Behind the Fence (BTF) Process: Updates and proposed changes

November 26, 2019

Welcome

- Refreshments available outside the room
- Wi-Fi Network: Westin_Conference
  - Password: **AESO2019** (case sensitive)

Today's agenda

- [ ] Purpose of today's event
- [ ] Presentation: Behind the Fence process changes
- [ ] Breakout sessions: World Café format
- [ ] Next steps

AESO Stakeholder Engagement Framework

Objectives

- Review the history and background of the Behind-the-Fence (BTF) Process
- Provide an overview of changes to the BTF Process resulting from the Amended 2018 ISO Tariff and engage with stakeholders on six proposed BTF process changes
- Provide an overview of feedback received at November 2018 stakeholder session

Scope of presentation

IN SCOPE: BTF Process

Out of scope:

- Connection Process or Contract Change Process
- Debate the 2018 ISO Tariff Application and AUC Decision
- Project-specific information or questions

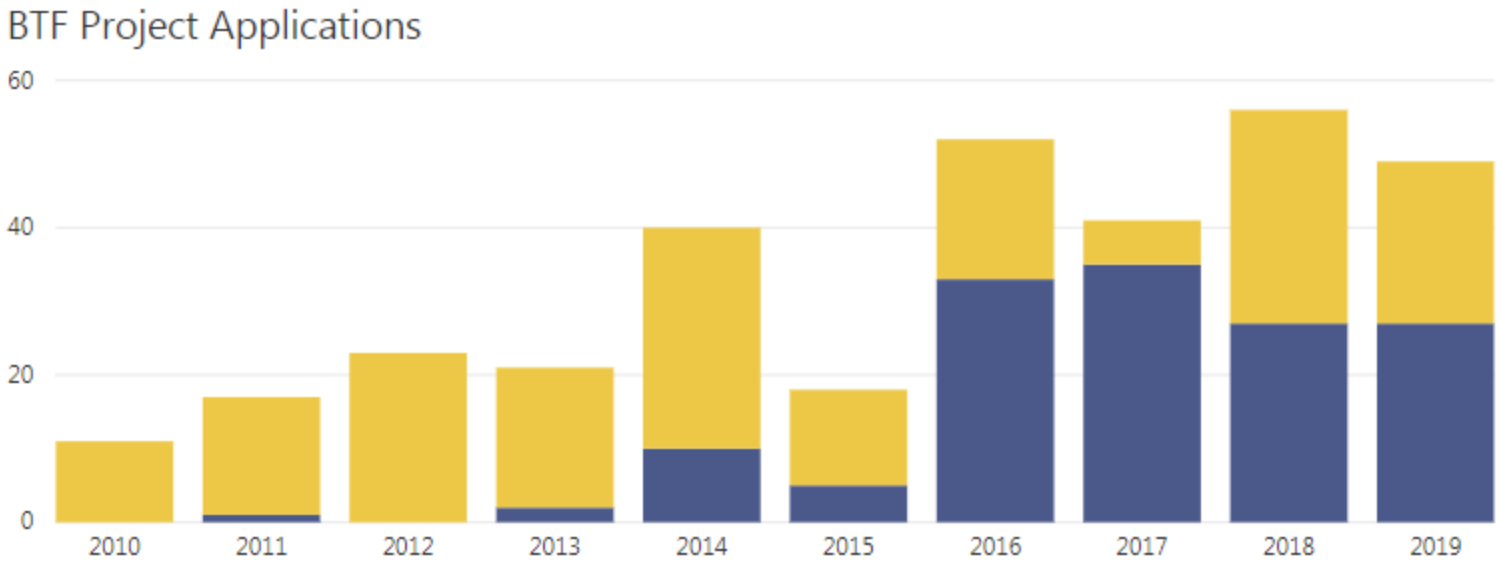
