Alberta Electric System Operator

Transmission Reinforcement Payment (TRP) & Amendments for the AESO Connection Process

Wednesday, April 15, 2026

Posted April 9, 2026, Updated April 14, 2026

Housekeeping

- Washrooms are to the right of the entrance to the Client Centre
  - There is an accessible washroom to the left of the Client Centre
- There is one way to exit the Client Centre
- Emergency evacuation procedures
  - **Slow alarm:** Stand by for further announcements; scripted PA announcements will be made by QuadReal Security Personnel
  - **Fast alarm:** Evacuate immediately to muster points
  - **Muster points:** Leaving the building via the NW stairwell (by the washroom); assembly point is the Plaza area to the North of Livingston Place (immediately north of 240FOURTH

Notice

- 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 effectively capturing and sharing stakeholder input for Transmission Reinforcement Payment (TRO) and Amendments for the Connection Process stakeholder sessions. The collection of your personal information is authorized under Section 4(c) of the Protection of Privacy Act (POPA). If you have any questions or concerns regarding how your information will be handled, please contact the Privacy Officer, Law, at 3000, 240 – 4th Avenue S.W., Calgary, Alberta, T2P 0L4, by telephone at 403-539-2890 or by email at privacy@aeso.ca.

Participation
Hybrid Session

- **Please introduce yourself including the organization you work for before your question/comment**
- In-person Attendees
  - Raise your hand and we will bring you a microphone
- Online attendees
  - For verbal questions/comments, please raise your virtual hand. We will call on you to enable your microphone
  - For written questions, please use the webinar Q&A
- Conference Call attendees
  - Press *5 to raise your hand
  - Press *6 to unmute your microphone

Registrants as of April 7, 2026

- Air Products
- Alberta Newsprint Company
- AltaLink Management Ltd.
- Arder Energy Inc.
- ATCO Electric
- ATCO EnPower
- Atlantica Sustainable Infrastructure
- Alberta Utilities Commission (AUC)
- Best Consulting Solutions Inc.
- BHE Canada Ltd.
- Camelot Power and Energy Corp.
- Canada West Ski Areas Association (CWSAA)
- CAP Strategies
- Capital Power
- Capstone Infrastructure Corporation
- Carmal Energy Advisors Inc.
- Cenovus Energy
- City of Calgary
- City of Medicine Hat
- CNRL
- Customized Energy Solutions
- Direct Energy / NRG
- Enbridge
- EnDimensions
- Energy Storage Canada
- Enfinite
- ENMAX
- ErGo Consulting Inc.
- FortisAlberta
- FTI Consulting
- Government of Alberta
- Imperia Oil
- IPCAA
- LEI
- PEAK Legal Counsel
- Power Advisory
- Suncor Energy Marketing Inc.
- TC Energy
- TransAlta Corporation
- UCA
- Wolf Midstream

LAND ACKNOWLEDGEMENT

Opening Remarks

AESO Stakeholder Engagement Framework

Stakeholder Participation

- The participation of everyone here is critical to the engagement process.
- To ensure everyone has the opportunity to participate, we ask you to:
  - Listen to understand others' perspectives
  - Disagree respectfully
  - Balance airtime fairly
  - Keep an open mind

Topics & Outcomes

Wednesday	Thursday
TRP Design • Provide update on TRP design and the rationale for these decisions • Share and discuss the proposed TRP Base Rate and Scalars	**Amendments for the Connection Process** • Provide updates on the proposed changes to the AESO Connection Process related to project certainty and reduced administrative burden • Share and discuss the AESO's proposed transitional treatment of in-flight projects

Agenda

Wednesday, April 15

Start Time	Duration	Topic
8:30 a.m.	45 mins	Doors open
9:15 a.m.	15 mins	Welcome and Introductions
9:30 a.m.	75 mins	• What We Heard • Overview of TRP Design
10:45 a.m.	15 mins	Break
11:00 a.m.	75 mins	TRP Scalars
12:15 p.m.	45 mins	Lunch
1:00 p.m.	75 mins	Supply Transmission Service (STS)
2:15 p.m.	15 mins	Break
2:30 p.m.	75 mins	TRP Base Rate
3:45 p.m.	15 mins	Session Close

Welcome & Introductions

Transmission Reinforcement Payment | April 15, 2026	
Nicole LeBlanc	Vice President, Markets
Steven Everett	Director, Tariff
Annie Nguyen	Manager, Tariff
Payam Zamani	Manager, Grid Analytics
Justin Legue	Senior Tariff Operations Analyst
Ming Dong	Team Lead, Congestion Modelling
Amendments for the AESO Connection Process | April 16, 2026	
Bre Fox	Director, Customer Projects and Services
Colleen Simpson Laird	Manager, Regulatory and Transmission Services
Peyman Ahmadi	Manager, Customer Access Studies
Linda Odogwu	Senior Connection Process Analyst
Claudia Moroianu & Eugenie Uzhegova	Stakeholder Engagement

Recall
TRP Scope

- In scope:
  - Seeking feedback on TRP design before filing with the Alberta Utilities Commission (AUC)
    - Determination of Base Rate
    - Updated scalars following October session
    - STS Design
- Out of scope:
  - We are not seeking feedback on these topics
    - Restructured Energy Market (REM)
    - Locational Marginal Pricing (LMP)
    - Financial Transmission Rights (FTRs)
    - Congestion Management Framework Decisions
    - Optimal Transmission Planning (OTP)
    - Connection Costs/Contributions In Aid of Construction (CIAC)

What We've Heard For the Last Year

- TRP can be a clear and strong upfront siting signal
  - LMP is a good real time signal of congestion but not the best siting signal
- Suppliers have no control over siting decisions made by others
- Suppliers need good and timely information to make investment decisions
- Should receive something beyond local access in exchange for paying TRP
  - For ex. protection from congestion risk (either financial or physical); certainty of transmission build
- Suppliers need congestion risk mitigation mechanisms (that they can control)

Updated TRP Design From Oct 2025 Session Feedback

Overview

BASE RATE

1. Some stakeholders said base rates should be reflective of future costs
2. Many stakeholders said the base rate should be relatively stable over time

SCALARS

3. Cautions about multiplying scalars and weighting of scalars
4. Scalars should go to zero, but be careful about “racing” to zero-TRP areas; and that a zero for one scalar doesn’t inappropriately eclipse the other scalar
5. Mixed views and reactions for a single vs multiple TRPs within a cluster. Some consistencies:
   a) Give #s upfront (even if multiple) for visibility
   b) Allow suppliers to make decisions on withdrawing before they’re committed
   c) Some indicated preference for pro-rata sharing, if multiple TRPs
6. Characteristics scalar should be based on correlation during hours that cause transmission (TX) reinforcement / high congestion hours / high system stress
7. Characteristics scalar shouldn’t double-dip with other signals (for ex. ancillary services)

STS

8. Many indicated that STS should be based on maximum flow. Mixed commentary on whether flowing beyond STS allowed

Congestion Management Framework

Regulatory Requirements Inform TRP & Congestion Framework Design Decisions

T-Reg S29.1(4) The transmission reinforcement payment must be determined based on

(a) available transmission system capacity

(b) the technical characteristics of the generating unit or energy storage resource, and

(c) the cost of reinforcing the transmission system

EUA S33(1) The Independent System Operator must forecast the transmission needs of Alberta and develop plans for the transmission system to

(a) provide efficient, reliable and fair system access service, recognizing that the Independent System Operator is not obligated to plan for the removal of all transmission constraints

(b) ensure the timely implementation of required transmission system expansions and enhancements in a manner that maintains system reliability and can reasonably be expected to maximize economic efficiency

EUA S29(1) The Independent System Operator must provide system access service on the transmission system in a manner that gives all electricity market participants wishing to exchange electric energy and ancillary services a reasonable opportunity to do so

T-Reg S28(2) The Independent System Operator must make reasonable efforts to ensure that the interconnection of a generating unit or energy storage resource to the transmission system is undertaken in a timely manner

Generally Accepted Ratemaking Principles Applied to TRP Design

1. **Recovery of revenue requirement**

   Lower prioritization since TRP is an offset to AESO revenue requirement

2. **Provision of appropriate price signals that reflect all costs and benefits** 

3. **Fairness, objectivity and equity that avoids undue discrimination and minimizes inter-customer subsidies** 

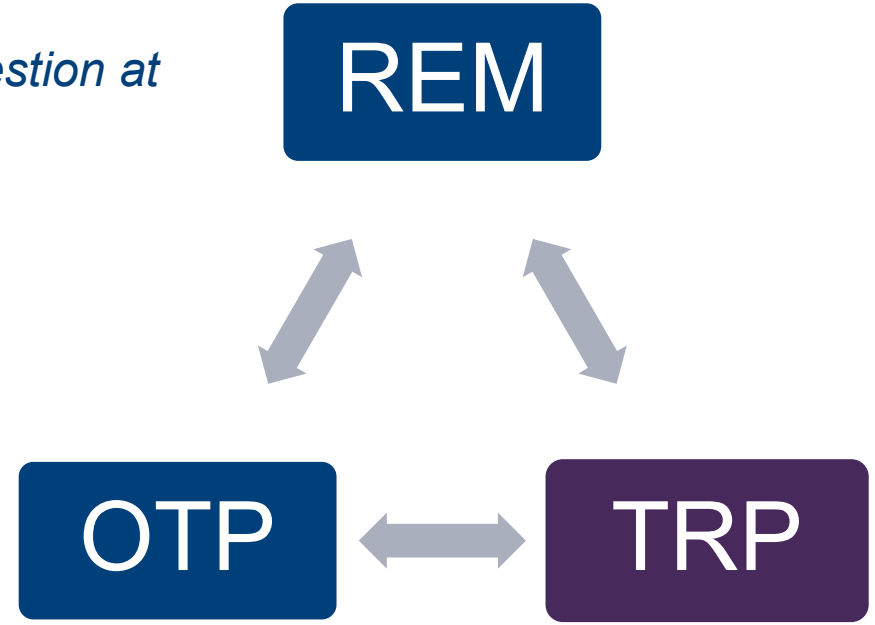
4. **Stability and predictability of rates and revenue** 

5. **Practicality, such that rates are appropriately simple, convenient, understandable, acceptable and billable** 

