AESO System Transmission Project Criteria

Stakeholder Session

October 14, 2021

Notice

In accordance with its mandate to operate in the public interest, the AESO will be audio recording this session and making the session recording available to the general public at www.aeso.ca. The accessibility of these discussions is important to ensure the openness and transparency of this AESO process, and to facilitate the participation of stakeholders. Participation in this session is completely voluntary and subject to the terms of this notice.

The collection of personal information by the AESO for this session will be used for the purpose of capturing stakeholder input for the System Transmission Project Criteria stakeholder session. This information is collected in accordance with Section 33(c) of the *Freedom of Information and Protection of Privacy Act*. If you have any questions or concerns regarding how your information will be handled, please contact the Director, Information and Governance Services at 2500, 330 – 5th Avenue S.W., Calgary, Alberta, T2P 0L4, by telephone at 403-539-2528, or by email at privacy@aeso.ca.

Using Zoom – Asking questions

- Two ways to ask questions if you are accessing the webinar using your computer or smartphone
  - Click “Raise Hand” and the host will be notified that you would like to ask a question. The host will unmute your microphone, you in turn will need to unmute your microphone and then you can ask your question. Your name will appear on the screen, but your camera will remain turned off.
  - Click “Lower Hand” to lower it if needed.
  - You can also ask questions by tapping the “Q&A” button and typing them in. You’re able to up-vote questions that have been already asked.
- If you are accessing the webinar via conference call
  - If you would like to ask a question during the Q&A portion, on your phone’s dial pad, hit *9 and the host will see that you have raised your hand. The host will unmute your microphone, you in turn will need to unmute your microphone by hitting *6 and then you can ask your question. Your number will appear on the screen.

AESO Stakeholder Engagement Framework

Agenda

- Purpose
- Background
- AESO’s system transmission project criteria
- Additional example regarding connection facilities
- Discussion & questions

Purpose

- To engage with DFOs and other industry stakeholders on the AESO's criteria for the initiation of system transmission projects, as directed by the AUC in Decision 22942-D02-2019 (re: AESO's 2018 ISO tariff):
  - "to work with DFOs to develop an objective set of criteria for the initiation of system transmission projects reflecting the Commission's findings in [the] decision"; and
  - "to report on the status of such discussions, including a discussion of any criteria the AESO would propose for determining "grey area" system projects at the time of its next comprehensive GTA"

- Following stakeholder engagement, the AESO will be filing a report with the AUC to demonstrate compliance with its directions

Discussion guide

- This session is intended to provide stakeholders with the opportunity to ask questions, seek clarification, and understand the AESO's criteria for the initiation of system transmission projects ("Criteria") and how the AESO applies the Criteria
- This session primarily focuses on the **details and application** of the Criteria
  - The session is not intended as an opportunity to discuss changes to the current ISO tariff, or to the AESO's current business practices, approaches or processes
- Following an engagement session on Oct 14th, the AESO will seek stakeholder feedback on key questions via comment matrix, including:
  - Did this session help you understand the Criteria?
  - Are there potential challenges, barriers, or risks presented by the Criteria?
  - Are there any outstanding "grey areas" that need to be clarified?
  - Based on the above, would you suggest adjustments to the Criteria?

Our Criteria approach

- We are clarifying the Criteria
- We will apply these clarified Criteria on a go-forward basis
- We are providing examples to illustrate how we intend to apply these Criteria going forward
- As we cannot predict what all the future cases could be, we will apply these Criteria on a case-by-case basis
- Together with the ISO Tariff and the legislation, the Criteria provides the AESO with the framework to address and manage “grey area”

Background

AESO's role in transmission planning

- Planning the transmission system
  - 20-year Long-term Transmission Plan (LTP) updated every two years
  - Identification of potential future transmission projects needed to:
    - Meet reliability obligations, including congestion requirements
    - Enable generation and load connections
    - Enable efficiencies
- Facilitate approval and triggering of needed transmission projects
  - Needs identification document (NID) filings for AUC approval