History of BTF Process

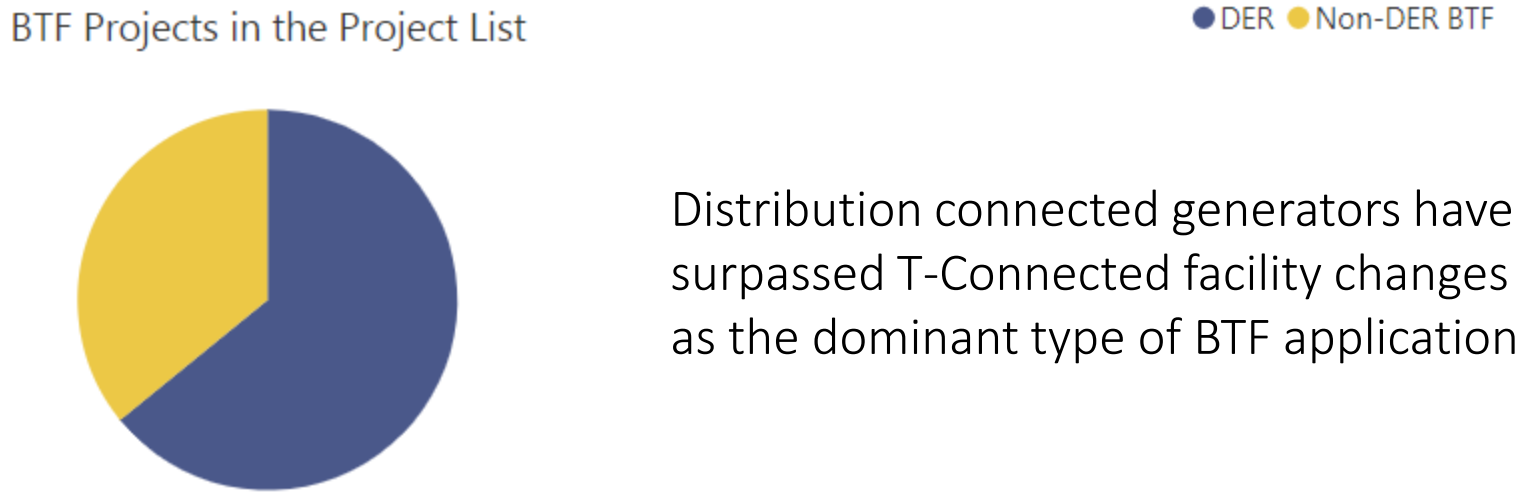
- BTF Process was originally designed primarily for existing customers wanting to make changes to their facility
- Streamlined path of the connection process
- In recent years, SASR applications from DFOs have increased for adding distribution-connected generation

Why Distributed Energy Resources (DERs) follow the BTF process

- For a new DER, a DFO may require a new or altered SAS agreement and revenue meters at the existing point of connection
- For DERs that are > 5 MW
  - SCADA requirements
  - Modelling data requirements
- There are no transmission facilities required (no NID) but studies may be required to assess impact to the AIES
- The process requirements are the same for existing generators

Increase in DER Projects

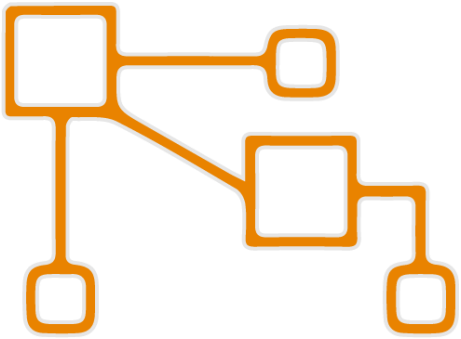


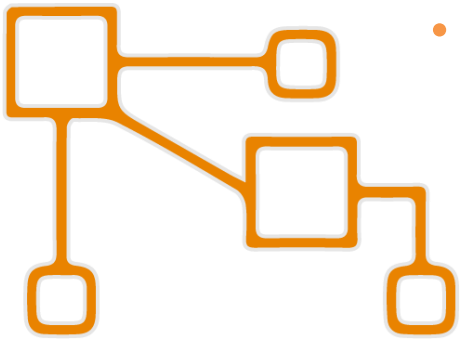


Distribution connected generators have surpassed T-Connected facility changes as the dominant type of BTF application