AESO's Proposed Congestion Management Framework

- Lowest cost delivered energy for end users through efficient dispatch of supply, competitive markets guiding investments and efficient transmission development

- *LMP reflects real-time congestion at local nodes*



- *Optimize transmission by planning and building for supply only when there's a net benefit*

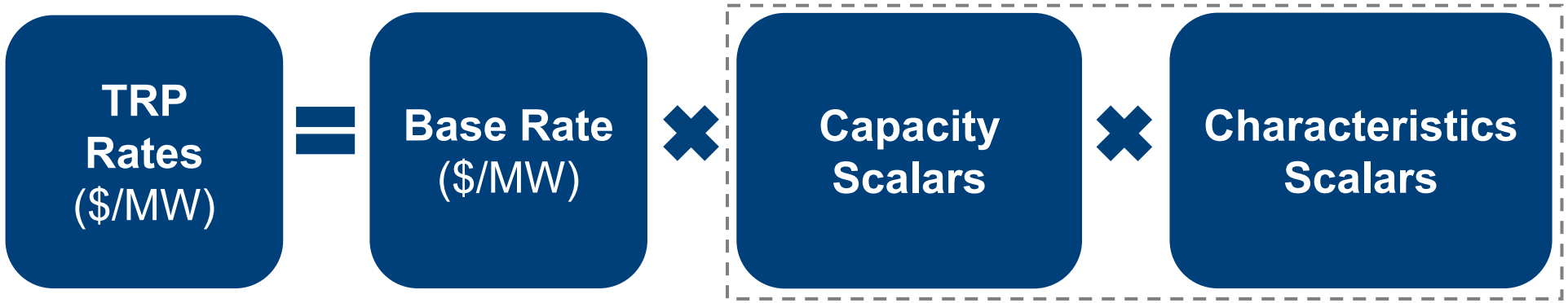
- *TRP is an upfront siting signal that cautions new supply in congested areas*
- *TRP bolsters transmission planning assumptions and decisions*
- *TRP provides transmission system connection for access to market at local node*

TRP Objective

- Support affordability by guiding supply siting decisions in a way that complements the competitive market and efficient transmission development
- TRP design is focused on impact of new supply on congestion, which may lead to transmission development as determined by the OTP framework
  - TRP signals that supply decisions, such as where, what type of supply and how much, impact congestion

TRP Methodology

Cluster-Specific TRP Rates for each Congestion Area:



Complementary scalars based on forward-looking congestion in a Cluster Planning Window

Project-Specific Charge:

TRP Components

	Base Rate (Fixed $/MW)	Capacity Scalars (# between 0-1)	Characteristics Scalars (# between 0-1)	STS (MW)
Locational Granularity	• Same for all AB	• Scalars by "Congestion Area" which will consider delineation of planning regions, congestion separation and cluster regions		• Site specific
Basis	• $/MW cost to serve supply	• Forecasted congestion for the Cluster Planning Window (TX topology, load and supply expected for that period)	• Forecasted congestion for the Cluster Planning Window (TX topology, load, and supply expected for that period) • Generic annual output profiles for different supply types	• How much supply can flow onto the TX system
Signal	• Base Rate is the maximum TRP Rate for areas where both scalars are 1	• Signals where there is existing **and** planned capacity on the transmission system (scalar of 0) • Tiered scalars increase toward 1 as capacity decreases	• Refinement of Capacity Scalar to show coincidence of supply type to forecasted congestion • Low scalars for low coincidence • Tiered scalars increase towards 1 as coincidence increases	• More supply can lead to more congestion
Frequency of update	• TBD (Likely stable for long-periods)	• Scalars updated before every cluster • Based on up-to-date information as of ~3 months before intake		• Site specific

TRP Process Overview

Inputs & Outputs for TRP Rate Determination

Inputs	TRP Rate Step	Outputs
AUC-approved TRP Base Rate Forward looking info for Cluster Planning Window: Load forecast (LTO) Supply forecast (existing + met inclusion criteria) Transmission topology (existing + NID-approved)	**1. AESO Calculates TRP for each congestion area per AUC-approved methodology** *Starts 3 months prior to Cluster intake*	For each congestion area: Congestion area boundaries Tiers and range for Capacity Scalars Tiers and range for Characteristics Scalars
	2. MPs submit SASRs *Cluster intake window*	For each congestion area: Total MWs of interest
For MP's to make commitment decisions, info avail: TRP tiers and range; MW of SASR interest; and Detailed Assessment Package	**3. MPs make commitment payments** *Stage 2 Cluster process*	For each congestion area, final rates for cluster: Single Capacity Scalar Set of Characteristics Scalars by supply type
Final STS for supply project TRP paid prior to energization	**4. MPs supply project energizes** *Based on individual project timeline*	

Cluster | Project

Simplified Examples to Illustrate TRP Scalar Mechanics

$Cluster_A$

- Assume two Congestion Areas
  - West Region experiences congestion
  - East Region does not experience congestion and has TX capacity
- Assume these dates for $Cluster_A$
  - $Cluster_A$ intake window Jan 2027 – Mar 2027
  - All proposed projects in $Cluster_A$ energize 2032 (i.e., last year of the 5-year Cluster Planning Window)
- Assume that there are only 2 different supply types available called W & E and these types have opposite output profiles
  - Existing suppliers in West Region are primarily supply type W
  - Existing suppliers in East Region are primarily supply type E
- Assume that the only changing variable is additional supply from the cluster

Tiers and Ranges for $Cluster_A$
During Cluster Intake Window

$Cluster_A$ – West Region			
Tier	Capacity Scalar	Output Profile	Characteristics Scalar
0 – 300 MW	0.6	W	1
		E	0
301 – 500 MW	0.8	W	1
		E	0
501+ MW	1	W	1
		E	0

$Cluster_A$ – East Region			
Tier	Capacity Scalar	Output Profile	Characteristics Scalar
0 – 500 MW	0	W	0
		E	1
501 – 800 MW	0.3	W	0
		E	1
801 – 1200 MW	0.8	W	0
		E	1
1201+ MW	1	W	0
		E	1

Notes for Capacity Scalar Tiers

- *#, and size of, of tiers depend on granularity needed from congestion frequency math so # of tiers can differ b/w Clusters*

Supply Interest for $Cluster_A$
After Cluster Intake Window Closes

- 400 MW of interest in West Region
- 900 MW of interest in East Region

$Cluster_A$ – West Region			
Tier	Capacity Scalar	Output Profile	Characteristics Scalar
0 – 300 MW	0.6	W	1
		E	0
301 – 500 MW	0.8	W	1
		E	0
501+ MW	1	W	1
		E	0

$Cluster_A$ – East Region			
Tier	Capacity Scalar	Output Profile	Characteristics Scalar
0 – 500 MW	0	W	0
		E	1
501 – 800 MW	0.3	W	0
		E	1
801 – 1200 MW	0.8	W	0
		E	1
1201+ MW	1	W	0
		E	1

After Commitment Payments for $Cluster_A$

End of Stage 2 / Start of Stage 3

- 400 MW in West Region
- 400 MW in East Region

$Cluster_A$ – West Region			
Tier	Capacity Scalar	Output Profile	Characteristics Scalar
0 – 300 MW	0.6	W	1
		E	0
301 – 500 MW	**0.8**	**W**	**1**
		E	**0**
501+ MW	1	W	1
		E	0

$Cluster_A$ – East Region			
Tier	Capacity Scalar	Output Profile	Characteristics Scalar
0 – 500 MW	**0**	**W**	**0**
		E	**1**
501 – 800 MW	0.3	W	0
		E	1
801 – 1200 MW	0.8	W	0
		E	1
1201+ MW	1	W	0
		E	1

TRP Charge = Base Rate × Scalars × STS_{TRP}

What Happens When The Next Cluster Opens ($Cluster_B$)

Subsequent Cluster Intake Window

- Assume that only change since $Cluster_A$ is additional supply projects from $Cluster_A$ meeting certainty criteria
  - Scalar tiers effectively shift upwards

$Cluster_B$ – West Region			
Tier	Capacity Scalar	Output Profile	Characteristics Scalar
0 – 100 MW	0.8	W	1
		E	0
101 + MW	1	W	1
		E	0

$Cluster_B$ – East Region			
Tier	Capacity Scalar	Output Profile	Characteristics Scalar
0 – 100 MW	0	W	0
		E	1
101 – 400 MW	0.3	W	0
		E	1
401 – 800 MW	0.8	W	0
		E	1
801+ MW	1	W	0
		E	1

What Happens If Transmission is Approved

Subsequent Cluster Intake Window

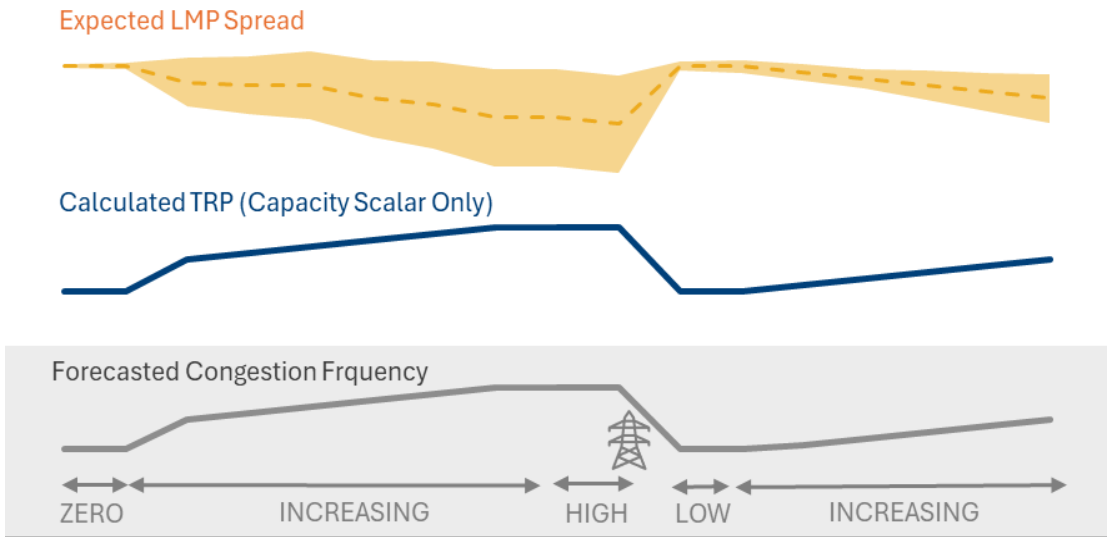
- Assume
  - That Needs Identification Document (NID) for an economic TX project in West Region is approved before $Cluster_B$ opens
- NID details
  - TX planned to energize ***within*** the 5-year energization window for $Cluster_B$
  - Relieves forecasted congestion and provide additional capacity
- Capacity Scalar drops to 0 for first tier because there is additional capacity with TX energization within the 5-year Cluster Planning Window

