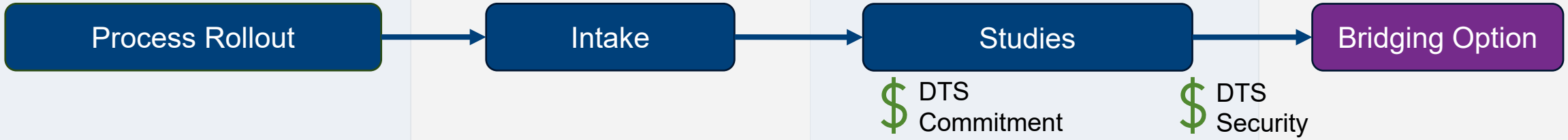
Alberta Electric System Operator

Large Load Integration Phase 2A

Proposed BYOG Process

June 26, 2026

BYOG Process Overview



AESO will post all process details after stakeholder engagement has concluded

Details

1. Load Applicability
2. Generator Qualification
3. Tethering Ratio

Applications are accepted for 6 weeks following the process rollout

Details

4. Application Requirements
5. BYOG Checklist
6. Tethering Application
7. Tethering Ts and Cs

Studies are performed and AESO issues the connection alternative and DTS contract

Details

8. Scoping Process
9. DTS Commitment Fee
10. Connection Studies
11. Projects Needing System
12. Contract Execution

Loads with advanced generation have an option to energize early

Details

13. Bridging Qualifications
14. Bridging MW Limits
15. Limit Allocation
16. Allocation Checkpoints
17. Bridging Ts and Cs

❶ BYOG Load Applicability

- The BYOG Process is inherently applicable to **loads**
- This process will be used by:
  - Loads seeking DTS of 75 MW or over who are bringing qualified generation to the grid
    - See ❷ **Generator Qualification** for more information
    - Includes data centre or industrial load connecting to the transmission system
    - Does not include energy storage, distribution load, or distribution-connected load
  - DTS will be aggregated for assessing load size
    - Load requests for the same site for the same market participant (or affiliate) will be considered together
    - Load requests split into phases will be considered together
  - Loads may be new requests or already exist in the project list

2 BYOG Generator Qualification

- BYOG requires reliable and predictable electricity production under normal operating conditions
- Qualifying generation:
  - Initial BYOG intake will be limited to gas-fired thermal generation only
    - Includes single cycle, combined cycle, cogeneration, reciprocating engines, etc.
    - Future BYOG rounds may consider other technologies that can demonstrate they can maintain the reliability and adequacy of the grid
  - Generation must be “net new” since the last AESO connection limit assessment
    - Phase 1 assessment included the full MC of all active, “certain”, and mothballed generators
    - Increases to capability of existing generators are considered as “net new”
    - The AESO will post a list of generators and MC that was used in the previous assessment
  - Generation may be standalone or co-located / self-supply
  - Generation may be a new request or already exist in the project list

❸ BYOG Tethering Ratio

- Ratio: **Generator Output @ (25°, 40% humidity, .093 bar) = DTS Contract Capacity**
- The AESO requires a “tethering ratio” of generation to load for BYOG
  - Goal is to offset the adequacy impacts of the new load on the grid
    - Being overly conservative risks oversaturating the market with generation
    - Not being conservative enough risks energy shortfalls
  - Generation factors to consider:
    - Generators operate at lower levels than maximum capability, especially in summer
    - Not all generators will be available all the time, experience typical outage rates
    - Increased generation requires increased operating reserves
  - Load factors to consider:
    - Loads will operate at lower levels than the DTS size, but will be highest in summer for cooling requirements
    - Increased load requires increased operating reserves
  - Generators will be asked to provide an explanation of their output on the ❻ **Tethering Application**

4 Application Requirements | Documentation

- Documents:
  - Submission of BYOG Checklist by load proponent
    - See 5 **BYOG Checklist** for more details
  - Submission of Tethering Application by load proponent
    - See 6 **Tethering Application** for more details
  - SASRs for load project and generation project(s)
    - A single SASR may be submitted for co-located facilities
    - SASRs may be new or already submitted for existing projects
    - SASRs must be complete with all required information and attachments
  - Additional load requirements (data centres only):
    - Conceptual facility diagram as outlined in the AESO's SLD Guideline for Projects
    - Letter* from municipality / county confirming proper zoning or an approved area structure plan to rezone
    - Confirmation* of obligation to meet Connection Requirements for Transmission Connected Data Centres