BTF Process Overview

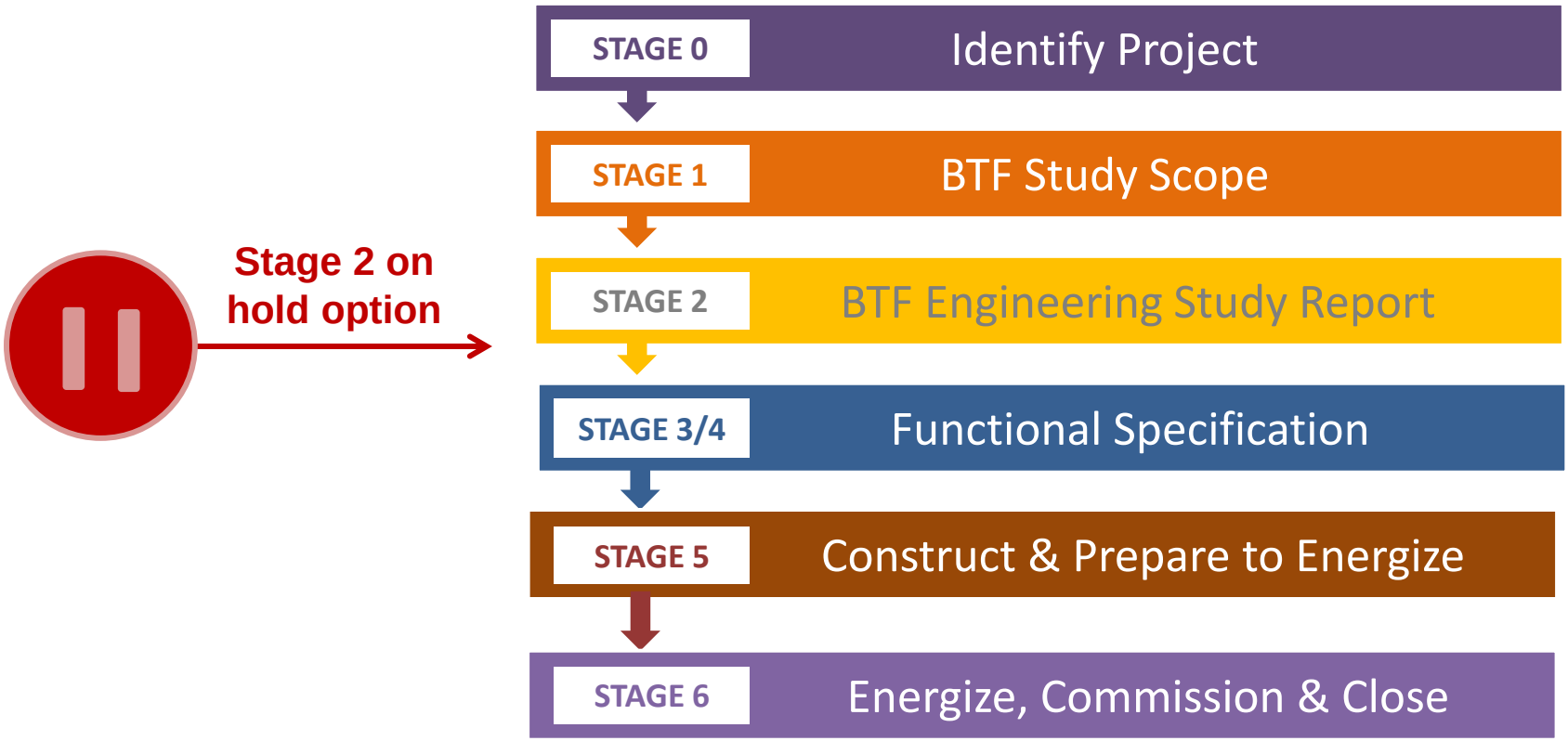
- **The BTF Process:**
  - Provides an open and fair process for market participants to alter their existing system access service on the transmission system
  - Does not require the addition or alteration of facilities on the transmission system (i.e. no NID filed)
  - Gated approach with six stages (Stages 0 through 6); deliverables required in each stage





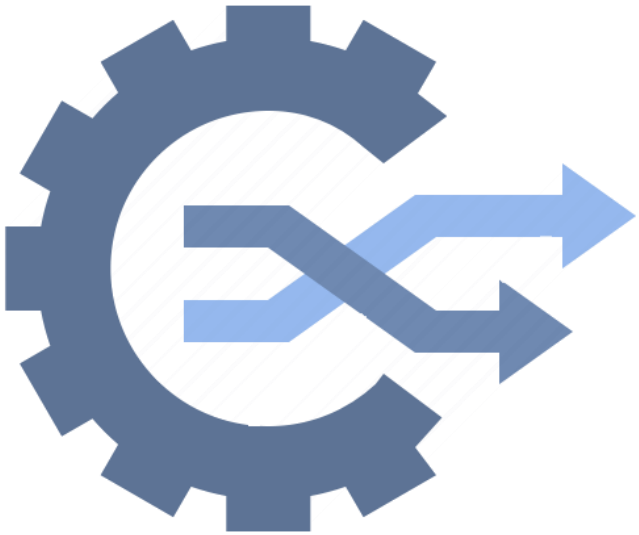
- **Examples of BTF Projects:**
  - Adding/modifying equipment to existing T-connected generator
  - DFO is adding new D-connected generator
  - Change to Industrial System Designation facility

BTF Process Overview – Current State



Drivers of Change

- Increase in SASRs for distribution-connected generation
- Amended 2018 ISO Tariff Application
- Feedback from November 2018 Connection Process Stakeholder Session



2018 ISO Tariff Application

- The Amended 2018 ISO Tariff Application (the “Application”) was filed in August of 2018
- The AUC provided the decision on September 22, 2019
- The AESO will file a Compliance Filing by January 31, 2020
- The AESO expects the AUC will provide a decision on the Compliance Filing within 90 days of close of record
- The effective date of the Amended 2018 ISO Tariff is still TBD
  - The AESO will request that the effective date be the 1st of the month and at least 30 days after the AUC’s decision on the Compliance Filing

1. Critical information – System Access Service Request (SASR)

Current Tariff	2018 ISO Tariff
Includes construction contribution and GUOC • Scope changes are managed through change proposals	Includes ISD, location, and capacity • Changes are managed through a SASR amendment • Possible SASR cancellation or NID cancellation if changed

Why make this change?

To incent the market participant to provide accurate information at the beginning of the process to help the AESO make better decisions.

1. Critical information – SASR

- Critical Information = ISD, location of connection, and capacity (MW)
- Changes to critical information will require the market participant to request an amendment to the SASR
  - In response, the AESO can accept the change or cancel the SASR

2. System Access Service (SAS) Agreement – Timing

Current Tariff	2018 ISO Tariff
Contract is signed prior to Energization: • Little impact on Rate DTS payments if ISD was delayed • Little impact on Rate STS projects that are inactive or ISDs are delayed	Contract is executed 30 days after Engineering study: • Contract is effective the day it is signed • Rate DTS payments will begin on the contract start date

Why make this change?