$Cluster_B$ – West Region			
Tier	Capacity Scalar	Output Profile	Characteristics Scalar
0 – 400 MW	0	W	1
		E	0
401 – 600 MW	0.2	W	1
		E	0
601 – 900 MW	0.5	W	1
		E	0
900 – 1200 MW	0.8	W	1
		E	0
1201 MW	1	W	1
		E	0

Proposed TRP Design Aligns Outcomes with OTP & LMP Signals

Illustrative Diagram Shows General Relationships

TRP and Expected LMP Spread Based on Forecasted Congestion Frequency



1. When congestion frequencies are low (or 0):

- TRP is low (or 0)
- Expected LMP spread is narrow

2. When congestion frequencies are high:

- TRP is high
- Expected LMP spread is broad

3. As congestion frequencies increase:

- TRP is collected as new supply is added and increases as congestion frequency increases

4. When new transmission is expected to energize:

- TRP drops to zero if additional capacity leads to low congestion frequency (same as outcome 1)
- Expected LMP spread narrows. LMP trends generally align with TRP but won't match as LMP is nodal. Additionally, LMP reflects real-time conditions such as actual load and supply; system constraints; and offer behaviors
- Suppliers may experience broad LMP spread if they energize before TX does

Capacity Scalar Math (1/2)

- In the Oct. Session we said: *The available transmission capacity within an area is reflected in the congestion observed in that area*:
  - When sufficient transmission capacity exists, congestion tends to be low
  - When transmission capacity is limited, congestion tends to be high

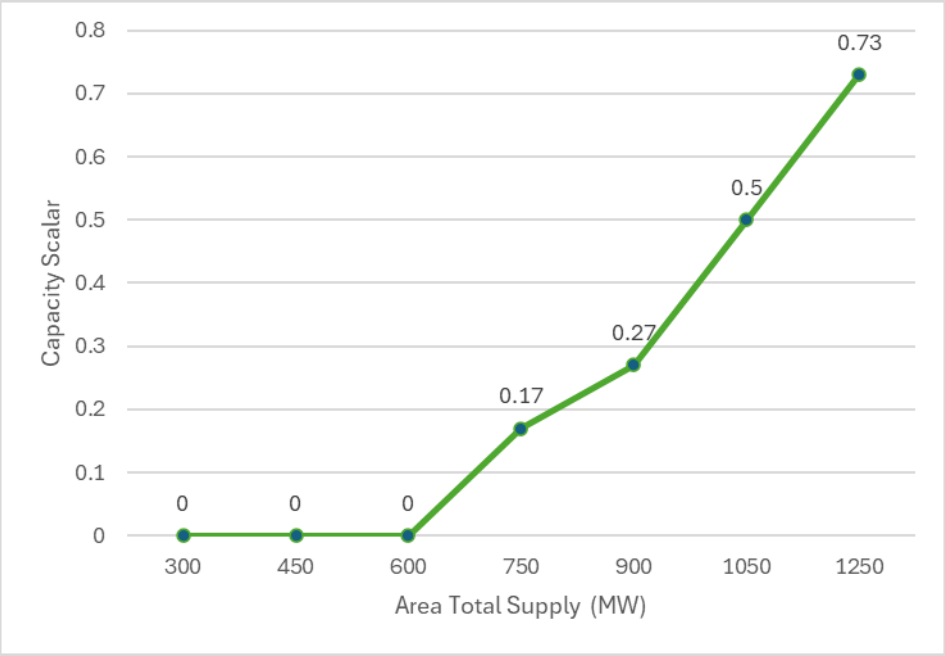
- The Capacity Scalar (CS) is defined as

$$CS = \frac{Area\ Congestion\ Frequency}{Reference\ Point} \times 100\%$$

- Where the reference point is the maximum area congestion frequency among all assessed areas, where a transmission reinforcement is likely necessary. This can ensure the capacity scalar is normalized between 0 and 1.

Capacity Scalar Math (2/2)

- Stakeholders expressed interest in understanding how Capacity Scalar values change with supply interest
- We propose to evaluate and present area congestion frequencies across a range of future supply scenarios and calculate the corresponding Capacity Scalars for each area in the cluster study year (forward-looking)
- Technology mix (existing + Projects meeting Inclusion Criteria) is held constant to ensure a transparent and non-speculative foundation for supply growth.



Example: Existing Generation 100 MW
Assuming Reference Point 30%

Total Supplier Interest (MW)	Total Supply (MW)	Area Congestion Frequency %	Capacity Scalar
200	300	0	0
350	450	0	0
500	600	0	0
650	750	5.0	0.17
800	900	8.0	0.27
950	1050	15.0	0.50
1150	1250	22.0	0.73

Characteristics Scalar Math (1/3)

- The Characteristics Scalar captures the technological impact of the new supply on the area congestion, taking into consideration the existing supply mix in the area
- The objective is to quantify the coincidence between the new supply's high-power-output hours and the area's high-congestion hours:

$$\boldsymbol{ChS} = \frac{\boldsymbol{2P_1P_2}}{\boldsymbol{P_1 + P_2}} \times \boldsymbol{100\%}$$

  - P_1: the percentage of high-power-output hours within the area congested hours;
  - P_2: the percentage of area congested hours within the high-power-output hours
- Standard technology-specific generation profiles are developed based on data-driven simulation, production cost modelling and/or historical data to enable consistent and reliable assessment of congestion impacts
- Capacity (area-level) and Characteristics (technology-specific) scalars combined in a robust framework can provide balanced, stable and comparable outcomes

Characteristics Scalar Math (2/3)

$$ChS = \frac{2P_1P_2}{P_1 + P_2} \times 100\%$$

- P_1: the percentage of high-power-output hours within the area congested hours;
- P_2: the percentage of area congested hours within the high-power-output hours
- Harmonic mean is a specialized average often used to combine two ratios which penalizes disparity

Example: P_1, P_2 and Characteristics Scalars

Area Congested Hours	High-power-output Hours	Overlap Hours	P_1	P_2	ChS
200	500	100	0.5	0.2	0.29
600	800	600	1.0	0.75	0.86
500	300	200	0.4	0.7	0.50

Characteristics Scalar Math (3/3)

- At hybrid sites, a generator and an energy storage are co-located. The overall ChS should combine the generator ChS and the energy storage ChS according to their capacity ratios:

$$\boldsymbol{ChS_{Hybrid}} = \frac{\boldsymbol{C_{gen}}}{\boldsymbol{C_{gen} + C_{storage}}} \times \boldsymbol{ChS_{gen}} + \frac{\boldsymbol{C_{storage}}}{\boldsymbol{C_{gen} + C_{storage}}} \times \boldsymbol{ChS_{storage}} \times \mathbf{100\%}$$

  - C_{gen} and $C_{storage}$ are the generator and energy storage capacities respectively;
  - ChS_{gen} and $ChS_{storage}$ are the characteristics scalars for the generator and energy storage.

Congestion Portal
Coming May 15

- AESO to launch a new self-serve Congestion Portal on May 15, providing market participants with direct visibility into transmission congestion:
  - Market participants will be able to enter basic project attributes such as technology type, project size, and point of interconnection
  - Instantly view estimated congestion on transmission lines through an interactive map interface powered by ArcGIS
  - Additional geographic data layers such as natural gas pipelines, wind and solar resources, and high-quality agricultural lands are included to provide context and support project siting decisions
  - These insights help developers screen sites, refine proposals, and monitor congestion risk throughout their project lifecycle
  - The portal will be further enhanced with **TRP Capacity and Characteristics Scalars** once available

Supply Transmission Service (STS)

Why STS Contract Capacity for TRP

- Billing for TRP will be based on System Access Service (SAS) contract capacity, specifically STS because:
  - TRP provides transmission system connection for access to market at local node (TRP provides SAS)
  - Suppliers will pay upfront transmission reinforcement payment for SAS
  - No monthly STS charges once LMP in place
- STS_{TRP} is for calculating TRP charges to suppliers
  - Other tariff charges may use different STS contract capacity as a billing determinant
- Who pays TRP
  - The owner of a new generating unit or energy storage resource; or
  - An existing generating unit or energy storage resource in respect of any capacity for which the owner has not previously paid TRP or Generating Unit Owner's Contribution (GUOC)

Considerations for STS$_{TRP}$

- In general, STS$_{TRP}$ contract capacity to reflect the MWs exchanged in the market via the transmission system
  - In cases of TX-connected supply (generating unit or energy storage resource), STS$_{TRP}$ and maximum capability (MC) should be equivalent
  - For DX-connected supply, flow onto TX system will be lower than what's exchanged in pool if supply is located on same feeder as DX load
- STS$_{TRP}$ can be lower than maximum authorized real power (MARP) or nameplate capacity due to:
  - Energy used on-site (for ex. Self-supply, or battery charging)
  - Point-of-connection limitation
  - Energy storage configurations. For ex. hybrid sites with direct current (DC) inverter

Accuracy of Current STS Contract Capacities

Before TRP in Place

- Currently, STS contract capacity is not used for any ISO tariff charges
  - STS losses charge is based on metered energy (MWh)
- Some current STS contract capacities may not accurately reflect the up-to-date maximum possible flows from a supply site
- TRP transition will include an STS Re-contracting Period for current market participants
  - Update current STS contract capacities w/o consequence
  - Set an accurate up-to-date baseline STS_{TRP} contract capacity; TRP will apply to new and incremental increase(s) to STS_{TRP}