Considerations

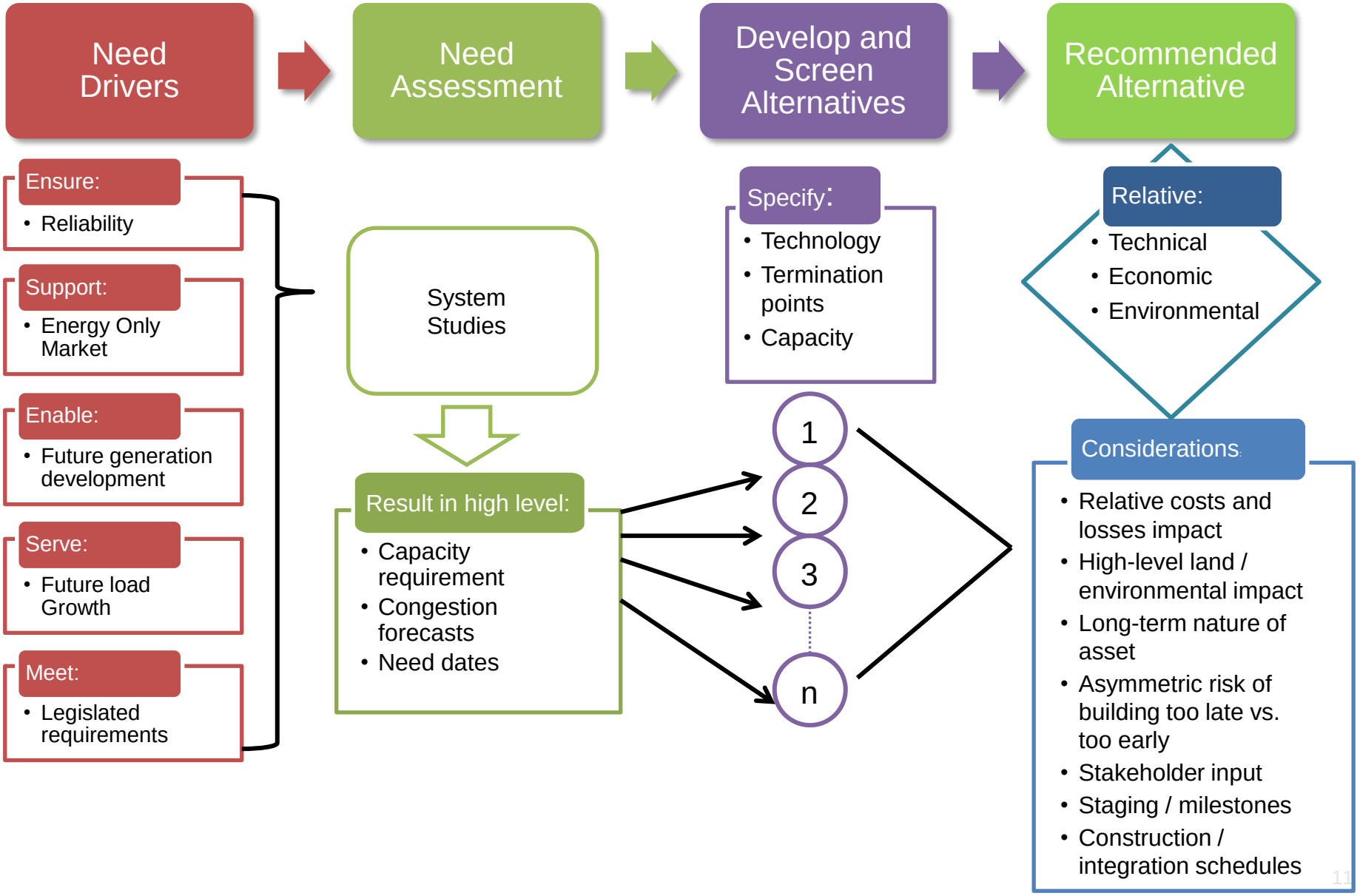
Cost & Reliability

Environment

Flexibility

Socioeconomic

AESO transmission system need development process



Cost recovery

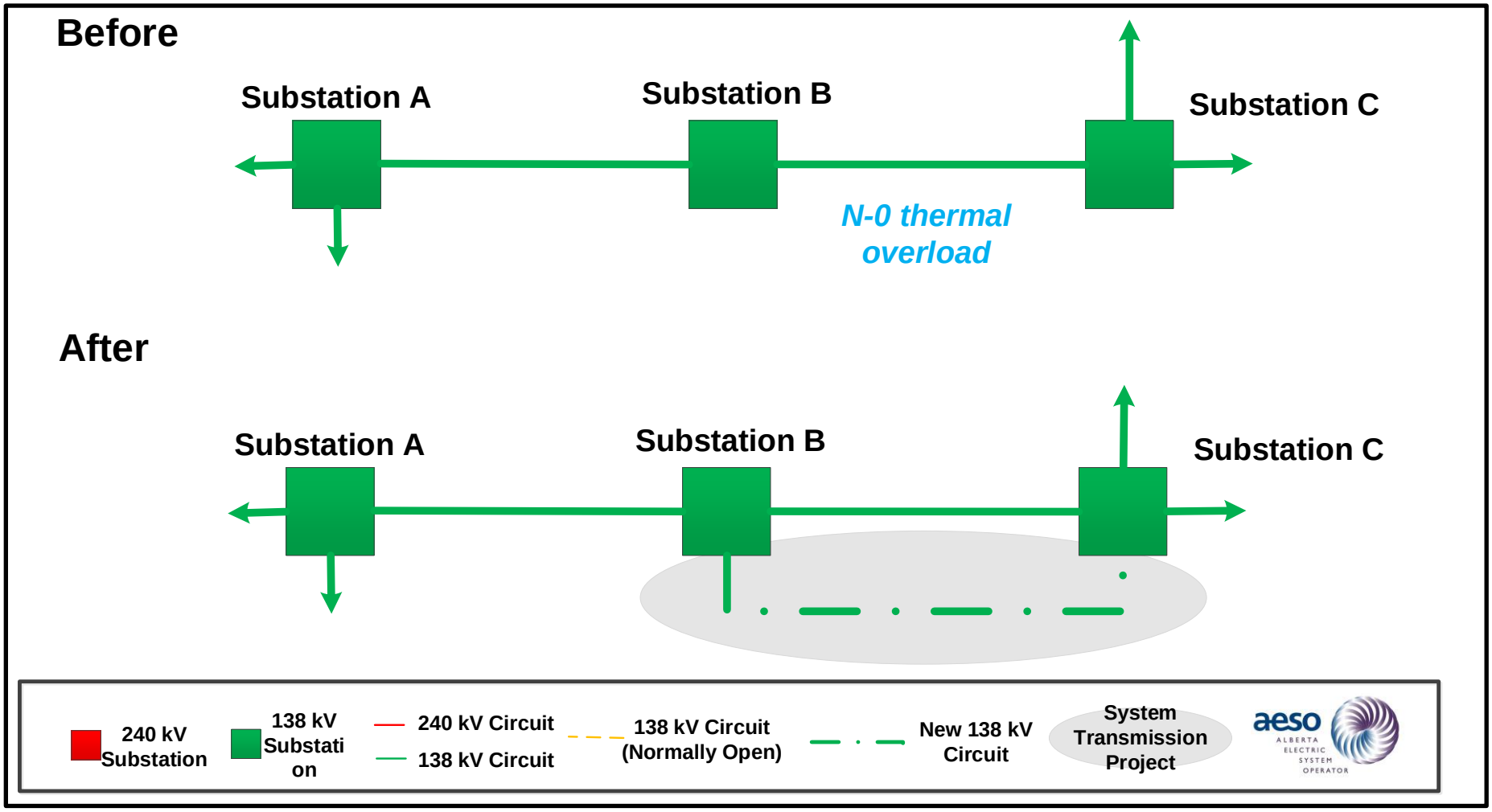
- Section 34(1) of the *Electric Utilities Act* distinguishes between
  - "system transmission projects" initiated by the AESO on the basis of an AESO-identified need for transmission system expansion or enhancement (sections 34(1)(a), (b)), and
  - "connection projects" that are required in response to a market participant SASR (section 34(1)(c))
- **System transmission project:** Costs are recovered from Rate DTS (load) ratepayers in accordance with the ISO tariff
- **Connection project:** ISO tariff requires the AESO to classify the costs as either:
  - "*system*-related" (stemming from section 34(1)(a) or (b)), in which case the costs are recovered from load ratepayers through the ISO tariff, or
  - "*participant*-related", in which case the costs are recovered through a combination of an up-front contribution payment to be paid by the market participant that submitted the relevant SASR and, for load connection projects, "AESO investment" that is recovered over time from load ratepayers
- Cost classification for **connection projects** is carried out by the AESO in accordance with the provisions of section 4 of the ISO tariff