Provides project certainty for the AESO by requiring earlier execution of SAS agreement.

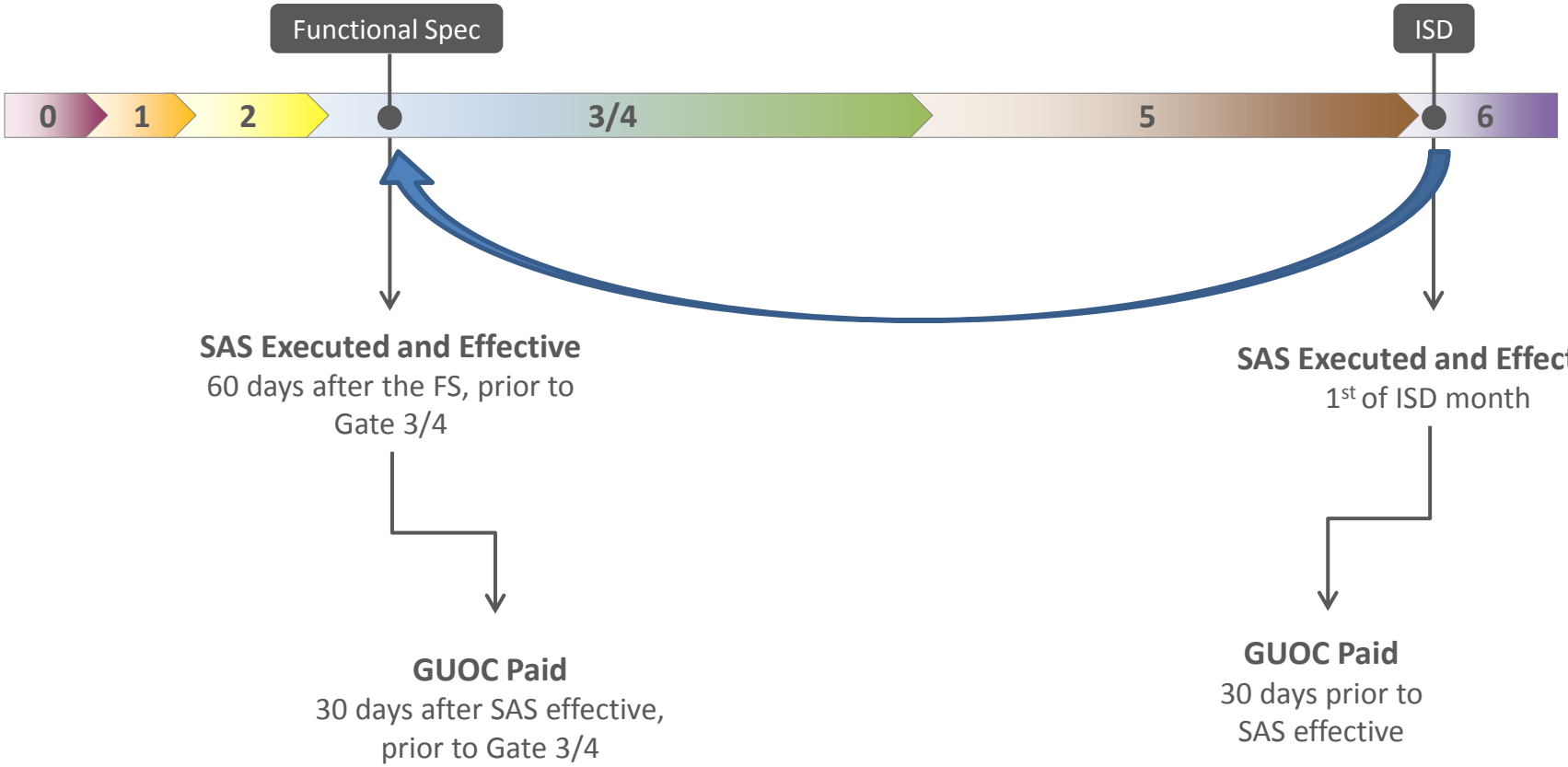
3. Generating Unit Owner's Contribution (GUOC)

Current Tariff	2018 ISO Tariff
Paid 30 days prior to the SAS effective date (energization): • Delay of ISD does not impact GUOC refund payment • Market participant pays GUOC • GUOC is based on STS	Payment must be made 30 days after SAS effective date. • Refund assessment and payments based on executed contract start date • Generator owner pays GUOC • GUOC is based on Maximum Capability (MC)

Why make this change?

Provides project certainty for the AESO by requiring earlier payment of GUOC.

