

Introduction to the Energy Storage Design Project (SDP)

February 4, 2020

Brennan Louw

Senior Manager System and Sector Development

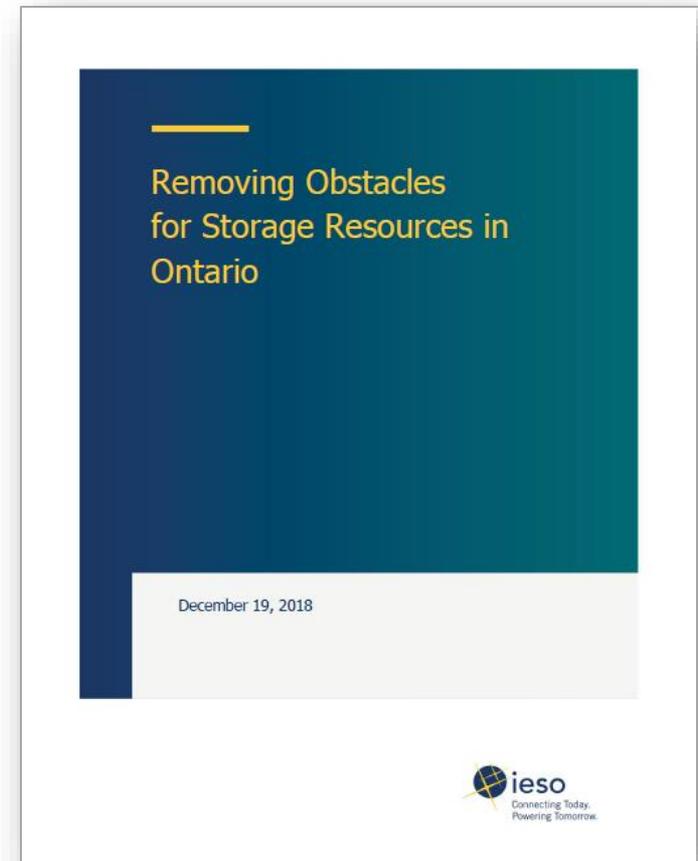
IESO

Summary

- The Energy Storage Design Project (SDP) will:
 1. Clarify how energy storage resources (ESRs) can participate in today's IESO Administered Markets (IAMs), and
 2. Provide a vision for how ESRs will participate on an enduring basis markets resulting from Market Renewal Program (MRP), once investment in IESO tool upgrades to fully integrate ESRs are made
- This project is an important step towards ensuring ESRs can compete to reliably and efficiently provide needed system services
- A key deliverable for the project is market rule amendments to clarify how ESRs can participate in today's IAMs
 - Expect to stakeholder market rule and related manual changes through the Energy Storage Advisory Group (ESAG) in spring 2020
 - Expect Technical Panel review of market rules beginning in the summer of 2020