The Criteria

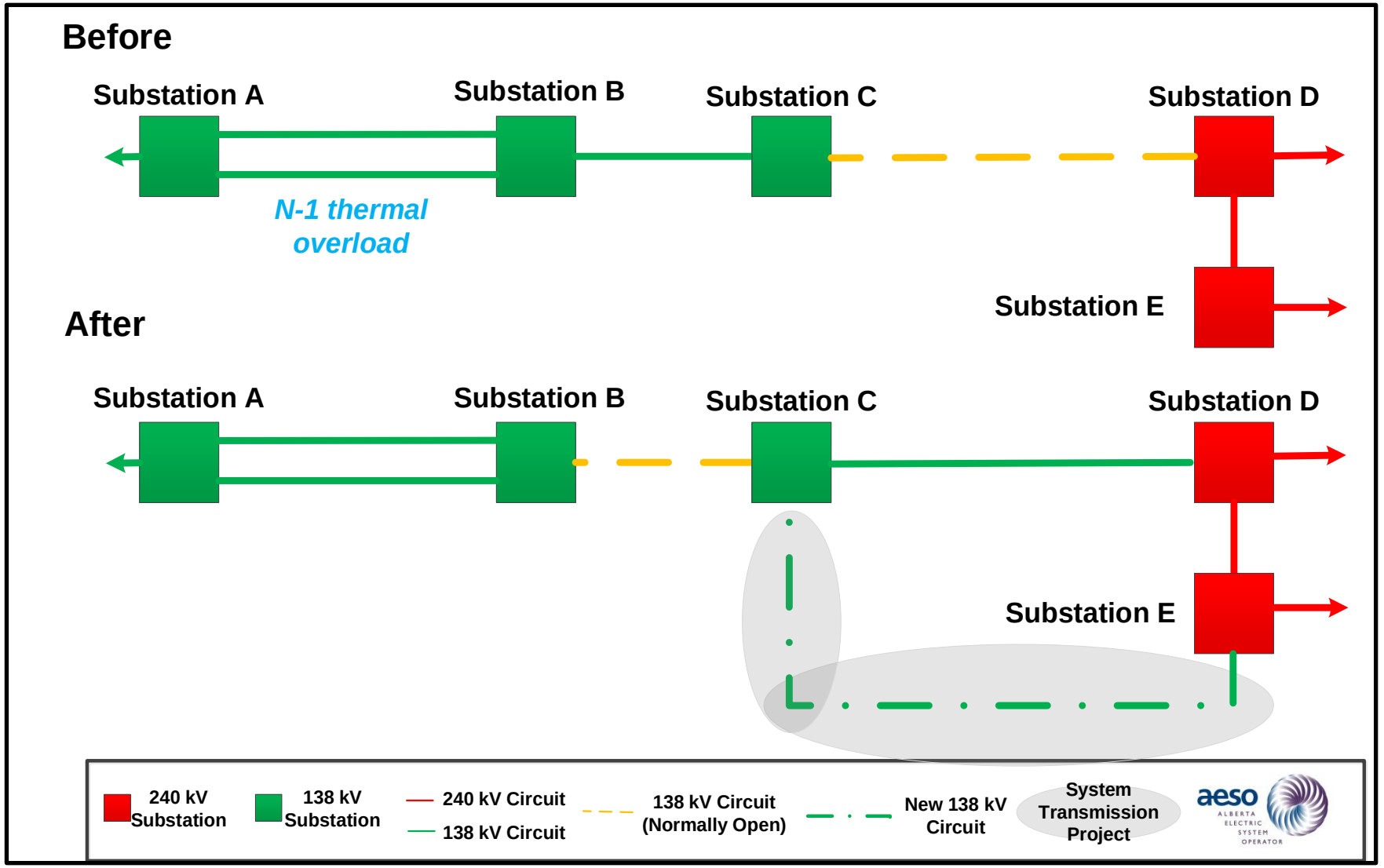
Criteria #1 – Meeting our Mandate

- **Criteria #1**: *Transmission Regulation* or Reliability Criteria violation leading to the need for transmission development
  - The AESO must follow legislative requirements (including congestion performance requirements), Alberta reliability standards, and planning criteria when planning the transmission system to meet AESO forecast conditions (collectively, “Reliability Criteria”)
  - Refers to Reliability Criteria violations under N-0 conditions for *generation* and Reliability Criteria violations under N-0 and N-1 conditions for *load*
  - If a transmission system need and a distribution system deficiency occur at the same time or the DFO submits a SASR prior to the AESO initiating a system project for the area, the ISO tariff will be used to apportion the connection project costs between *participant*-related and *system*-related
- AESO’s project prioritization process is used to determine what system needs should be addressed as part of a system transmission project
  - AESO may advance an urgent system need identified outside of the LTP and prioritization process timeline; however, the Criteria must be followed
- Criteria #1 follows the principle of ensuring system reliability

Criteria #1 Example : Addressing generation driven reliability/congestion violation for N-0 overload