SAS Agreement and GUOC – Timing changes



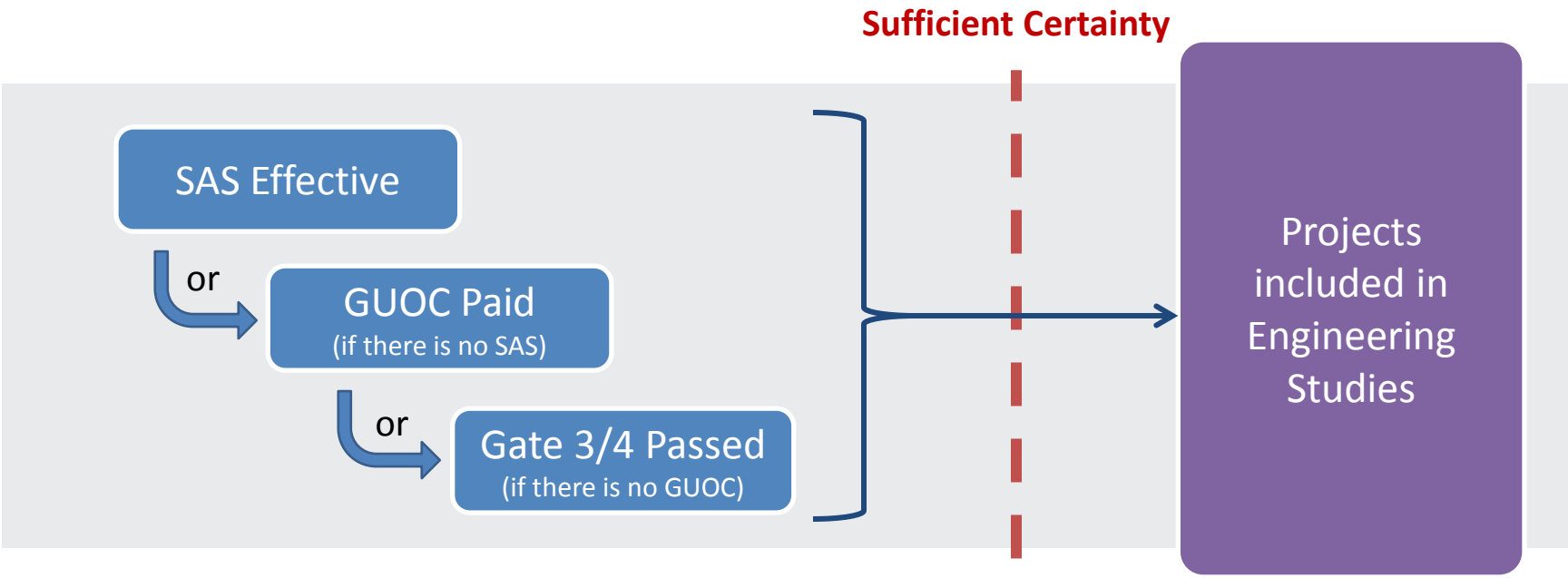
4. Project inclusion criteria

- The tariff requires project inclusion in studies once the SAS is effective
- The AESO may develop inclusion criteria that is earlier or equal to the tariff minimum requirement
- The AESO may make exceptions to the criteria as needed, subject to the tariff minimum requirement

Section 3.7(6)

"The ISO must include the critical information of a specific connection project in the ISO's forecast, transmission system plans and engineering connection assessments when the related System Access Service Agreement for Rate DTS or Rate STS becomes effective…"

4. Project inclusion criteria



5. Feeder level flows

Current Tariff	2018 ISO Tariff
Tariff was silent but practice for Rate STS and Rate DTS contract levels were based on substation-level flows	Rate STS and Rate DTS contract levels must align with actual feeder-level flows

Why make this change?

To align with the definition of “transmission facility”, address fairness concerns, and minimize the erosion of DTS MW.

5. Feeder level flows

- The AESO is adjusting metering levels in order to:
  - Better align metering with the legislated definition of “transmission facility”
  - Address fairness concerns that exist between distribution-connected and transmission-connected generation, as a result of the existing metering practice
- Requested Rate STS and Rate DTS contract levels in the SASR must be calculated with feeder-level flows
  - Rate STS: sum of feeder flows into the bus where each feeder is calculated as follows: MC – min. feeder load
  - Rate DTS: coincident sum of feeder flows out of the bus

Supply-related allocation

- The ISO tariff requires the AESO to deem costs allocated to a market participant under Rate DTS to be **demand-related**, and under Rate STS to be **supply-related**
- Required in order to determine “maximum local investment”
- The calculation of the allocation ratio formula (also referred to as the substation fraction formula)

	Demand-Related	Supply-Related
Allocation Ratio	$= \frac{Rate\ DTS\ (MW)}{[Rate\ DTS\ (MW) + Rate\ STS\ (MW)]}$	$= \frac{Rate\ STS\ (MW)}{[Rate\ DTS\ (MW) + Rate\ STS\ (MW)]}$

Supply-related allocation

- The use of the allocation ratio formula to determine demand-related and supply-related amounts is not a new practice
  - The AESO has applied this mechanism at all substations where there is Rate DTS and Rate STS
- Grandfathering does not apply to the allocation ratio formula (or resulting allocation ratio/substation fraction)
  - However, the adjusted metering practice (grandfathering applicable) could impact the quantity of Rate STS contract capacity, and therefore impact the allocation ratio
- DFOs have discretion to limit contribution amounts that flow through to end-use customers