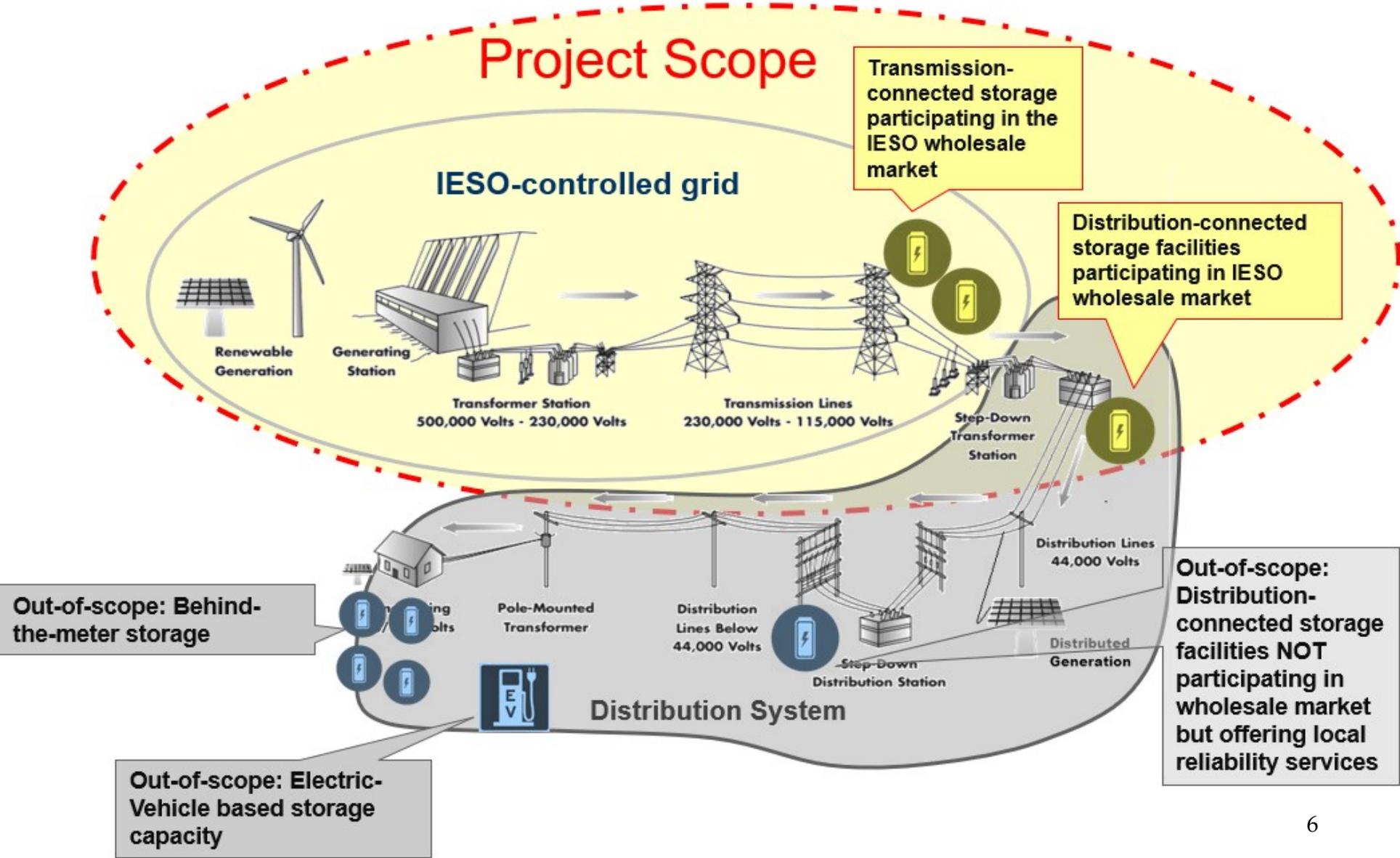
Recent IESO/Storage Milestones

- December, 2018: Energy storage obstacles report
- July, 2019: Prospective energy storage work plan discussed with ESAG
- August, 2019: Plan for energy storage in June 2020 Capacity Auction* announced
- **October, 2019: Energy Storage Design Project (SDP) announced**



*Capacity Auction scheduled for May 2021 delivery period

Scope of Facilities Involved



Project Inputs and Phasing

Previous IESO efforts:

- Energy storage obstacles – identification and prioritization
- Examination of U.S. system operator responses to FERC order 841
- Research, pilot projects and stakeholder input

Guidance

Learnings

Energy Storage Design Project

Design

Two Key Phases:

- Interim measures to clarify how ESRs can participate in today's IAMs
- Long-term vision for how energy storage resources will participate on an enduring basis in the IAMs (*once investment in IESO tool upgrades to fully integrate ESRs are made*)

Project Deliverables

The project includes four key deliverables:

1. Design Document

- Answer key questions about how the IESO will treat storage in IESO-Administered Markets (IAMs)
- Reflect different timeframes (e.g. e.g. greater detail for interim / pre-MRP measures and higher-level design discussion for long-term / post-MRP changes)

2. Market Rules and Manuals

- Draft and invite stakeholder feedback on market rule/manual language required to implement interim measures
- Produce inventory and description of future market rules/manual changes required to implement long-term design questions addressed in the project

3. Inventory of IESO Tool/Process Changes

- Develop a list of tools/processes that will require updating to enable design questions addressed in the project

4. Schedule for Market Updates

- Develop an integrated schedule to roll out changes that reflects dependencies on/timing of other initiatives

Sample of Interim Design Questions

- How should ESRs be registered into the IESO-administered markets?
- Should ESRs > 10 MW be allowed to self-schedule?
- What prudential security requirements will apply to ESRs?
- How should ESRs participate in the Day-Ahead Commitment Process?
- How should ESRs participate in the Day-Ahead Commitment Process?
- What guidelines or restrictions should be placed on ESRs providing operating reserve?

Sample of Interim Design Questions

- How should ESRs manage their state of charge in the real-time market?
- What guidelines or restrictions should be placed on ESRs providing operating reserve?

Market Rule Approach For Interim Measures

- The SDP will produce market rule and manual changes to reflect the interim design and clarify treatment of energy storage resources throughout the rules
- Draft market rules and manuals will be discussed with stakeholders through ESAG prior to Technical Panel review
- Expect to have changes to existing defined terms and some new defined terms
- Some changes may apply to the interim period only while others may endure over the longer term

Next Steps

- Draft design document to be published week of February 3 to the ESAG [webpage](#)
- February 18 ESAG meeting is scheduled to walk through design proposals for the interim period
- Expect to take draft market rules and manuals to ESAG in Q2
- Expect Technical Panel review of the market rules over the summer period
 - TP will receive further status updates as the project progresses

Questions & Comments?