*AESO will provide document templates for these items

4 Application Requirements | Intake Process

- Intake for the BYOG Process will begin immediately following the release of all process material
- Intake will last for a period of six weeks
  - There will be no grace on late applications
- Requests to apply should be submitted to customer.connections@aeso.ca
  - Load proponent should submit the email, with a cc to generation proponent
  - Include all required documents with the email, except for SASRs
  - New SASRs are to be submitted through the online portal
    - Standalone generation projects or self-supply with 5 MW or more of STS should use the Cluster SASR
    - Load projects or self-supply with under 5 MW of STS should use the Independent SASR
  - In-flight projects should check with their AESO project manager to determine if change proposals or new SASRs are required
    - Changes to existing SASRs may be required to align with BYOG requirements

5 BYOG Checklist | Basics

- Load and generation entering the BYOG Process will need to complete a BYOG Checklist
- The checklist will consist of two sections:
  - Mandatory requirements for each of load and generation
    - These items must be completed for both load and generation to enter the BYOG Process
  - Optional “readiness” items for load and generation to assess project likelihood to proceed
    - Load and generation must individually check a minimum number of items
    - Load and generation must check a minimum number of items combined
  - Checklists for non-data centre loads will only need to complete the mandatory items
- The checklist must be executed by an officer of the company for both the load and generator
  - Sign-off will attest to the veracity of the checklist
  - If any items on the checklist are later identified to be false, both load and generation will be removed from the BYOG Process, and the offending project cancelled

5 BYOG Checklist | Checklist Items

	Load	Generation
Mandatory Items	❑ Site control: ownership, lease, or options ❑ Letter indicating approved zoning or area structure plan ❑ Conceptual facility SLD provided ❑ Acknowledgment of obligations to meet TCDC	❑ Cluster SASR requirements met: Site control, conceptual facility SLD, PDUP & checklist
Scored Items	**Minimum Scored Required: 2**	**Minimum Scored Required: 2**
Ownership		❑ Distinct corporate entity from load
Experience / Resume	❑ Existing data centre portfolio of 100 MW or more ❑ Investment grade (BBB-) credit rating or higher	❑ Existing generation operations in AB over 100 MW ❑ Investment grade (BBB-) credit rating or higher
Commitments	❑ $10M or more committed to project for major equipment ❑ Major equipment suitable for project in inventory	❑ $10M or more committed to project for major equipment ❑ Major equipment suitable for project in inventory
Siting Approvals	❑ Expansion of existing operational data centre facility ❑ Water rights secured or not seeking water rights ❑ All zoning approvals complete ❑ Development permits issued	❑ Expansion of existing operational generation facility ❑ Required environmental applications submitted ❑ Power plant application administratively complete ❑ Power plant application approved
Site Feedstock	❑ Fiber capacity secured	❑ Gas capacity secured

Minimum Scored Required Between Load and Generation: 6

Rollout | Intake | Studies | Bridging

❻ Tethering Application

- The Tethering Application is an AESO template that will contain the following information:
  - Tethering Type: self-supply or standalone facilities
  - Load Information
    - New SASR date or existing project number
    - Project applicant
    - Requested DTS MW (this MW is determined by the ❸ **Tethering Ratio**)
  - Generator Information
    - New SASR data or existing project number
    - Project applicant
    - Tethered generation MW (with an explanation of how the output was determined)
    - Generator commercial operation date (with any staging of MW)
- Must be executed by an officer of the company for both the load and generator
  - Sign-off will agree to the tethering terms and conditions and BYOG process
  - If load is tethering to multiple generators an application per relationship is needed