History of allocation ratio formula

- The AESO has utilized the allocation ratio formula since a 2005 Alberta Energy and Utilities Board Order decision, where it was determined that use of facilities would be determined by relative contract amounts.
  - The use of the allocation ratio formula to determine demand-related and supply-related amounts is not a new practice and the AESO has applied this mechanism at all substations where there is Rate DTS and Rate STS
  - *The substation fraction formula is a long-established mechanism used by the AESO to allocate the costs of interconnection facilities that may have joint use [Decision 22942-D02-2019, para 742].*
- Grandfathering does not apply to the allocation ratio formula (or resulting allocation ratio/substation fraction)
  - However, the adjusted metering practice (grandfathering applicable) could impact the quantity of Rate STS contract capacity, and therefore impact the allocation ratio

Allocation ratio formula
AUC Decision 22942-D02-2019

- The Commission concluded that the allocation ratio formula is not unreasonable in the absence of any other information
  - No evidence was provided that a different mechanism would improve the allocation of costs for joint use

    . . . The Commission notes that no parties in the current proceeding have provided any evidence suggesting that as mechanism other than the substation fraction formula would be an improvement for this purpose. [para 742]
- DFOs have discretion to limit contribution amounts that flow through to end-use customers:

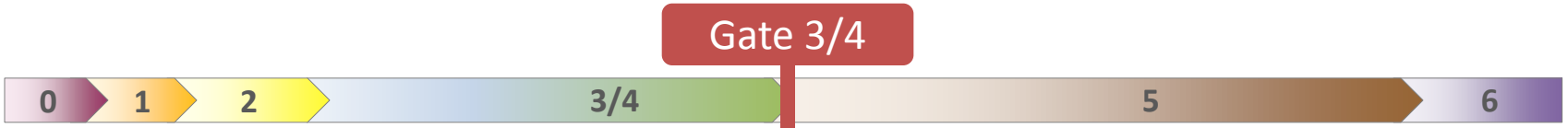
  . . . Accordingly, the Commission considers that DFOs have discretion to limit the amount of AESO contributions flowed through to DCGs through the application of the substation fraction to future DFO substation upgrade projects by retaining some or all of this cost [para 824]

Grandfathering – Feeder level flows

- Projects are grandfathered at the time the 2018 ISO Tariff becomes effective if:
  - Obtained power plant approval from the AUC, and
  - Construction of the power plant has started

- All other projects must comply with the 2018 ISO Tariff when it becomes effective.

Grandfathering – In-flight Projects



New Tariff

SAS	• Execute 60 days after issuing the FS (60 days after tariff effective if already issued) • Effective upon execution
STS	• Calculate using feeder level flows (may require a change proposal and CCD recalculation if this changes the STS)
GUOC	• Pay 30 days after the SAS is effective • Based on generator MC • Paid by Generator Facility Owner

Old Tariff

SAS	• Execute 30 days before energization • Effective on date of capacity increase
STS	• Calculate using substation level flows (only grandfathered if generator application is approved and construction has started)
GUOC	• Paid 30 days before SAS is effective • Based on STS amount • Paid by SAS contract holder

Overview of industry feedback and proposed improvements

Key Takeaways from Nov 2018 Session

1. Lack of Generator Facility Owner (GFO) involvement in the project leads to misinformation and unnecessary project delays
   - DFO is the Market Participant and acts as “middleman”
2. Cost from the Construction Contribution Decision (CCD) is important information which helps determine project viability but is being provided too late in the process
   - CCDs are done at the end of stage 2
3. Timeline to complete a BTF project is unknown because currently there are no target timelines to measure
   - No target timelines and therefore no metrics

Developing a plan

- Following the November 2018 session, we evaluated the feedback from industry and combined it with an internal review to develop the following recommendations
- We look forward to hearing your thoughts and feedback on these proposed changes to the BTF Process