Determining STS$_{TRP}$ Contract Capacity
After TRP in Place

- Market participant elects the requested STS$_{TRP}$ contract capacity
- As part of connection process, AESO reviews requested STS$_{TRP}$ contract capacity
  - Does the # make sense with proposed and existing generation/energy storage resources; on-site loads requirements; energy storage charging configurations, transmission connection facilities, etc.
- In cases of DX-connected supply, DFO submits request for SAS, including STS$_{TRP}$, but supplier will be invoiced for and pays TRP
  - Since there could be multiple suppliers downstream of TX point of connection, TRP applies to the incremental STS$_{TRP}$ attributed to that applicable supply
  - AESO needs support from DFOs to determine the amount attributed to the specific supply because we don't have visibility into the DX system interactions that impact flow onto the TX system
    - is supply on same feeder as other suppliers, DX load and/or microgeneration; DX load transfers since baselined STS$_{TRP}$, etc.
- TRP applied to new and incremental increases to STS$_{TRP}$ contract capacities

Ensuring STS$_{TRP}$ Contract Capacity Accuracy
After TRP in Place

- AESO to monitor transmission flows and market participation to ensure that STS$_{TRP}$ contract capacities stay accurate and up-to-date
- MPs are responsible for ensuring that their STS$_{TRP}$ contract capacity is reflective of their supply SAS needs over time. MP submits request for SAS if:
  - Additional supply resource added
  - Output from existing resources increases
  - On-site load (or charging) requirements decrease
- Increase to STS$_{TRP}$ subject to TRP charges at the time of increase
  - TRP rate per applicable Cluster

TRP Methodology: Base Rate

Marginal Cost of Service Studies (MCOSS) Calculation Update

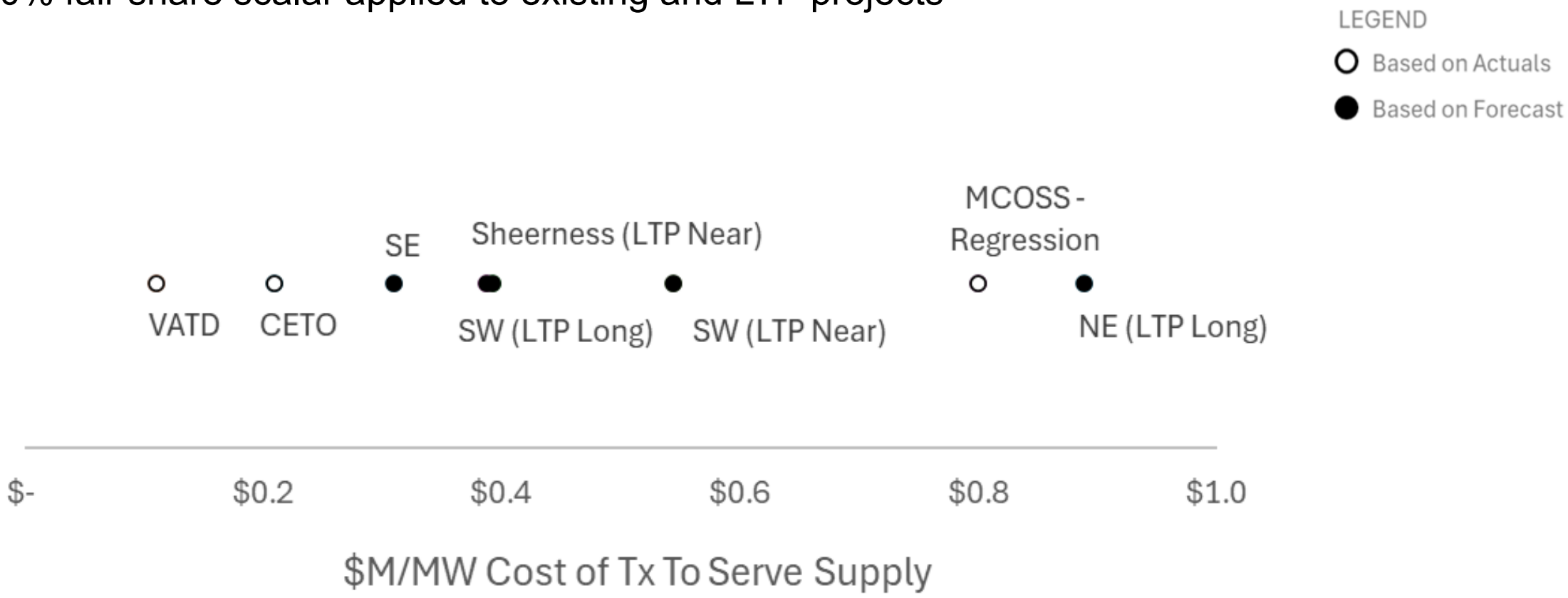
TRP Base Rate

- In October 2025, the AESO shared with stakeholders that using MCOSS to set TRP Base Rate would translate to a Base Rate of $251,000/MW to $353,000/MW
- The Base Rate calculation under MCOSS has been revised to $820,000/MW to $972,000/MW
  - MCOSS results presented in October 2025 were based on very preliminary numbers, which has since been updated. A range of $28,000/MW to $34,000/MW to serve peak generation has been updated to $38,000/MW to $45,000/MW
  - In the October 2025 session the TRP Base Rate was calculated as the net present value of the MCOSS results over a 15 to 20 years
    - This approach was incorrect. The MCOSS results represent the capital costs to build transmission, which then must be converted to a Base Rate for TRP that reflects the AESO's cost to serve suppliers. This more closely reflects how transmission facilities are included in the AESO's revenue requirement.

Wide Range for Base Rate

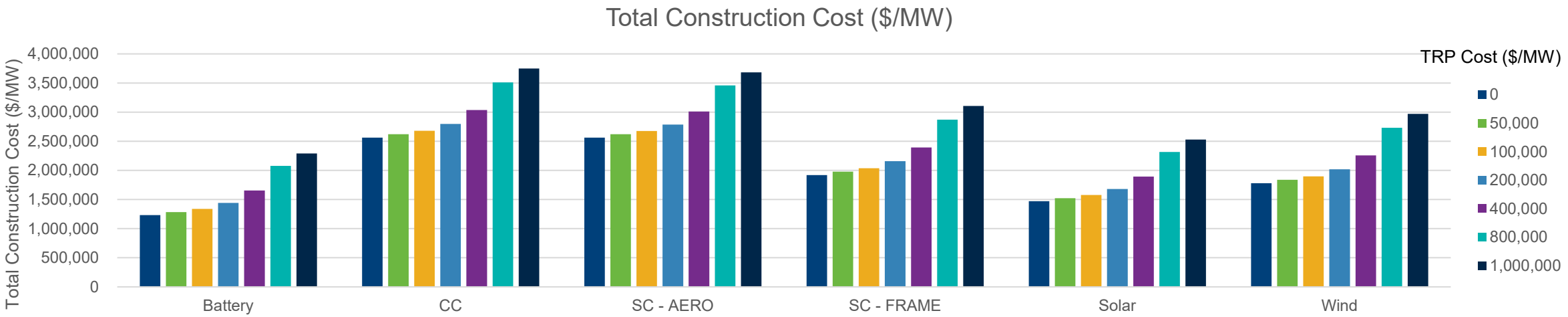
Cost of TX to Serve Supply

- LTP projects assessed before OTP, numbers are approximate
- 50% fair share scalar applied to existing and LTP projects



TRP Charge = Base Rate × Scalars × STS_{TRP}

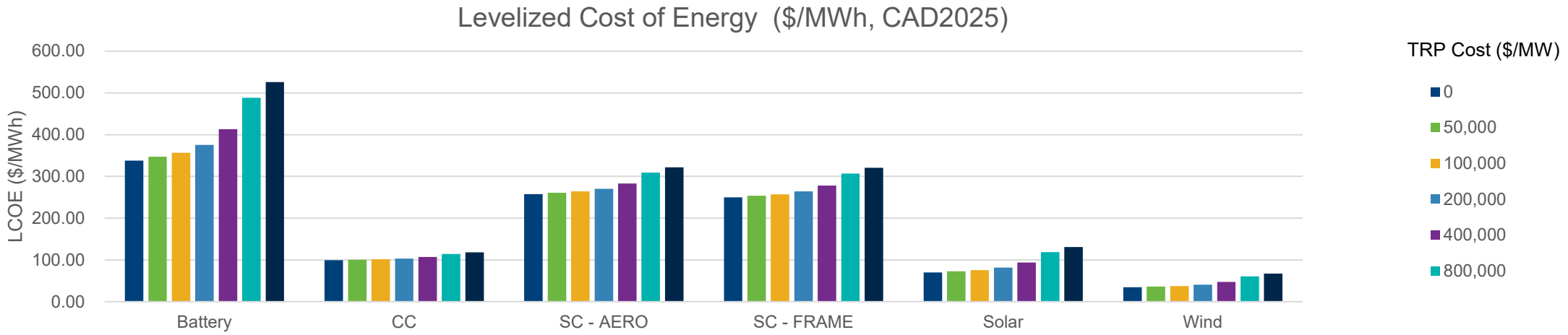
Total Construction Cost



TRP Charge Reflected as a Percentage Increase to Total Construction Costs						
TRP ($/MW)	**50,000**	**100,000**	**200,000**	**400,000**	**800,000**	**1,000,000**
Battery	4.3%	8.6%	17.2%	34.3%	68.6%	85.8%
CC	2.3%	4.6%	9.3%	18.6%	37.1%	46.4%
SC - AERO	2.2%	4.4%	8.7%	17.5%	34.9%	43.7%
SC - FRAME	3.1%	6.2%	12.4%	24.8%	49.5%	61.9%
Solar	3.6%	7.2%	14.4%	28.7%	57.5%	71.8%
Wind	3.3%	6.7%	13.3%	26.7%	53.4%	66.7%
Average	3.1%	6.3%	12.5%	25.1%	50.2%	62.7%

* Numbers are derived based on a set of inputs specified on the assumptions slide

Levelized Cost of Energy (LCOE)



TRP Charge Reflected as a Percentage Increase to LCOE						
TRP ($/MW)	**50,000**	**100,000**	**200,000**	**400,000**	**800,000**	**1,000,000**
Battery	2.8%	5.6%	11.1%	22.3%	44.5%	55.7%
CC	0.9%	1.8%	3.7%	7.4%	15.1%	18.9%
SC - AERO	1.2%	2.5%	5.0%	10.0%	19.9%	24.9%
SC - FRAME	1.4%	2.8%	5.7%	11.3%	22.7%	28.3%
Solar	4.2%	8.5%	17.0%	34.3%	69.6%	87.6%
Wind	4.6%	9.3%	18.7%	37.6%	75.9%	95.4%
Average	2.5%	5.1%	10.2%	20.5%	41.3%	51.8%