❼ Tethering Terms and Conditions | Baseline Terms

- General Terms
  - — “Tethering” ties load and generation projects together in the connection process
    - Ensures that sufficient generation energizes to offset the impacts on adequacy of serving the load
  - — Tethering is concluded once both generation and load projects reach commercial operation
  - — There are no tethering operational ties post commercial operation
    - This does not preclude proponents from entering into their own commercial agreements
- Energization of Load
  - — The “tethering in-service date” (ISD) is the commercial operation date of the generator
  - — Load facilities will be allowed to energize no more than three months in advance of the tethering ISD
    - If generation is staged or there are multiple tethering agreements a corresponding amount of load will be allowed to energize
    - Generators must be energized and on track for commissioning before load is given energization authorization
- Bridging Load
  - — In some cases, a load may energize earlier if approved for “bridging” (see ⓭-⓱ **Bridging Option**)

7 Tethering Terms and Conditions | Project Changes

	Loads	Generators
Generation Delays	• A delay to the generator will shift the 3-month load energization window out equally • If the load is already energized, a delay that results in a window of greater than 3 months will result in the load service being suspended until the generator is commercially operational • Loads may apply for bridging but it is not guaranteed	• Generation delays are allowed so long as the energization remains in the study window • Delays outside the study window may be rejected
Generation Reductions	• The load agrees to decrease their DTS MW to satisfy the tethering generation to load ratio	• Generation reductions will follow the cluster process rules
Generation Increases	• The load will be allowed to increase their DTS, so long as the increase does not cause a change in studies or alternative • If an increase does cause a change in studies or alternative, the load may apply for the increase in the next BYOG intake	• Generation increases will follow the cluster process rules • Allowed increases may be reflected on the load side
Facility Nature / Location Changes	• Minor changes will be allowed to either load or generation facilities that do not lead to a change in the studies or connection alternatives • Changes that lead to a change in studies or connection alternatives will be rejected, and the projects may continue as is or cancel	
Applicant Changes	• Changes to the applicant for either the load or generation are allowed, and will follow the same process as applicant changes to SASRs in the regular Connection Process • The Tethering Application must be resubmitted under the new applicant, and must continue to meet all requirements to enter the BYOG process, even in later stages of the process	

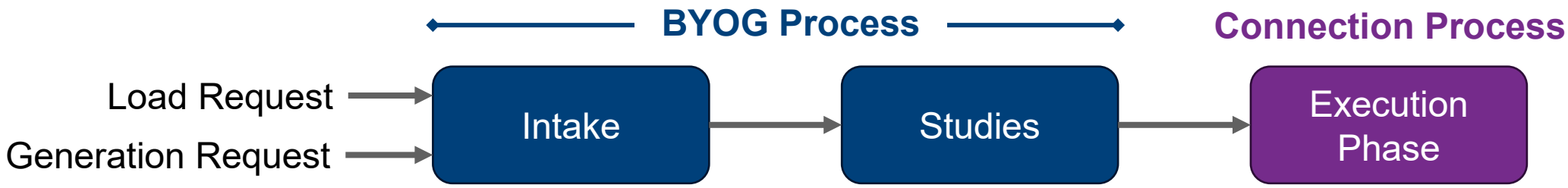
7 Tethering Terms and Conditions | Cancellations

	Loads	Generators
Generation Cancellations	• A period of 3 months* will be allowed for the load to find a "like-for-like" replacement for the Tethering Application • If a replacement is not found in 3 months, the Tethering Application will be cancelled, and the load may reapply in a future BYOG intake • For loads prior to energization, the load project will be cancelled • For energized loads, the DTS service will be terminated	• The generator project is removed from the Tethering Application and may reapply in future BYOG intakes as "net new" generation
Load Cancellations	• The load project is removed from the Tethering Application and may reapply in future BYOG intakes as a new project	• A period of 3 months* will be allowed for the generator to find a "like-for-like" replacement for the Tethering Application • If a replacement is not found in 3 months, the Tethering Application is null and void • The generator will be eligible to enter into a Tethering Application as "net new" in any BYOG intakes occurring in the following 18 months. • If the generator is not tethered in a BYOG intake in the following 18 months, the generation will be considered as existing system supply

*The AESO may extend the 3-month period if it determines that good-faith efforts are being made to finalize securing a replacement