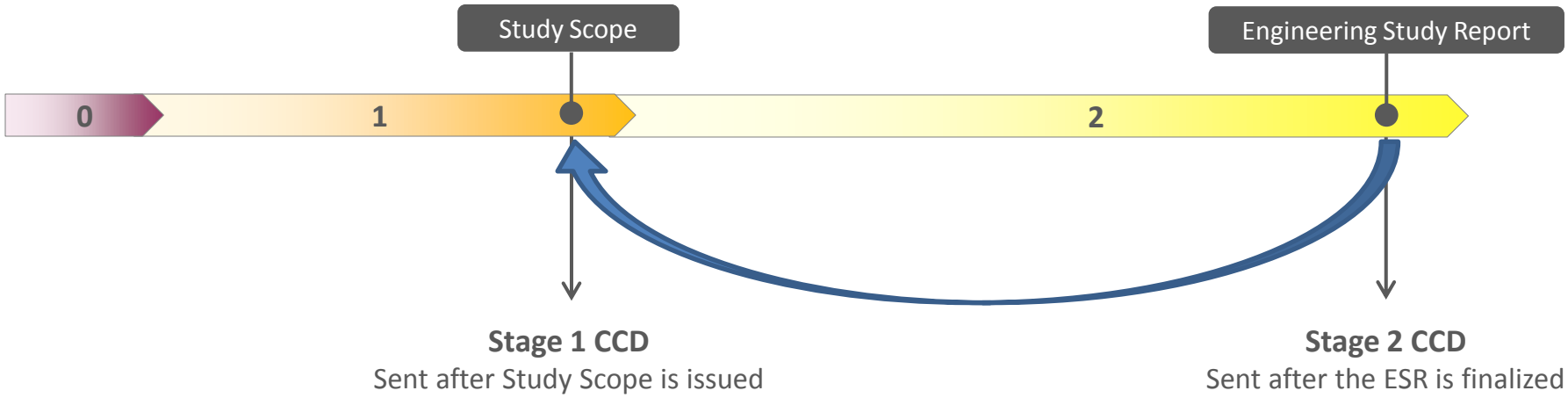
Proposed changes to the BTF Process

1. Formalize the role of the Generator Facility Owner to improve timelines and efficiency

Documents with GFO involvement	GFO Role
SASR	Provide input to DFO
Kick-off Meeting	Attendee
Project (BTF) Plan	Review and sign-off
Study Scope	Review
Engineering Study Report	Review (optional)
Functional Specification	Review and provide input
Single-line Diagrams (SLDs)	Provide SLDs to DFO
PDUP	Provide input to DFO
GUOC Amount	Acknowledge
GUOC Invoice	Provide payment
Commissioning Certificate Request	Prepare and submit

Proposed changes to the BTF Process

2. Prepare Construction Contribution Decision (CCD) in Stage 1 to provide earlier visibility of cost



Proposed changes to the BTF Process

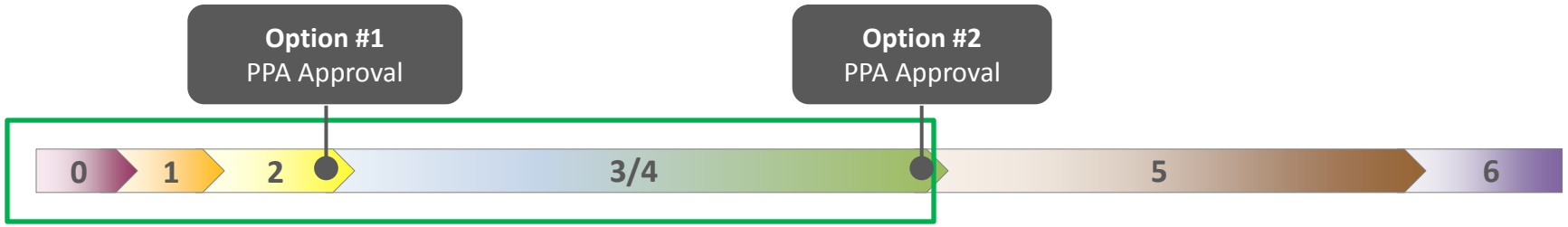
3. Introduce target and maximum timelines for Stage 1 and 2. Stages 3/4, 5, and 6 will have Project Schedule Alignment.

Stage	Target Timeline (Weeks)	Maximum Timeline (Weeks)
1	6	12
2	12	24
3/4, 5, 6	• Project Schedule Alignment is prepared at beginning of Stage 3/4 and Stage 5. • Can be kept up to date throughout the project. • Change Proposal + Project Schedule Alignment is required for ISD changes.	