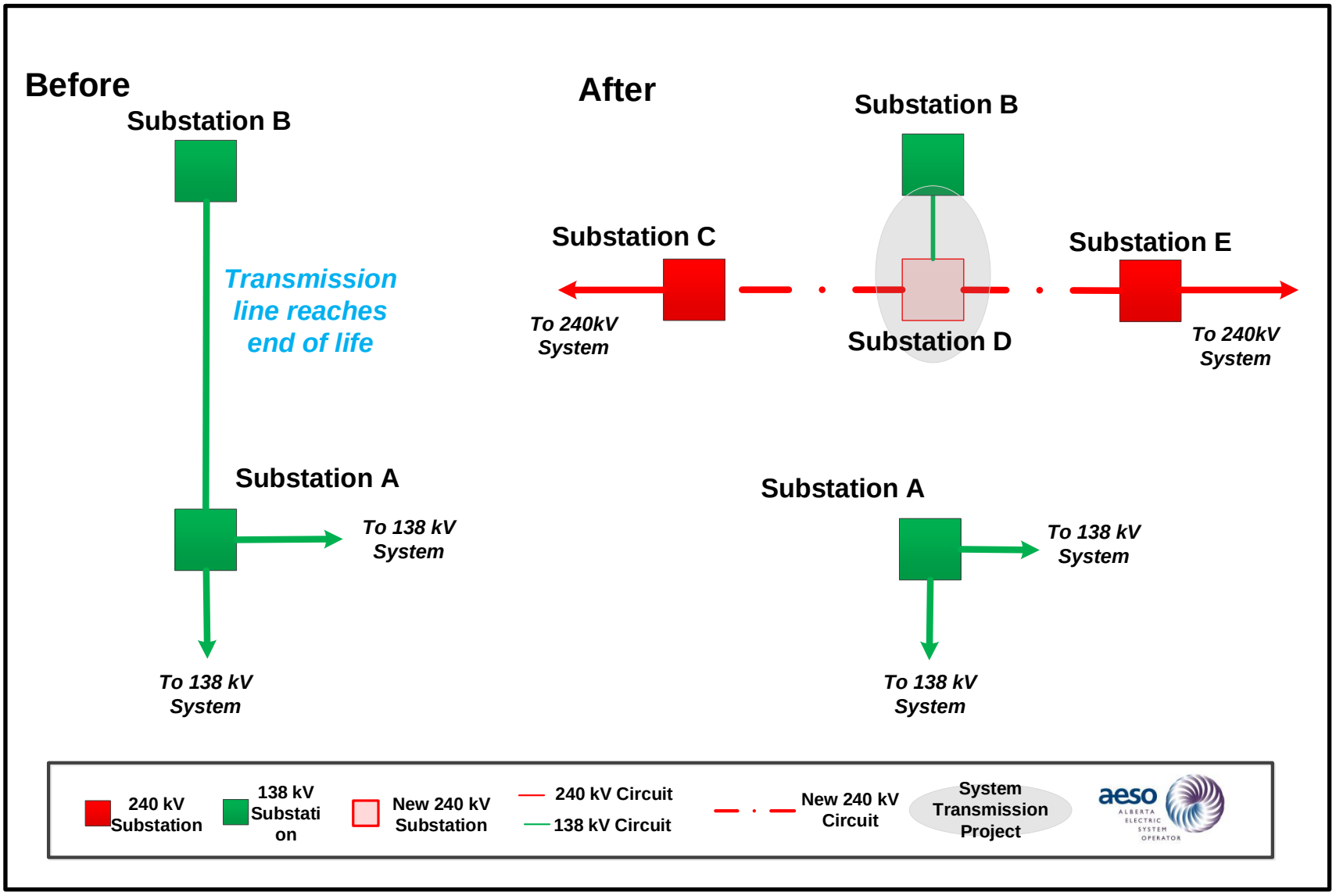
Criteria #1 Example : Addressing load driven N-1 reliability violation due to overloads



Criteria #2 – Optimizing with End of Life Assets

- **Criteria #2**: Transmission facilities nearing end-of-life are in the vicinity of where a transmission need currently exists, providing an opportunity to investigate the benefits of a system reconfiguration
  - AESO, in coordination with the TFO, determines that the option of a system reconfiguration would result in a better overall solution when compared to like-for-like replacement for end-of-life asset
  - TFO expected to defend assessment of asset condition
  - The timing of when an asset reaches end-of-life must coincide with the timing of a system need or construction timelines of transmission developments already associated with a system transmission project
  - System benefits can include:
    - System reconfiguration is a lower cost option than a like-for-like replacement
    - Reduction of environmental and land use effects in the area, compared to a like-for-like replacement
    - Help reduce or mitigate a system need that already exists in the vicinity
- Criteria #2 follows the principle of promoting system efficiency

