Central East Transfer-out (CETO) Transmission Development

Reaffirmation Study Results

April 2022

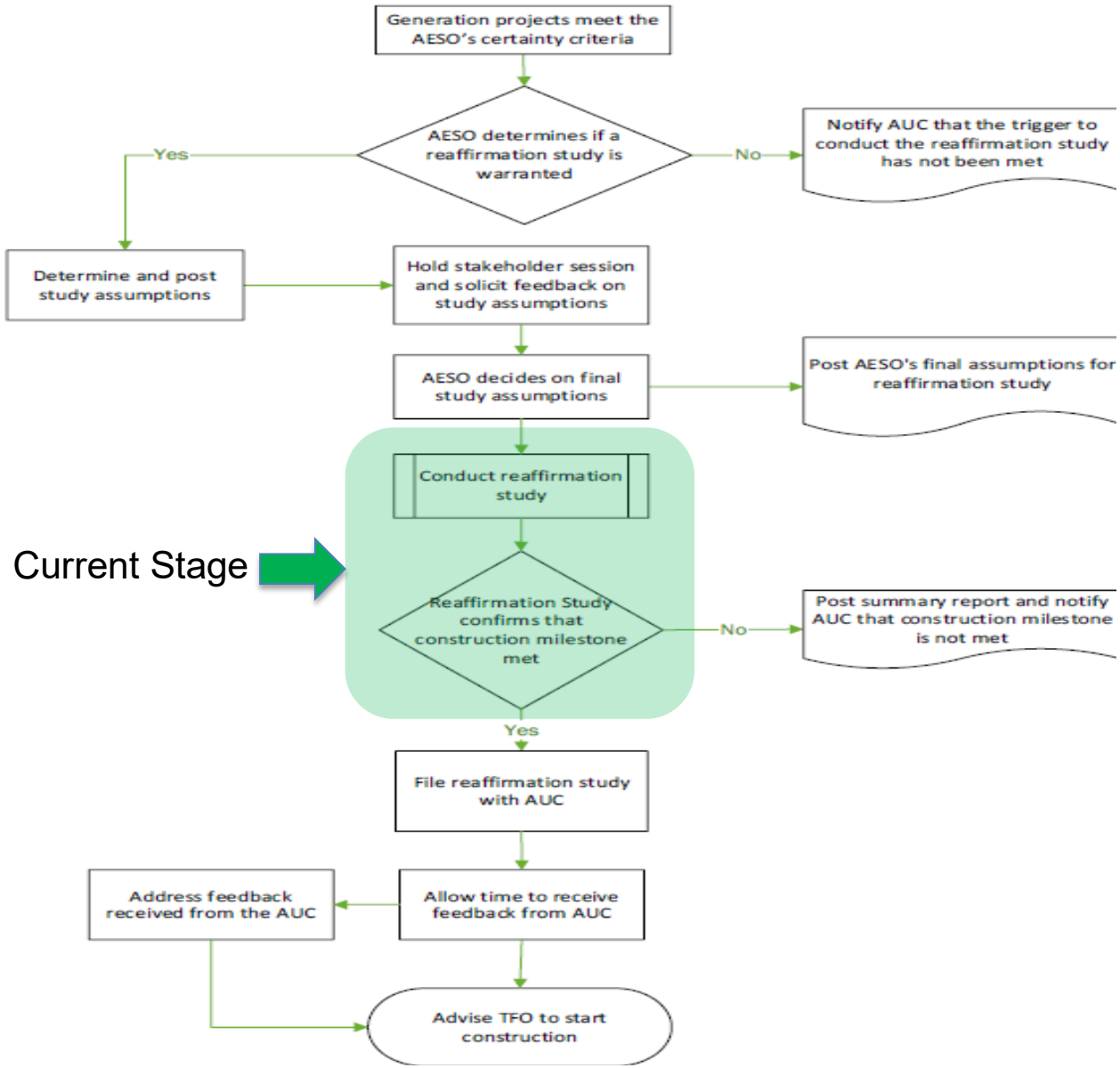
Background for Reaffirmation Study

- The AESO's Needs Identification Document (NID) and the transmission facility owners' Facility Applications were approved by the Alberta Utilities Commission in August 2021