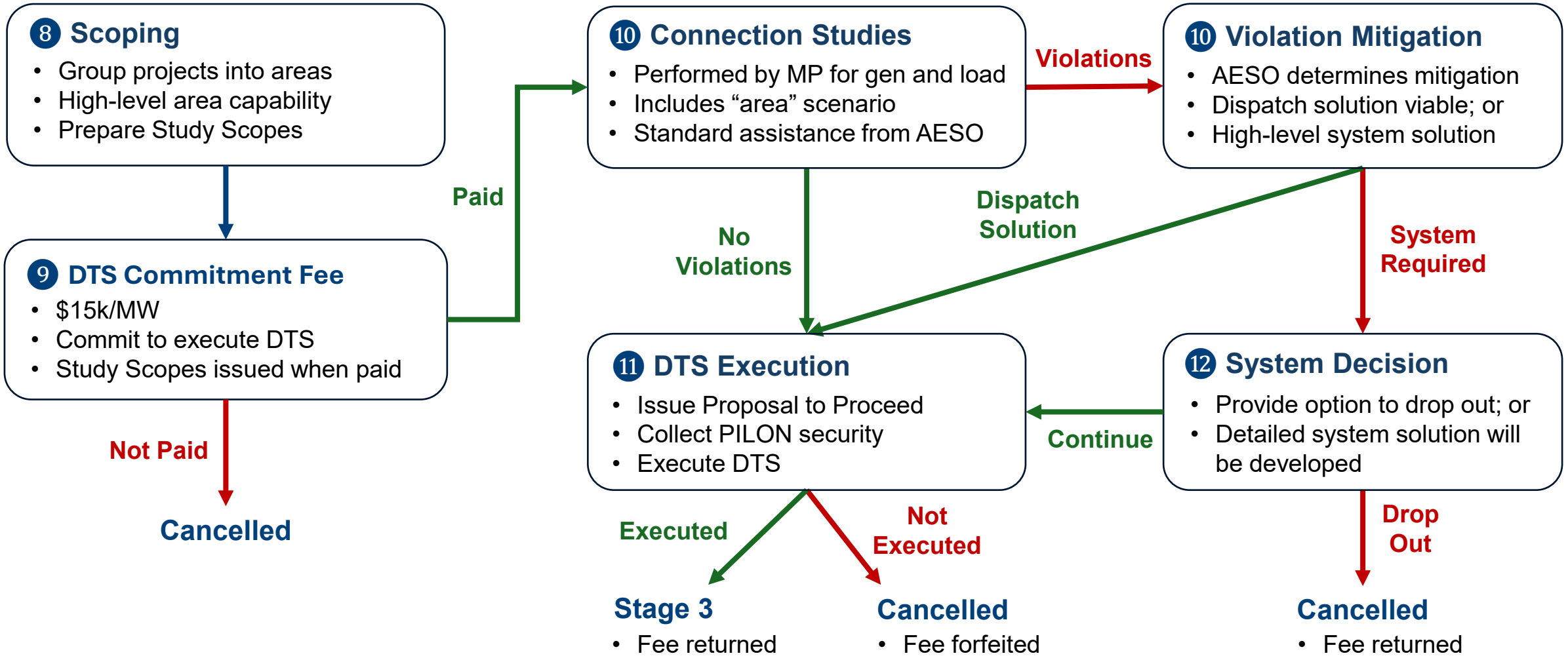
8 - 12 Studies | Process Overview

- Load **and** generation will move together through the BYOG Process:



- Generation will be studied with the load in the BYOG Process rather than the cluster
  - BYOG studies will occur in parallel with cluster studies
  - Generation already studied does not need to be restudied and can continue outside the BYOG process
- Load drop-outs in the process will not automatically result in a generator cancellation
  - Generation can continue in the cluster process or execution phase, depending on study status
  - Generators should submit a SASR for Cluster 3 if they want to keep that option open

8 - 12 Studies | Process Flow



8 Scoping Process

- Upon closure of intake the AESO will perform an assessment of the BYOG projects
- The assessment will determine which BYOG load and generation projects are in the same area of impact for the purpose of studies
  - Projects in the same impacted area will be included in a study scenario; see 10 **Connection Studies**
  - Applicants will be provided the list of projects in the project impacted area
  - Available information on area load capacity will also be provided (but may vary)
- Applicants will decide if they wish to continue in the study process
  - The number of projects in the area or likelihood of system may impact a decision to continue
  - Loads will be invoiced for the 9 **DTS Commitment Fee** with a 30-day deadline
  - Study scopes will be prepared by the AESO in parallel with the payment period
- Final Study Scopes will be provided if the DTS Commitment Fee is paid
  - Projects will be considered to have passed Gate 1 of the process