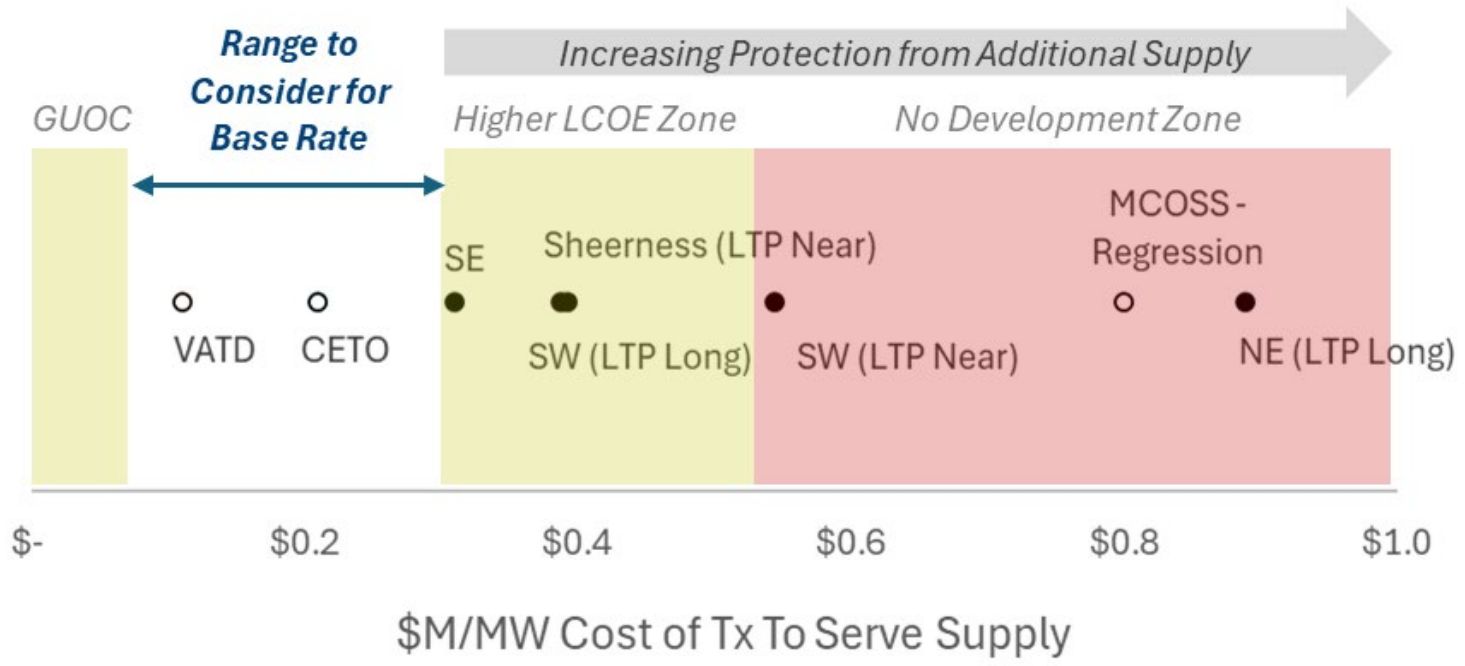
* Numbers are derived based on a set of inputs specified on the assumptions slide

LCOE & Total Construction Cost Assumptions

Key Assumptions	
Carbon Price	Escalation to $170 by 2030 then static
TIER HPB	Decarbonization by 2050 from 2024 LTO - prescribed decline to 2030, then linear decline to 0 by 2050
Carbon Credit Revenue	Assumed at face value (Benchmark * Carbon Price)
Investment Tax Credits	Included for non-emitting technologies
Sources	NREL ATB 2024 (EIA used for AERO)
Depreciation (Tax Credit)	Immediate Expensing for CCA 43.1, Accelerated Investment Incentive for other CCA classes. Credits only utilized if sufficient revenues from individual project
Pre-Tax WACC	10.5% (50%D / 50%E)
Capacity Factors	SC - Aero 20.0% SC – Frame 20.0% CC 75.0% Solar 20.0% Wind 39.0% Battery 8.3%

Discussion: Narrowing the Range for Base Rate

Width of Boxes is Currently Qualitative



- Based on what we've heard:
  - Increase to suppliers costs may result in increases to commodity costs. As shown on slide 46, TRP of $400,000/MW results in 21% increase to LCOE
  - At some TRP amount, development of supply slows down / stops
  - Higher TRPs provides some "protection" to sited supply from additional supply. Level of protection scales directly with Base Rate amount

Ask to Stakeholders: How to Determine $/MW Base Rate?

Discussion & Feedback Sought

- There are multiple options to calculate the Base Rate
- Considerations
  - A very high TRP can prevent new entry in a congested area
    - Base Rate sets the highest rate that will only apply to supply that worsens congestion in the most congested area
    - Scalars can be used to bring TRP rates down, including in congested areas
  - LMP will also send siting signals
  - OTP process will determine future supply-driven transmission reinforcement and related costs
    - Base Rate could be treated as interim pending future opportunities to use OTP outputs to inform the Base Rate
    - AESO is willing to explore how OTP can inform the base rate as OTP is developed and implemented
- The AESO wants to know if there is a broad consensus among stakeholders of what the Base Rate should be
- **Ask:** is there a Base Rate value or narrow range that is acceptable to industry?
  - We will provide an opportunity for written feedback

Thank You

- Please take a moment to provide us with feedback on how we run these sessions
- Different ways to provide feedback
  - Complete the Teams poll,
  - Scan the QR code, or
  - Visit below link to complete the MS form:
- Transmission Reinforcement Payment Stakeholder Session Day 1

Alberta Electric System Operator

Transmission Reinforcement Payment (TRP) & Amendments for the AESO Connection Process

Thursday, April 16, 2026

Posted April 9, 2026, Updated April 15, 2026

Welcome & Introductions

Transmission Reinforcement Payment | April 15, 2026	
Nicole LeBlanc	Vice President, Markets
Steven Everett	Director, Tariff
Annie Nguyen	Manager, Tariff
Payam Zamani	Manager, Grid Analytics
Justin Legue	Senior Tariff Operations Analyst
Ming Dong	Team Lead, Congestion Modelling
Amendments for the AESO Connection Process | April 16, 2026	
Bre Fox	Director, Customer Projects and Services
Colleen Simpson Laird	Manager, Regulatory and Transmission Services
Peyman Ahmadi	Manager, Customer Access Studies
Linda Odogwu	Senior Connection Process Analyst
Claudia Moroianu & Eugenie Uzhegova	Stakeholder Engagement

Agenda

Thursday, April 16

Start Time	Duration	Topic
8:30 a.m.	45 mins	Doors Open
9:15 a.m.	15 mins	Welcome and Framing
9:30 a.m.	75 mins	• Introduction • TRP Implementation • PILON • Commitment Charge
10:45 a.m.	15 mins	Break
11:00 a.m.	60 mins	• Commitment Charge (Q&A) • SAS Agreements • Change Charges • Administrative changes
12:00 p.m.	45 mins	Lunch
12:45 p.m.	75 mins	Transition plan for in-flight projects
2:00 p.m.	15 mins	Break
2:15 p.m.	75 mins	Transition plan for in-flight projects (Q&A)
3:30 p.m.	15 mins	Next Steps & Session Close

Scope

- In scope:
  - AESO Connection Process changes and Tariff revisions
    - TRP Implementation
    - Payment in Lieu of Notice (PILON)
    - Commitment Charge
    - SAS Agreements for Rate Demand Transmission Service (DTS) and Rate Supply Transmission Service (STS)
    - Change Charges
    - Transition plan for in-flight projects
- Out of scope:
  - PILON calculations, one-time GUOC refund, ancillary services cost allocation, cost causation and all SAS rates

Outline

- Introduction
  - Key Outcomes
  - Project Certainty + Certainty Indicators
  - Proposed Process Updates
- Project Certainty
  - TRP Implementation
  - PILON
  - Commitment Charge
  - SAS agreements for Rate STS and Rate DTS
  - Change Charges
- Administrative Changes
- Transition plan for in-flight projects
- Next Steps

Introduction

Key Outcomes

Establish project certainty at Gate 2

- Implement TRP; no GUOC
- Remove PILON for in-flight projects
- Introduce commitment charge
- Execute SAS agreements earlier
- Apply change charges across all project types

Reduce administrative burden

- Apply project certainty mechanisms consistently across all project types
- Streamline processes related to PILON and SAS agreements

Project Certainty

What are the benefits of project certainty?

- Accurate project information helps us study a system topology that is more closely aligned with reality
- Project certainty improves the integrity of study results and could lead to more effective allocation of remedial action scheme (RAS), etc.

Why should it be determined early?

- Connection alternatives are not tied up with projects that may not progress
- Projects can advance in a timelier manner as resources will be allocated to projects with greater certainty
- AESO can generate more accurate base cases in preparation for studies in the next Cluster

Current vs. Future Certainty Indicators

Current State

- GUOC payment/evidence (for supply)
- PILON (for loads)
- Effective SAS Agreements

X Different approaches for different project types

X Occurs at different times for different project types

Proposed Future State

- Commitment charge
- Executed & Effective SAS Agreements
- Change charges

✓ Same approach for establishing certainty for all project types

✓ Occurs at the end of Stage 2 for all project types

Proposed Process Updates*

Commitment Charge

- Reduce $/MW amount and revise methodology for MWs determination
- Provide option to make cash payment or submit financial security

Change Charges

- Provide clear definitions on which changes trigger change charges
- Consider exemptions to change charges for changes outside of market participants' control

*Based on stakeholder feedback

Proposed Process Updates (cont.)