Criteria #2 Example : Coordinating system development with asset end of life

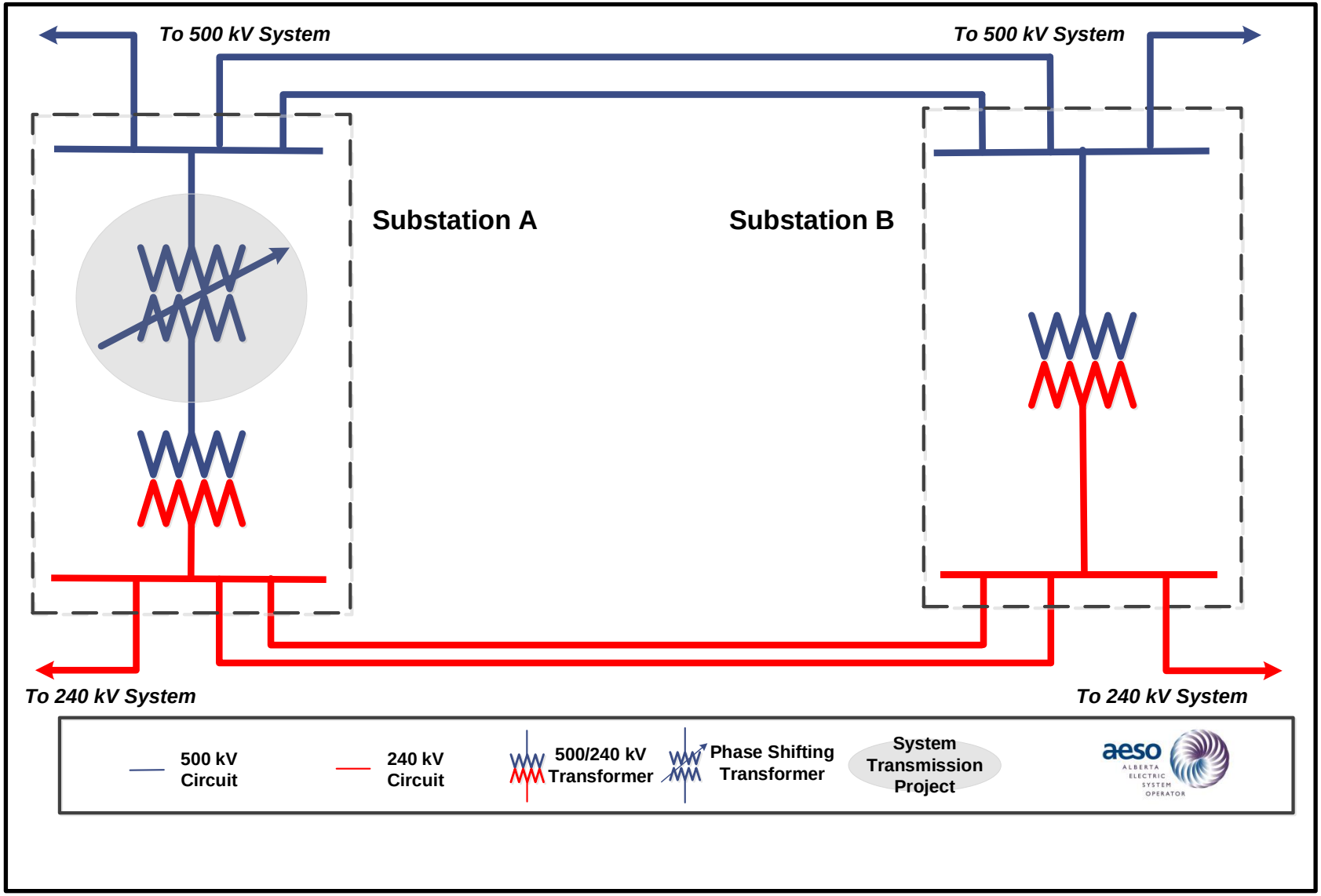


Criteria #3 – Optimizing the Grid

- **Criteria #3**: Modifying the existing transmission system to optimize the grid
  - There is no Reliability Criteria violation
  - Optimize the transmission system for better efficiency, which includes lower overall cost and improved system performance
  - The AESO will demonstrate the benefits

- Criteria #3 follows the principle of lowering overall electricity cost for ratepayers or improving system performance