9 DTS Commitment Fee

- At intake close, load projects will be invoiced for a refundable “DTS Commitment Fee”
  - Fee is $15k / MW of DTS capacity
  - Fee payment is required for the AESO to issue a final study scope
- Fee will be **refunded** to the load upon:
  - Execution of the DTS for the load project; or
  - Cancellation of the load project if the AESO determines a system solution is required to connect
- Fee will be **forfeited and kept** by the AESO if:
  - The load project cancels (or is cancelled) during connection studies; or
  - The load project cancels (or is cancelled) during detailed system solution development; or
  - A DTS is issued by the AESO but not executed by the load project
- Fee invoice will be **rescinded** (and the project cancelled) if the load project indicates it does not want to proceed with studies at or before the fee payment deadline

10 Connection Studies | Study Work

- Connection studies will by default be performed by the **load proponent**
  - Studies will be performed for both the load and generation connection*
  - Generation and load may collaborate to determine how to provide study results
- Studies will include standard power flows typically done in the independent study process
  - Studies will include two scenarios:
    - Load project and tethered generation project*
    - Above, plus any BYOG load or generation projects in the project impacted area
  - MPs are free to collaborate on studies when the second scenario is shared
- Projects will proceed into the standard execution phase for an independent assessment process:
  - Standard Stage 2 deliverables for both load and new generation will be required to advance
  - Data centre loads must perform dynamic studies in Stage 3
  - Newly studied generation projects must perform dynamics studies in Stage 3

*Generation projects that were already studied do not need restudies and will be included as part of the base case

⑩ Connection Studies | Study Results

- The AESO will assess study results and determine the appropriate solution for any violations
- For load projects where study results show no violations:
  - The AESO will issue a Proposal to Proceed (P2P) for the connection alternative
  - A DTS contract will be issued for execution (see ⑫ **Contract Execution**)
- For load projects where study results show violations:
  - The AESO will determine if there is a dispatch solution that does not require system
  - If a dispatch solution exists, a P2P and DTS contract will be issued as above
  - If a dispatch solution does not exist, projects will need system (see ⑪ **Projects Needing System)**
- Generation projects will proceed as though they were in the independent assessment process
  - The AESO will issue a Proposal to Proceed (P2P) for the connection alternative
  - An STS contract will also be issued for execution (see ⑫ **Contract Execution**)

11 Projects Needing System

- In some cases, connection studies will show that system development is required to connect
- The AESO will provide a high-level solution (scope, time, cost) and the load proponent may:
  - Choose to continue with the AESO development of a detailed system solution; or
  - Reduce their load to the point where the system development is no longer required; or
  - Drop out of the process and have their DTS Commitment Fee returned
- If continuing, the AESO will perform detailed system development:
  - Timelines to develop the system alternative will vary with the size of the scope
  - The AESO will issue a P2P for the connection alternative that includes the system development
  - A DTS will be issued with an ISD that reflects the need for system work (see **12 Contract Execution)**
  - Projects will have the option to advance system work to the extent possible
- Projects will be able to use any available system capacity
  - The DTS contract may be staged to allow for initial load while system is being built
  - If multiple projects are driving system, available capacity will be split pro rata based on DTS request