PILON

- Provide clarity on PILON and commitment charge interaction

TRP

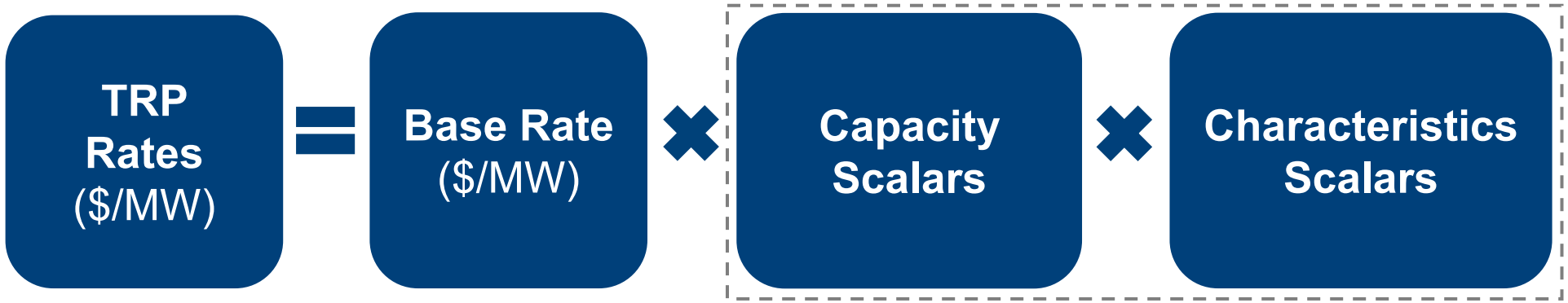
- Provide TRP information in advance and lock in rates for each cluster
- Share proposed treatment of in-flight projects before filing
- Provide clarity on how changes in project information may impact TRP rates

*Based on stakeholder feedback

Project Certainty: TRP Implementation

TRP Calculation

Cluster-Specific TRP Rates for each Congestion Area:



Complementary scalars based on forward-looking congestion in a Cluster Planning Window

Project-Specific Charge:

TRP Implementation

- TRP will apply to projects with new or increased STS
- Payment due in Stage 5, prior to energization
  - TRP charge will be updated as needed to reflect STS changes prior to energization
- For Cluster projects
  - TRP applies to Cluster 4 and beyond
- For projects with STS <5 MW
  - TRP applies if the request comes after the 1st TRP rates are locked in
  - GUOC applies if the request comes before the 1st TRP rates are locked in

TRP Implementation

TRP base rate/scalars known before submission window opens

Exact TRP charge unknown to MPs

i. Commitment charge provided
ii. MP interest in each congestion area known
iii. TRP scalars locked in for each congestion area
iv. Exact TRP charges known
v. TRP notices issued to MPs

TRP due (prior to energization)

No changes to TRP rates (even if projects cancel), however TRP charge may change if STS and/or project information changes

SASR submission window | **Stage 0** | **Stage 1** | **Stage 2** | **Stage 3** | **Stage 4** | **Stage 5** | **Stage 6**

SASR submission window closes

STS review

Preliminary Assessment Fee due

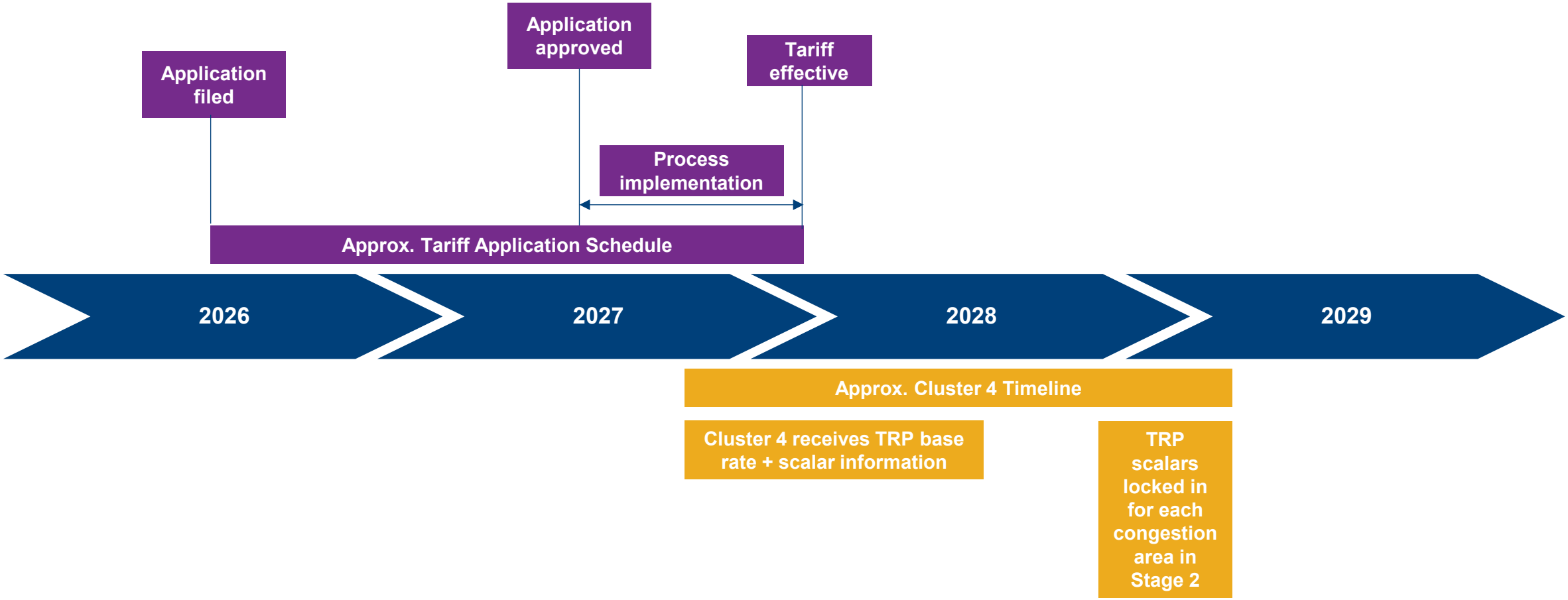
- Preliminary Assessment Package issued
- Detailed Assessment Fee due

- Detailed Assessment Package issued

Requirements for Project Certainty
- Commitment Charge
- SAS security for two months of expected-energy DTS payments
- Effective SAS Agreements for DTS and STS
- TFO confirmation of Stage 3 & 4 security
- Change Charges begin

*May be known later for Cluster 4

Tariff Filing vs. Cluster 4 TRP Rates



Timelines presented are tentative

Project Certainty: PILON

PILON Implementation

- Will only apply to reductions and terminations of DTS contract capacity for **energized** facilities
  - A market participant with an in-flight project within the AESO Connection Process, upon execution of the DTS Agreement, will no longer be required to provide a PILON to the AESO if they reduce or terminate (i.e., cancel) their DTS
- A reduction or termination of DTS on an in-flight project will be dealt with via the Change charges and/or Commitment charge
  - A reduction will incur a Change charge
  - A termination (e.g., project cancellation) will result in loss of the Commitment charge

Project Certainty: Commitment Charge

Applicability

- A refundable charge paid by the market participant (includes DFOs) to serve as an indicator of a project's commitment to the selected connection alternative and energization
- Applies to
  - Cluster and Independent projects
  - Connection and behind-the-fence (BTF) projects
  - Generation and Load projects
- Will not apply to
  - Contract change projects (related to existing facilities)
  - Requests received outside the AESO Connection Process

Amount

- Proposed rate is $15,000/MW
  - Aligns with stakeholder feedback
- MW determination will be based on the greater of the requested STS and DTS amounts, which must be the same amounts captured in the SAS agreements
  - Generation and storage – maximum requested STS or DTS
  - Load – requested DTS
  - Staged projects – maximum total requested STS or DTS
  - Self supply and ISDs – maximum requested STS or DTS
- Any increases to the STS and DTS amounts allowed by the AESO within the same project, at a later stage in the process, may incur an additional charge

Refunds

- Fully refundable upon energization of the generating facility, storage or load facility
  - Commitment charge will be forfeited if the project is cancelled by the market participant or cancelled at the AESO's discretion prior to energization
- Reduction in STS or DTS at a later stage in the process will not trigger an earlier refund of a portion of the commitment charge
  - Commitment charge based on the higher STS or DTS will be fully refunded upon energization, or fully forfeited if the project does not energize
- For phased projects, after energization of each phase, the market participant will receive a proportionate refund
  - TRP will also be collected in energization phases

Refund Exemptions

- Commitment charge will be refunded if the project is cancelled under the following circumstances
  - Denial of AUC approvals
    - Power Plant Application
    - AESO NID
    - Transmission Facility Application

Payment

- Collected in Stage 2 prior to SAS agreement execution
  - SAS agreements to be executed only after commitment charge is received
- Cash payment or financial security may be provided
  - Financial security must be either Letter of Credit or cash collateral from the market participant, in a form and substance acceptable to the AESO

Project Certainty: SAS Agreements

SAS Agreement Execution

- Executed near the end of Stage 2 (after commitment charge has been provided, if applicable) and effective upon execution
  - PILON no longer tied to an executed agreement for in-flight projects
  - Applicable to all project types
    - Cluster and Independent projects
    - Connection, BTF and contract change projects
    - Generation and Load projects
- Commitment charge (and DTS security, if applicable) must be provided prior to execution

SAS Agreement Execution

- Upon executing the STS and/or DTS Agreements, the market participant will be required to:
  - Pay any change charges as determined by the AESO
  - Pay TRP prior to energization (for STS Agreements only)
  - Provide PILON for any reductions or terminations of DTS contract capacity post energization
  - Provide STS Agreement security prior to energization
  - Submit a final project change proposal at least 30days before the facility's contract capacity start date (CCSD) for changes to contract capacity and CCSD
- STS and DTS Agreement proformas will also be updated in ISO Tariff blacklines

Project Certainty: Change Charges

Implementation

- A non-refundable charge paid by the market participant to change project information
  - Currently applies to only Cluster projects
  - Will apply to all project types
    - Cluster and Independent projects
    - Connection, BTF and Contract change projects
    - Generation and Load projects
  - Will not apply to any requests made outside the AESO Connection Process
- Required to review change and assess its impacts
  - Does not guarantee approval of change request
- $10,500 charge per project change proposal submitted to the AESO
  - Same charge applied in Cluster Process
- Charges will apply in Stage 2 (after commitment charge has been provided, if applicable) and beyond

