

Proposed HLD of Bulk System Planning Process

Components of the Process:

- Data Gathering
- Issues Identification
- Determination of System Needs
- Process Improvements

Opportunities for stakeholder engagement are envisioned at each stage of the process



Data Gathering (Planning Inputs)

- Gathering and maintaining the data needed to undertake planning studies is an ongoing activity
- The High Level Design identifies the categories of data that will require regular review, updates or validation
- This data is used in all power system planning studies at the IESO (e.g., in assessing system issues as well as analyzing solution options)

Data Gathering – Stakeholder Engagement

- Stakeholders will be able to provide information to the IESO that can be considered in the scoping and identification of system issues
- Examples of stakeholder input could include (but are not limited to):
  - New or prospective customer loads, experience/observations of system reliability, suggestions for improving the planning process
  - Updated cost, feasibility, and performance assumptions for technology types, particularly non-wires alternatives

Issues Identification

- This is the critical step for discovering and analyzing potential system issues and/or opportunities that will need to be addressed
  - This annual exercise may cover system reliability (applying the established reliability standards), market efficiency (assessing opportunities to alleviate transmission constraints or access to lower cost capacity), and/or public policy drivers
- System issues will be documented in the Annual Planning Outlook, and the IESO's timeline for completing the system planning studies to address those issues will be published in a new report, a "Schedule of Planning Activities"

Issues Identification – Stakeholder Engagement

- As Issues Identification will be triggered on a cycle (e.g., annually); the IESO will determine the scope of assessments for each cycle based on:
  - Material changes in system conditions since the previous cycle; requirements for compliance/reporting for NERC/NPCC; or other triggers such as assets reaching end-of-life or new public policies
- Stakeholder input will help the IESO identify future system issues/opportunities, and the IESO will inform stakeholders about the nature of the system issues uncovered through the assessment

Determination of System Needs

- Individual Bulk System Studies will be done in accordance with the timeline set out in the Schedule of Planning Activities
- While the scope of each study will depend on the issue(s) to be addressed, all Bulk Studies generally develop and evaluate solution alternatives, and make recommendations on what is needed to resolve the issue (e.g., transmission, capacity, energy, ancillary services, etc.)
- Each Bulk Study will be documented in Bulk System Planning Report; the Annual Planning Outlook will summarize the resources that are needed and will serve as an input to inform downstream processes for implementation (e.g., acquisition mechanisms)

Determination of System Needs – Stakeholder Engagement

- Engagement is a key part of a Individual Bulk System Study, both early in the study in seeking input on possible solution alternatives, and later in the study in performing evaluations aimed at making plan recommendations

- An engagement plan specific to each Individual Bulk System Study will be developed, published, and executed over the course of the study

Process Improvements

- This process initiative is largely about formalizing bulk system planning as it is presently carried out by the IESO, with opportunities for improvements to ensure a more transparent, regular and integrated process
- Following implementation of the process, reviews will be conducted regularly to ensure objectives are being met
- Stakeholder feedback is expected to be a key consideration for identifying improvements to the process

Bulk System Planning Process - Summary

Key features of the Process:

- Annual review and identification of potential system issues, and regular reporting
- Transmission Planning and Resource Planning completed under one process
- Coordination with NPCC/NERC Reporting and compliance requirements
- Coordination between bulk system planning and regional plans
- Bulk System Studies done as needed, according to a published Schedule of Planning Activities
- Defining the linkages between system planning and resource acquisitions
- Continuous improvement an inherent part of the process, conducted through stakeholder engagement and regular process refinements

Feedback from Previous Engagements

Engagements Over the Past Years

- The IESO carried out a series of activities in 2018 through late 2020, including public webinars, discussions at related forums including the First Nations Energy Symposium, IESO Regional Forums, Technical Planning Conferences in 2018 and 2020, and stakeholder engagement in in late 2020

- The IESO incorporated feedback following these engagements to inform the development of the high level design of the Bulk System Planning Process

Feedback from Previous Engagements

- **What we heard**: Bulk planning needs regular reporting and consistent timelines
- **How we've incorporated it into the process design:** A more structured process with consistent timelines and regular reporting, including the Annual Planning Outlook, a new report to be introduced called the Schedule of Planning Activities, and individual bulk system studies documented in Bulk System Planning Reports

Feedback from Previous Engagements (2)

- **What we heard:** Early notification of potential system issues/needs

- **How we've incorporated it into the process design:** We included regular touchpoints and interactions with stakeholders in the high level design of the process

Feedback from Previous Engagements (3)

- **What we heard:** Opportunities to provide input on reports before finalization
- **How we've incorporated it into the process design**: Enable opportunities for stakeholders to provide input in the development of study scopes, alternatives for consideration for addressing the issues identified, to the evaluation of plan recommendations in Individual Bulk System Studies

Related IESO Activities

Linkage to Resource Adequacy Engagement

- The IESO is working with stakeholders through its Resource Adequacy engagement to enable a framework of competitive mechanisms to meet Ontario's resource adequacy needs
- While capacity auctions will meet short-term needs, the IESO is exploring other acquisition tools that will offer longer commitments as part of this engagement
- The outputs from the Bulk System Planning Process (e.g. Annual Planning Outlook) will inform the acquisition targets and mechanisms moving forward, and the Annual Acquisition Report

Linkage to Regional Planning

Regional Planning and Bulk System Planning are carried out under different processes because the nature of the issues, stakeholders involved, and the nature of solutions are different

These two process are interdependent – the Bulk System Planning Process will define the interactions with Regional Planning

For example:

- Regional plans may uncover issues that are more appropriately addressed through a bulk system plan
- Some bulk system solutions may benefit from regional coordination

Discussion

Stakeholder Feedback

- Where in the process do you feel that you need, or would benefit from, being engaged by the IESO as we carry out planning for the bulk power system?
- At those touchpoints, what level of engagement is useful to you (e.g. having the opportunity to be informed, and/or provide input or feedback to the IESO, etc.)?
- What specific types of information would you like to see come out of a Bulk System Planning Process that would be helpful for you?

Stakeholder Feedback (2)

- Please use the feedback form found under the February 22, 2021 entry on the Formalizing the Integrated Bulk System Planning Process webpage

- Send written feedback to engagement@ieso.ca by March 15, 2021

Next Steps

Next Steps

- Following this engagement, the IESO will receive feedback and refine the high level design, while developing out the process at a more granular level
- In Q3/Q4 2021, there will be a second engagement on the final Bulk System Planning Process with more information on the detailed process elements related to transparency and stakeholder engagement; additional engagement may seek further input on specific process items
- In 2022, the IESO will begin transitioning to operationalize bulk system planning in accordance with the Bulk System Planning Process

Thank You

ieso.ca

1.888.448.7777

customer.relations@ieso.ca

engagement@ieso.ca

@IESO_Tweets

facebook.com/OntarioIESO

linkedin.com/company/IESO

ieso
Connecting Today. Powering Tomorrow.