12 Contract Execution | DTS Contracts

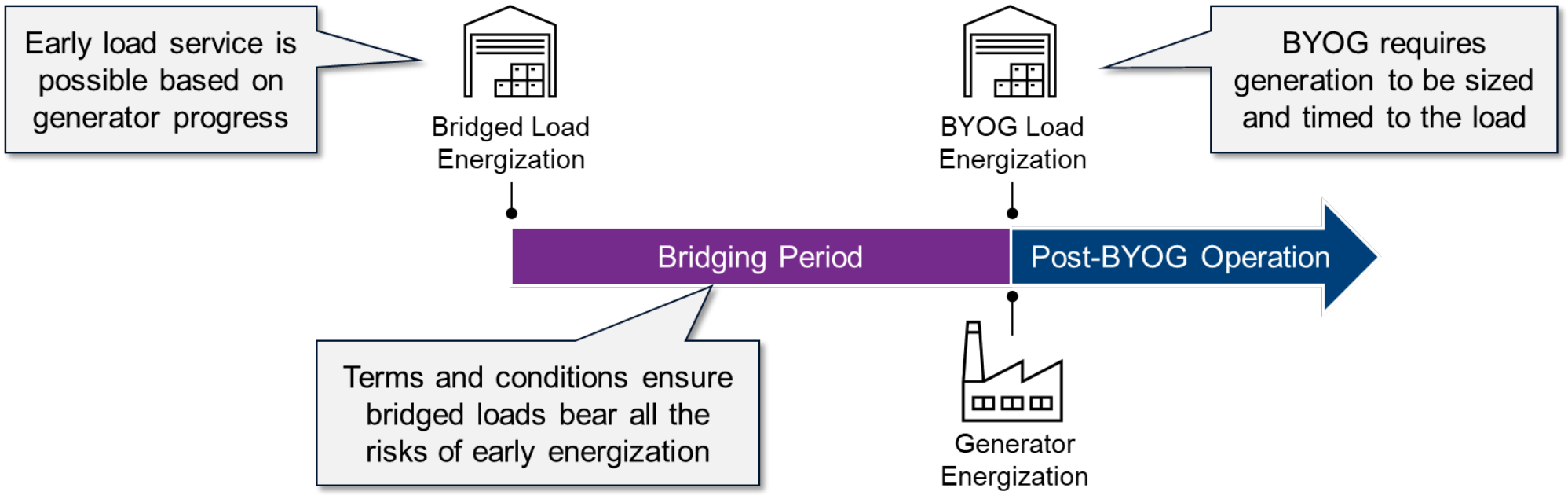
- A DTS will be issued for execution if studies show:
  - The load can be connected without violations, or violations can be mitigated by dispatch solutions
  - System is needed and the applicant has agreed to proceed (see 11 **Projects Needing System**)
- DTS contract capacity and start date will generally reflect the details of the Tethering Application
  - Modifications will be allowed for staging or to reflect a need for system build
  - Transfers to end-use market participants will be allowed at this time, or may occur later
- Security must be provided prior to DTS execution
  - Security will be required for full PILON obligation and two months of zero-energy DTS billing
  - Completed calculators for PILON and DTS will be provided
  - DTS Commitment Fee will be returned upon DTS execution
- Provision of security and execution of DTS must occur within 30 calendar days
  - The AESO will be available to coordinate security throughout the study period
  - Projects failing to provide security and execute the DTS within 30 days will be cancelled

12 Contract Execution | STS Contracts

- STS contracts will be issued after acceptance of the Proposal to Proceed
  - Not typically required at this point for generation projects
  - Issued to align with related load projects in the BYOG Process
  - Transfers to end-use market participants will be allowed at this time, or may occur later
- GUOC Evidence will be required to complete Stage 2 for new generation projects
  - An invoice for GUOC evidence will be issued in parallel with the STS contract
  - Provision of evidence secures the connection alternative for the project in other studies
  - **Note:** The DTS contract will not be executed by the AESO until GUOC evidence is received
- Note that in cases where the load does not execute a DTS contract, the generator may:
  - Find a like-for-like load replacement for BYOG (see 7 **Tethering Ts and Cs**)
  - Complete the steps above and continue in the process outside of BYOG; or
  - Also elect to not complete the steps above, and cancel the project

13 - 17 Bridging Option | Overview

- Bridging offers an option for BYOG loads to receive some starter load before their generation
  - Bridged loads bear the risk of energizing in advance; load will be shed when a shortfall is predicted
  - Must meet bridging qualifications to be given a bridging contract
  - Maximum timeframe of 3 years; service suspension if terms and conditions are broken