Administrative Changes Tied to Project Certainty

PILON Implementation

- PILON will be due 30 days after the PILON invoice is issued to the market participant
  - Applies only to energized facilities
  - AESO issues the SAS Amending Agreement or Termination Agreement for execution after payment is made

Final Changes to SAS Agreements

- Market participants must submit a final project change proposal to update the contract capacity and CCSD at least 30 days before the CCSD of the generating facility, storage or load facility
  - For phased energizations, separate final 30-day change proposals will be required for the individual CCSDs
  - Amending Agreements will still be used to make changes to contract capacity and CCSD for in-flight projects
  - Monthly DTS billing will begin at the last recorded CCSD if the final change proposal timeline is not met

Transition Plan for In-Flight Projects

GUOC & TRP Applicability

Legacy | New | <5 MW

Pre-cluster and Cluster 1 projects	Cluster 2 projects	Cluster 3 projects	Cluster 4+ projects	Projects with STS <5 MW
• Subject to GUOC • Pay by Aug 31, 2028	• Subject to GUOC • Pay by Oct 18, 2029	• Subject to GUOC • Pay by Aug 6, 2031	• Subject to TRP • Pay in Stage 5, prior to energization	• Subject to GUOC until 1st TRP rates are known in Stage 2 of Cluster 4

- GUOC payment for connection projects will become due upon receipt of Permit & Licence (P&L)
- Projects that miss the GUOC payment deadlines will be cancelled
  - Market participants may elect to pay GUOC ahead of receiving P&L to avoid any risk of cancellation

Proposed treatment is subject to approval of ISO Tariff revisions; assume Jan 2028 Tariff effective date

PILON & Commitment Charge Applicability

Generation

Legacy	Partial-New	New	<5 MW

Pre-cluster, Cluster 1 and Cluster 2 projects (SAS agreements executed)	Cluster 2 and 3 projects (SAS agreements not executed)	Cluster 4+ projects (SAS agreements not executed)	Projects with STS <5 MW
• Subject to PILON prior to energization • No commitment charge	• Subject to commitment charge (not applicable if GUOC has been paid, or is due in Stage 2) • No PILON prior to energization	• Subject to commitment charge • No PILON prior to energization	• May be subject to commitment charge if a SASR is submitted after Tariff effective date • No PILON prior to energization

- PILON still applies to energized facilities

Proposed treatment is subject to approval of ISO Tariff revisions; assume Jan 2028 Tariff effective date

PILON & Commitment Charge Applicability
Loads

Legacy | New

Load projects (SAS agreements executed)	Load projects (SAS agreements not executed)
• Subject to PILON prior to energization • No commitment charge	• Subject to commitment charge • No PILON prior to energization

- PILON still applies to energized facilities

Proposed treatment is subject to approval of ISO Tariff revisions; assume Jan 2028 Tariff effective date

Legacy Treatment

Applicable Project Types	Contract Status	Project Stages	PILON	GUOC	Commitment Charge	TRP
Pre-cluster gen/storage	Effective	Stage 3/4, 4+	✓	✓	X	X
Cluster 1	Effective	Stage 3/4, 4+	✓	✓	X	X
	Executed	Stage 3, 4	✓	✓	X	X
Cluster 2	Effective	Stage 3/4	✓	✓	X	X
	Executed	Stage 3, 4	✓	✓	X	X
Loads	Effective	Stage 4+	✓	X	X	X
	Executed	Stage 3, 4	✓	X	X	X

Legend	
✓	Applicable
X	Not applicable

Proposed treatment is subject to approval of ISO Tariff revisions; assume Jan 2028 Tariff effective date

Partial-New Treatment

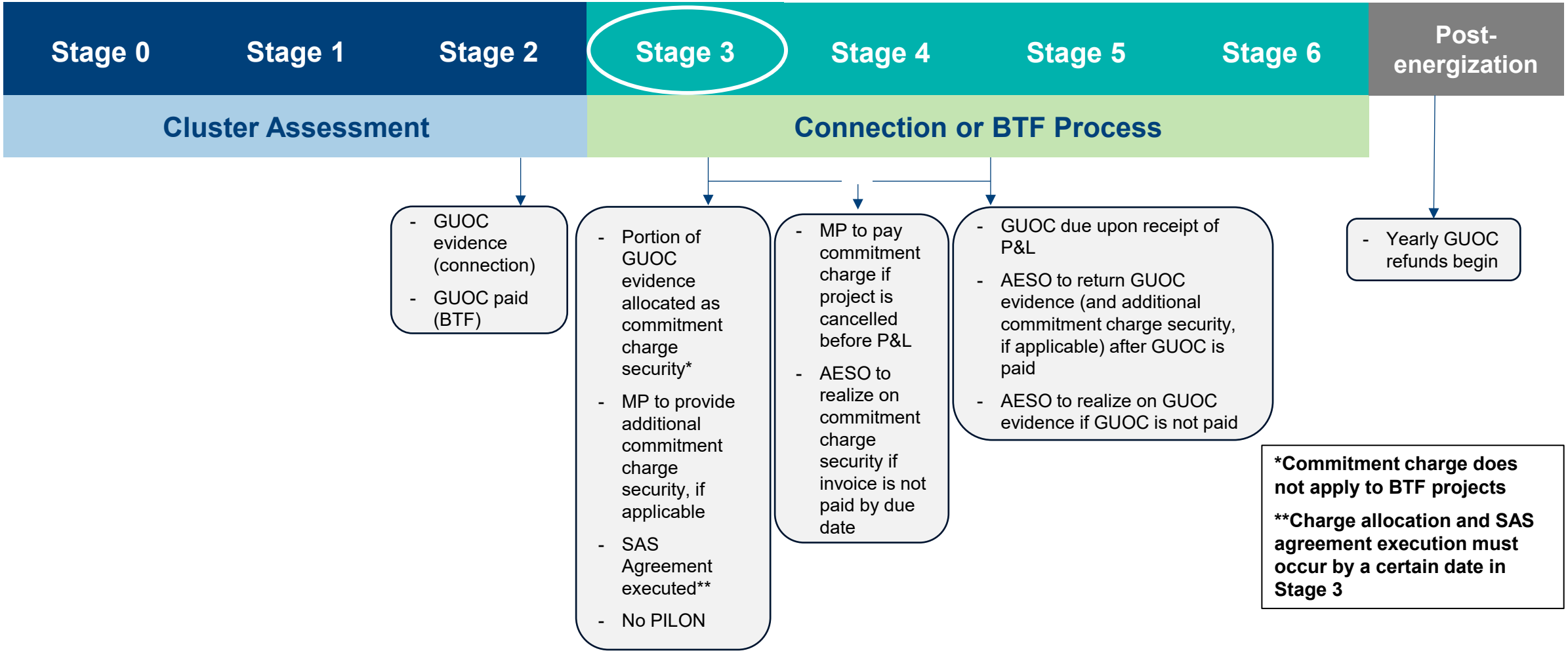
Applicable Project Types	Contract Status	Project Stages	PILON	GUOC	Commitment Charge	TRP
Cluster 2	Not executed	Stage 3	X	✓	☑	X
Cluster 3	Not executed	Stage 2	X	✓	☑	X

Legend	
✓	Applicable
X	Not applicable
☑	Applies to only connection projects

Proposed treatment is subject to approval of ISO Tariff revisions; assume Jan 2028 Tariff effective date

SAS Agreements Not Executed

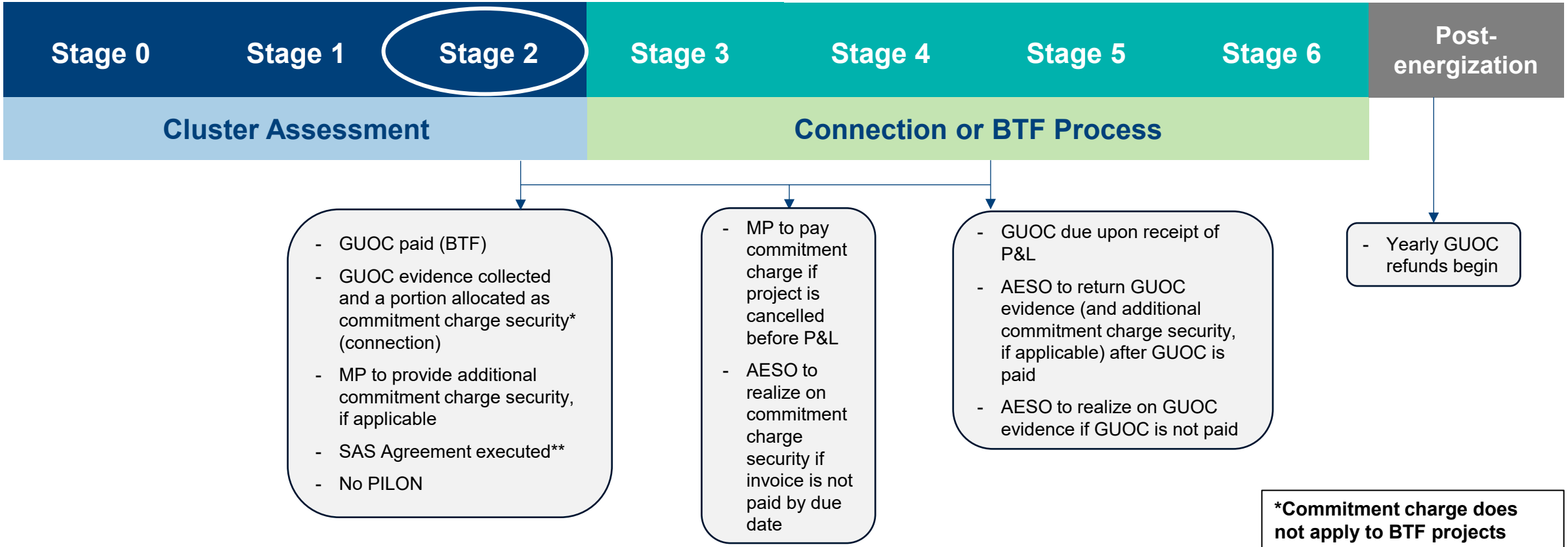
Generation Projects in Stage 3*



*As of Jan 2028 – applicable to Cluster 2 projects

SAS Agreements Not Executed

Generation Projects in Stage 2*



***Commitment charge does not apply to BTF projects**

****Charge allocation and SAS agreement execution must occur before project exits Gate 2**

*As of Jan 2028 – applicable to Cluster 3 projects

New Treatment

Applicable Project Types	Contract Status	Project Stages	PILON	GUOC	Commitment Charge	TRP
Cluster 4	Not executed	Stage 0	X	X	✓	✓
Loads	Not executed	Stage 0, 1, 2, 3	X	X	✓	X