- The CETO milestone upper limit (generation projects meeting certainty criteria) was reached as of October 2021

- Therefore, the AESO performed a reaffirmation study using the most up-to-date information to:
  - Provide an updated congestion forecast
  - Confirm if Stage 1 of construction for CETO should be triggered

CETO Reaffirmation Process (as Filed)



Review of Study Assumptions: Generation

- Using generation information available at the end of Jan. 2022

Incremental Renewables Generation

- **Scenario 1** — Projects meeting inclusion criteria (sufficiently certain)
- **Scenario 2** — Proponents have indicated their commitment to advance the project by securing the required financing
- **Scenario 3** — Proponents have indicated they are in the final stages of securing the required financing

Scenarios	Incremental Renewables Generation in the Study Area (MW)		
	CE	SE	Total
Scenario 1 | in addition to installed generation	350	1,057	1,407
Scenario 2 | in addition to Scenario 1	610	975	1,585
Scenario 3 | in addition to Scenario 2	60	705	765

Review of Study Assumptions: Generation

- Thermal generation in the study area
  - BR/SH were considered as peaking units in the study
  - Sensitivity is to be performed assuming their retirement if CETO is triggered with BR/SH in service
- Generation outside of the study area
  - Only existing generation and generation projects meeting certainty criteria were included
  - Both Cascade (900 MW) and Suncor co-gen (800 MW) met certainty criteria
  - In the SW sub-region:
    - Total installed renewables generation is 1,900 MW
    - Total generation projects meeting certainty criteria is 400 MW
- Other key assumptions
  - 2024 average natural gas price → $2.86/GJ
  - 2024 carbon price → $80/ton

Review of Study Assumptions: System

- Key monitored transmission lines
  - In the original congestion assessment performed for CETO NID application, no congestion on 9L16 was observed as locations of future generation projects were optimized to identify the maximum generation integration capability
  - The reaffirmation study used the actual locations of future generation projects; congestion was observed on 9L16 as well
  - Therefore, 9L16 is also added to the list of key monitored lines

Transmission Line	Substation 1	Substation 2	Voltage Class (kV)	Summer Rating (MVA)	Winter Rating (MVA)
912L	Red Deer 63S	Nevis 766S	240	507	624
9L20	Cordel 755S	Nevis 766S	240	489*	540
174L	North Holden 395S	Bardo 197S	138	120	145
701L	North Holden 395S	Strome 223S	138	119	146
7L701	Battle River 757S	Strome 223S	138	142	192
9L16	Tinchebray 972S	Cordel 755S	240	499	499