13 Bridging Option | Bridging Qualifications

- All loads progressing through the BYOG Process are eligible to qualify for bridging
- Qualifications that must be met for a bridging contract to be **issued**:
  - DTS and STS contracts must be executed for the tethered load and generation projects
  - GUOC evidence must be provided for the tethered generator
  - Power plant application for the tethered generator must be filed
- Qualifications that must be met for a bridging load to **energize**:
  - Tethered generators must demonstrate significant likelihood to proceed:
    - GUOC must be paid
    - Power plant must be approved, and any related connection P&L must be issued
    - Generator must demonstrate that meaningful construction has begun
  - Loads must demonstrate they are capable of complying with a directive to curtail if needed
    - Similar test as required for DOS qualification

14 Bridging Option | Bridging MW Limits

- The overall volume of bridging load will be limited to 1600 MW
  - Limit will be shared across BYOG intakes (i.e., it is not per intake, but overall on the grid)
  - Bridging MW will free up as BYOG generators energize and loads enter standard operation
  - The limit will be evaluated at each intake to determine if changes are needed
- Bridging contracts will be issued for the MW available for energization
  - Projects must meet bridging qualifications to apply for a contract (see 13 **Bridging Qualifications**)
  - Amount available to contract is based on progress milestones for the tethered generation
    - Max of 20% of DTS request for generator power plant application filed
    - Max of 30% of DTS request for generator power plant approved
    - Max of 40% of DTS request for generator under construction (after receiving connection P&L)
  - Full amounts may not be available if the limit has been reached (see 15 **Limit Allocation**)
  - Contracted amounts will be forfeited if projects are progressing (see 16 **Allocation Checkpoints**)

15 Bridging Option | Limit Allocation

- Bridging contracts will be allocated on a first-come first-serve basis
  - It's assumed that multiple projects will request bridging at Gate 2 for an initial allocation
  - Projects can request an increase as they achieve progress milestones (see 14 **Bridging MW Limits)**
  - Increases from initial allocation will depend on volume of MW remaining of the limit
- Initial allocation will prioritize lowest tiers and highest progress
  - The progress milestone tiers will be allocated in order:
    1. 20% of DTS for all projects with generator power plant application filed
    2. If limit MW remain, allocation will increase to 30% of DTS for all projects with generator power plant approved
    3. If limit MW remain, allocation will increase to 40% for all projects with generator under construction
  - Within each tier, allocation will occur in order of progress:
    1. Allocations will first go to projects with generator under construction
    2. Allocations will then go to projects with generator power plant approved
    3. Allocations will then go to projects with generator power plant application filed
  - When remaining limit MW are insufficient for an allocation step, allocation will be pro rata

⑯ Bridging Option | Allocation Checkpoints

- Checkpoints will ensure that progress is being met after allocation:
  1. Initial application and bridging contract
     - Subject to ⑬ **Bridging Qualifications**
  2. 1-year from initial contract progress checkpoint
     - Generator Power plant must be approved
     - Load facility must be under construction
  3. 2-years from initial contract energization checkpoint
     - GOUC must be paid
     - Gen connection P&L must be granted
     - Generator must be under construction
- Failure to meet a checkpoint will result in the forfeiture of bridging MW
  - Load proponents agree to reduce contract capacity to zero for a missed checkpoint
  - Freed up MW will go back into the allocation pool for others
  - Bridging can only be requested again once energization checkpoint requirements have been met

17 Bridging Option | Bridging Terms and Conditions

- Bridging will be limited to a maximum of 3 years in advance of generator commercial operation
  - Terms will be set based on expected generator commercial operation date
  - Terms may be extended to a maximum of 3 years if the generator is demonstrating progress
- Bridging load is fully interruptible and prioritized for supply shortfalls
  - Load will be required to reduce before all other non-firm load when needed to avoid a shortfall
  - Curtailment scheme is TBD (e.g., pro rata, rotation, combination)
- Bridging service will be suspended (reduced to zero) for the following reasons:
  - Failure to comply with a direction to curtail
  - Exceeding bridging load contract capacity
  - Exceeding bridging term (either the max 3 years or shorter period set by the AESO)
  - Cancellation of tethered generator project (subject to “healing” provisions in BYOG Ts & Cs)
- PILON will apply for any reductions, suspensions, or terminations of bridging contracts

Alberta Electric System Operator