Legend	
✓	Applicable
X	Not applicable

Proposed treatment is subject to approval of ISO Tariff revisions; assume Jan 2028 Tariff effective date

PILON

Requirement	Current state	Future state *(including transitional treatment)*
Pay PILON	• In-flight projects with executed DTS agreements • Energized facilities	• Energized facilities • *In-flight projects with DTS agreements that have already been executed by Tariff effective date*
Pay PILON by a certain due date	• At least 30 days before the reduction or termination of DTS contract capacity	• Within 30 days of the market participant receiving the PILON invoice • *Within 30 days of the market participant receiving the PILON invoice shortly after a DTS change is requested* • *Within 30 days of the market participant receiving the PILON invoice shortly after tariff effective date, for projects with outstanding PILON payments*

Proposed treatment is subject to approval of ISO Tariff revisions; assume Jan 2028 Tariff effective date

SAS Agreements

Requirement	Current state	Future state *(including transitional treatment)*
Execute SAS agreement	• Stage 3 • Effective upon execution (BTF and contract change) or upon receipt of P&L (connection)	• Stage 2 for all project types • Effective upon execution • *Stage 2 for in-flight projects in Stage 2 after Tariff effective date* • *Stage 3 for in-flight projects in early/mid Stage 3 after Tariff effective date* • *Effective upon execution for BTF and contract change projects* • *Possibly effective upon receipt of P&L for connection projects*
Give 30-day notice to amend SAS agreements to avoid premature billing	• Not applicable	• All project types

Proposed treatment is subject to approval of ISO Tariff revisions; assume Jan 2028 Tariff effective date

Change Charges

Requirement	Current state	Future state
Pay Change charges	Cluster projects in Stage 2 and beyond	All projects in Stage 2 and beyond (Cluster and Independent)

Proposed treatment is subject to approval of ISO Tariff revisions; assume Jan 2028 Tariff effective date

Next Steps

- TRP
  - We will take feedback from session and develop ISO tariff terms and conditions (Ts and Cs) to reflect the TRP methodology
  - Proposed ISO tariff Ts and Cs will be provided for stakeholder feedback prior to AUC application
- Amendments for the AESO Connection Process
  - Subsequent feedback open until May 1, 2026
  - We will take feedback and develop ISO tariff Ts and Cs
  - ISO tariff Ts and Cs coordinated with TRP and will be provided for stakeholder feedback prior to AUC application
- AUC filing estimated July 2026 along with OTP ISO rule

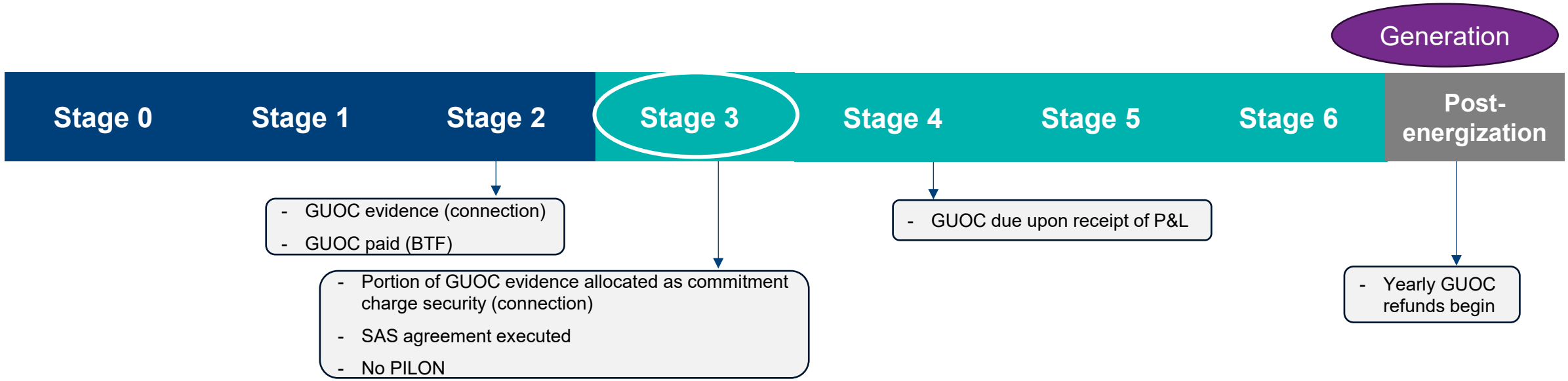
Thank You

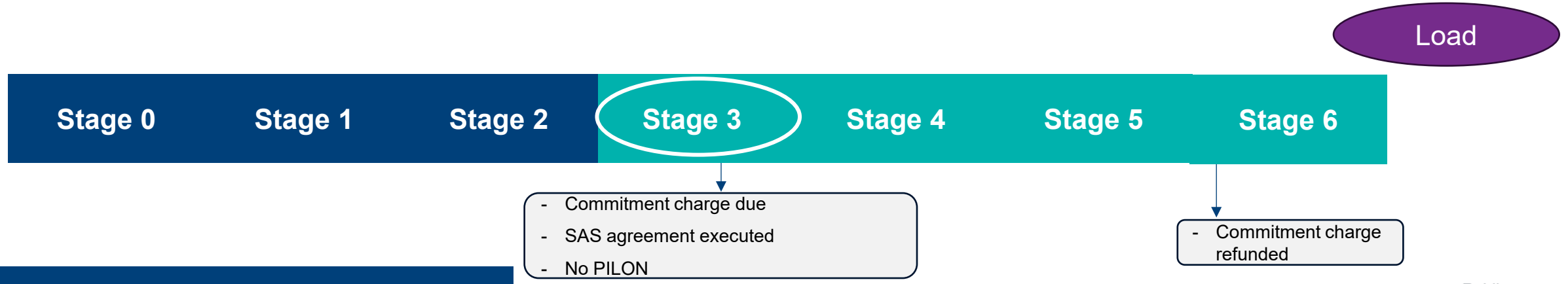
- Please take a moment to provide us with feedback on how we run these sessions
- Different ways to provide feedback
  - Complete the Teams poll,
  - Scan the QR code, or
  - Visit below link to complete the MS form:
- Amendments for the Connection Process Stakeholder Session Day 2

Appendix

SAS Agreements Not Executed

Stage 3 Generation vs. Load Projects*

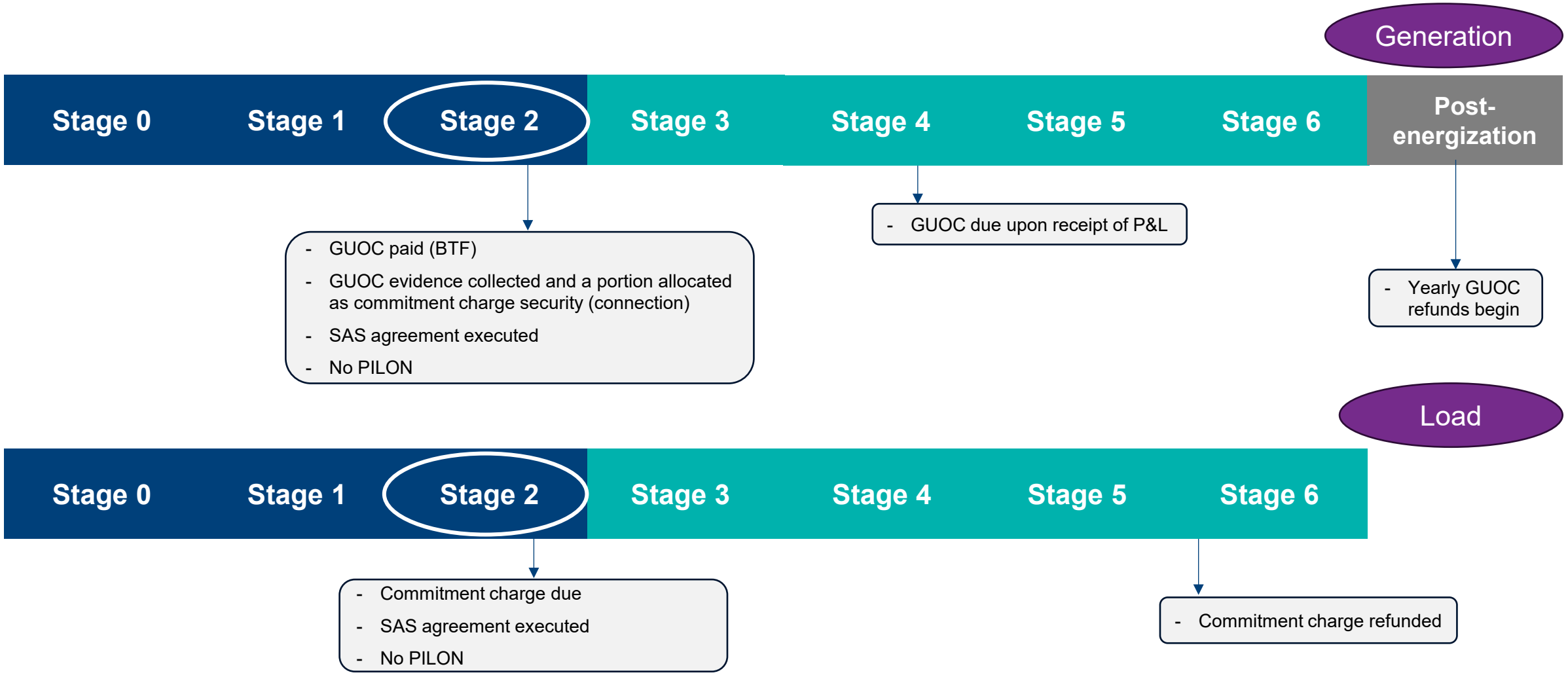




*As of Jan 2028

SAS Agreements not Executed

Stage 2 Generation vs. Load Projects*



*As of Jan 2028