** Transmission Capital Maintenance (TCM) work required*

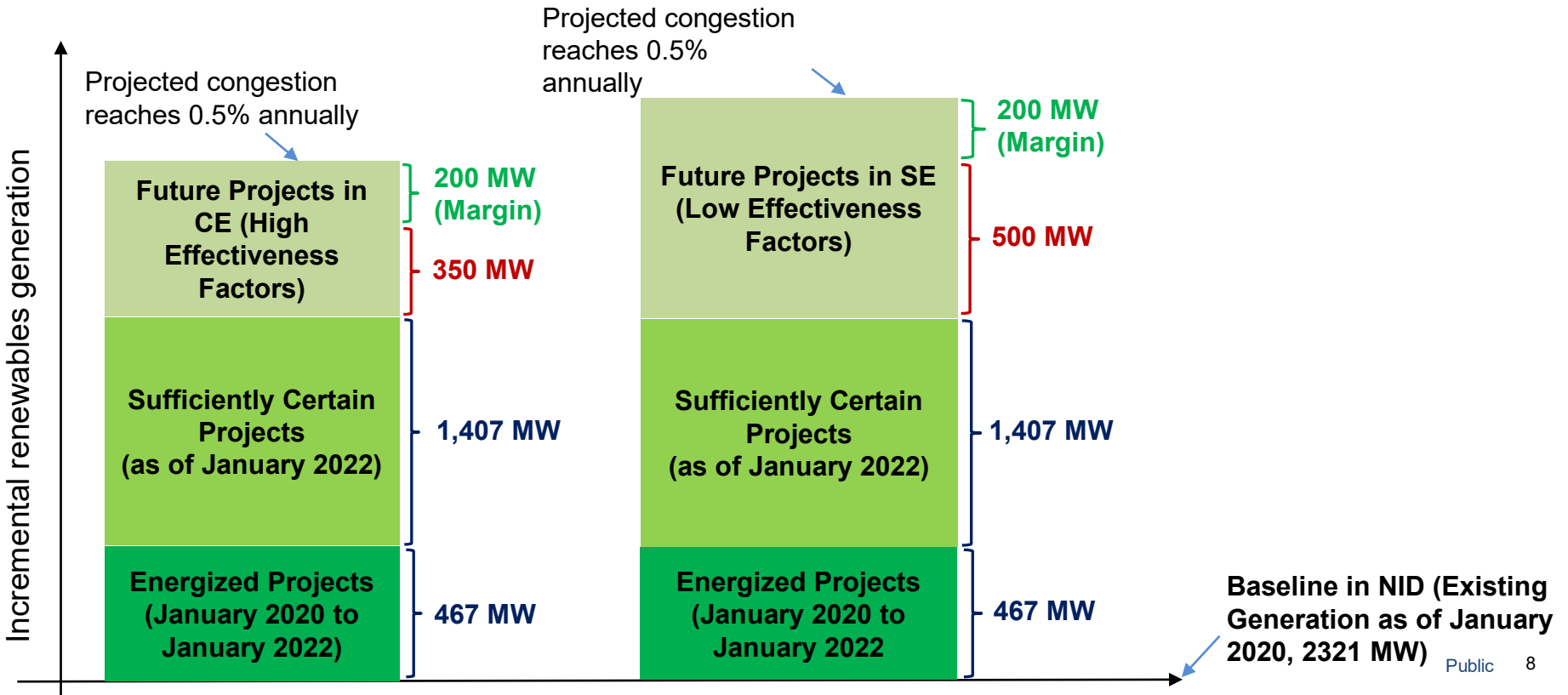
Reaffirmation Study Results

- Summary of congestion assessment results
  - **Scenario 1** results in N-0 and N-1 annual congestions less than 0.5%
  - **Scenario 2** and **Scenario 3** lead to N-0 and N-1 annual congestions higher than 0.5%

Scenarios	Incremental Renewables Generation (MW)		Annual Congestion (% of Time)	
	CE	SE	N-0	N-0 & N-1 w/ RAS
Scenario 1	350	1,057	0.0	0.1
Scenario 2	610	975	0.8	3.0
Scenario 3	60	705	1.2	3.9

Updated Milestone Monitoring Range

- A new milestone monitoring range was established based on project effectiveness factors
  - For the same MW capacity, a generation project with higher effectiveness factor contributes more to the need for CETO
- The new range is 350 MW to 500 MW while considering a 200 MW margin
- The updated milestone monitoring range is based on pre-PENV development



Conclusion and Next Steps

- The reaffirmation study results showed that sufficiently certain generation projects in CE and SE **do not** trigger Stage 1 of construction for CETO

- An updated milestone monitoring range was established based on the effectiveness factors of future generation projects in CE and SE:
  - **350 MW** to **500 MW** in addition to sufficiently certain projects

- The AESO is planning to perform a new reaffirmation study in six (6) months to confirm if CETO construction should proceed

Thank you