Criteria #3 Example: Optimizing system using a phase shifting transformer



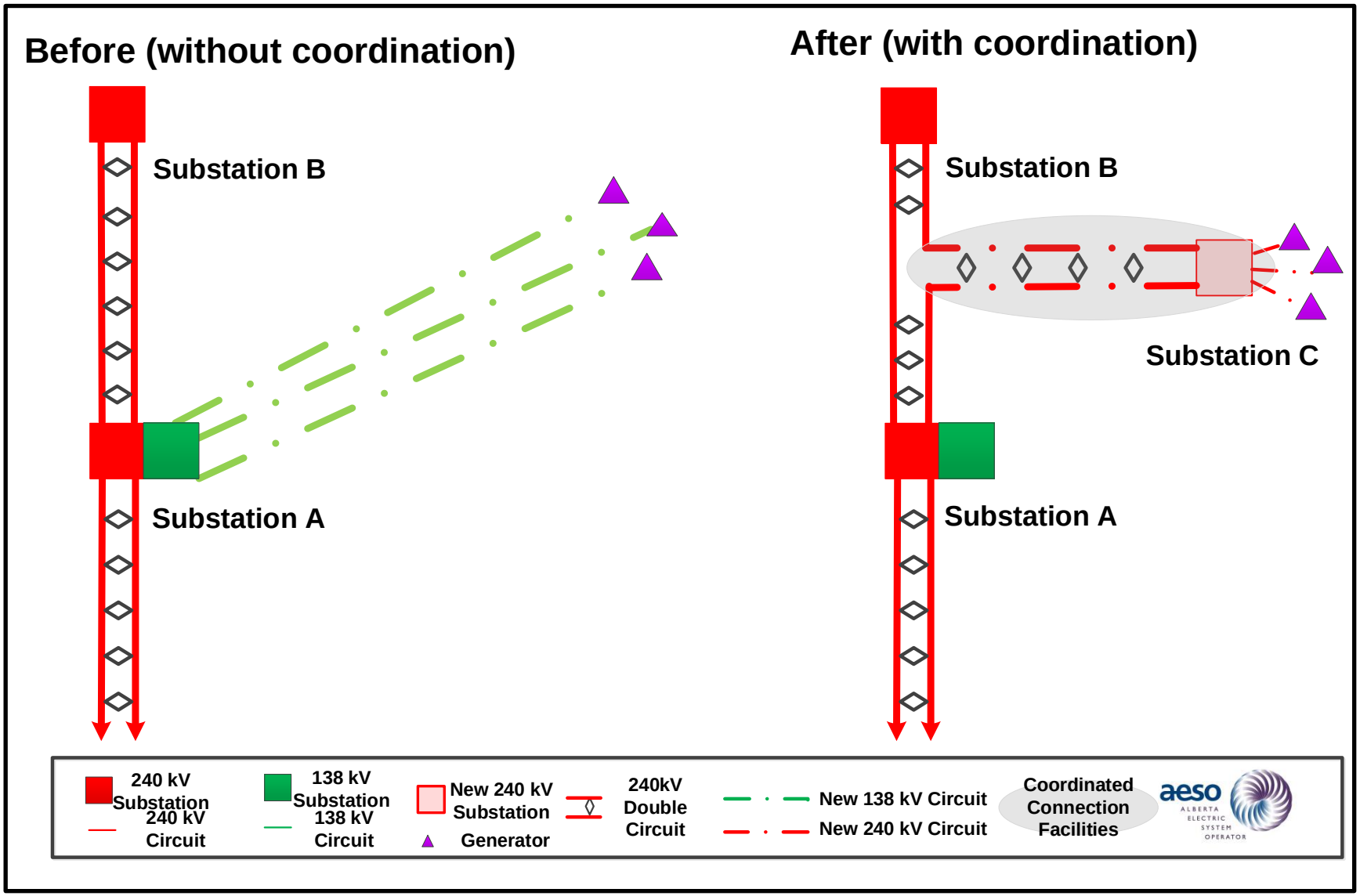
Additional Example regarding Connection Facilities

Opportunities for coordinated connection facilities as a connection project

- When the AESO receives SASRs from multiple market participants in the same vicinity that has high growth potential, there is an opportunity for the AESO to investigate the benefits of coordinated connection facilities versus a multitude of individual connection developments
  - For example, construction of a new collector system or a higher voltage connection solution can be implemented to more efficiently accommodate multiple SASRs in a given area

- **Condition:** The coordinated transmission development is expected to be a better overall solution than the individual connection solutions

Example of coordinated connection facilities



Discussion

Thank you