Proposed changes to the BTF Process

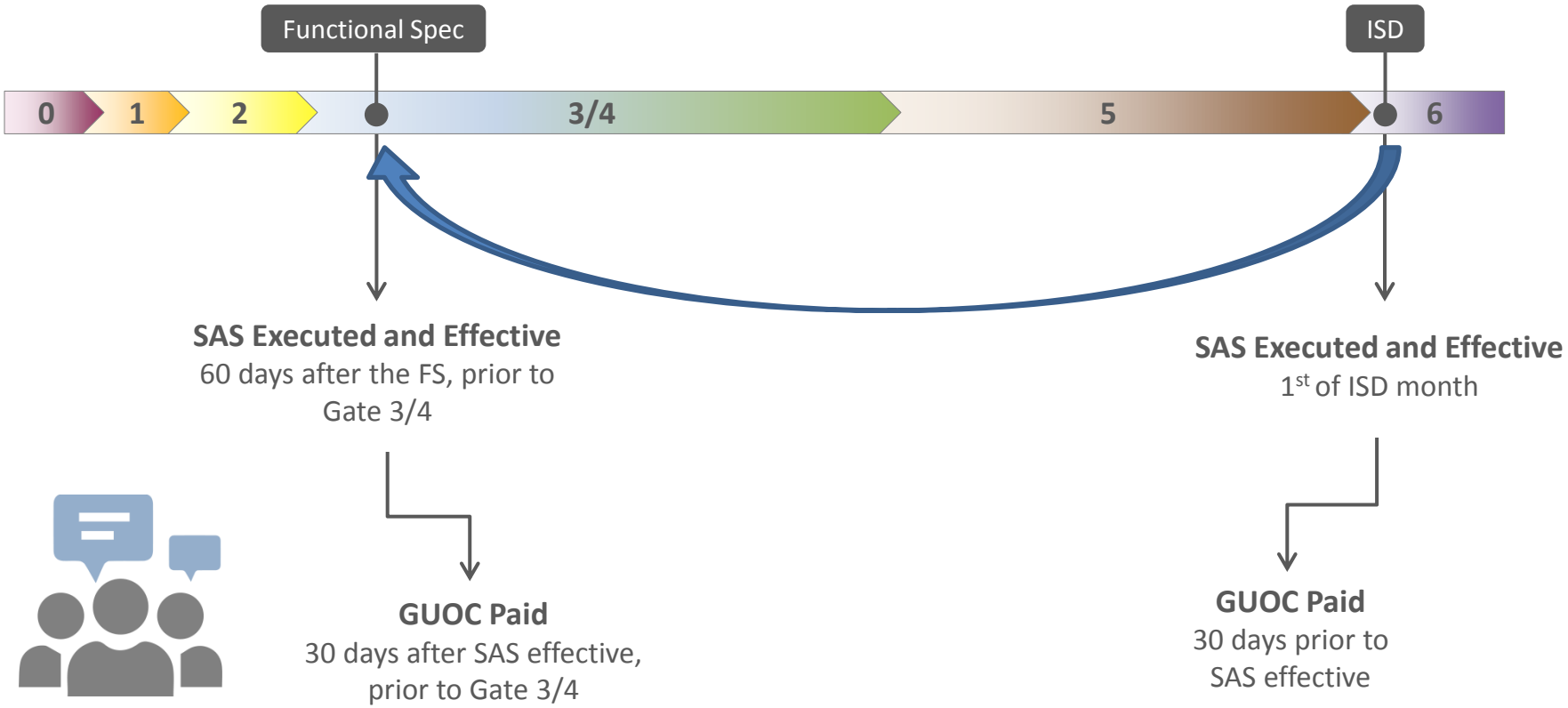
4. Power Plant Application (PPA) approval timing
   - Option #1: At the end of Stage 2

     OR
   - Option #2: At the end of Stage 3/4



Proposed changes to the BTF Process

5. SAS Agreement is signed within 60 days of the Functional Specification being issued



Creating additional efficiencies in the BTF process

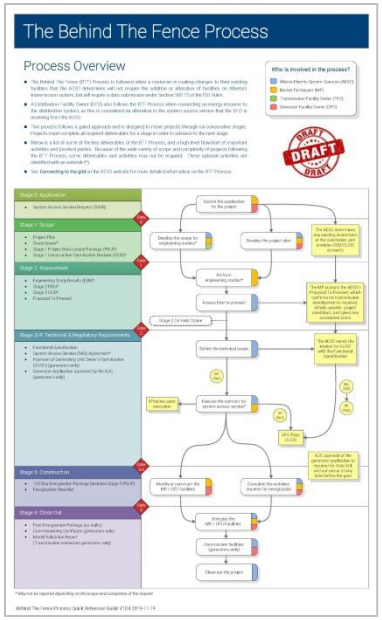
6. Additional efficiencies in the BTF process
   - What barriers exist in the BTF process?
   - Where can we create additional efficiencies?

Examples:

- Clarifying energization requirements for BTF projects
- BTF Plan → Project Plan

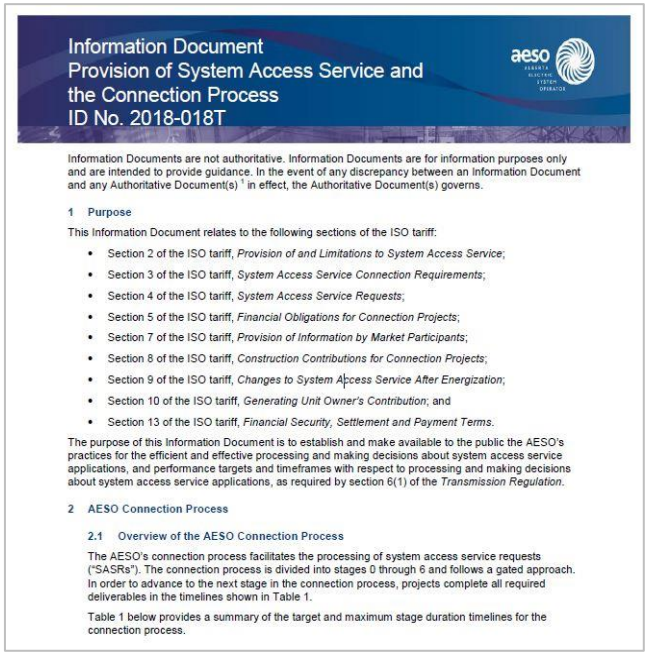
BTF Quick Reference Guide (QRG)

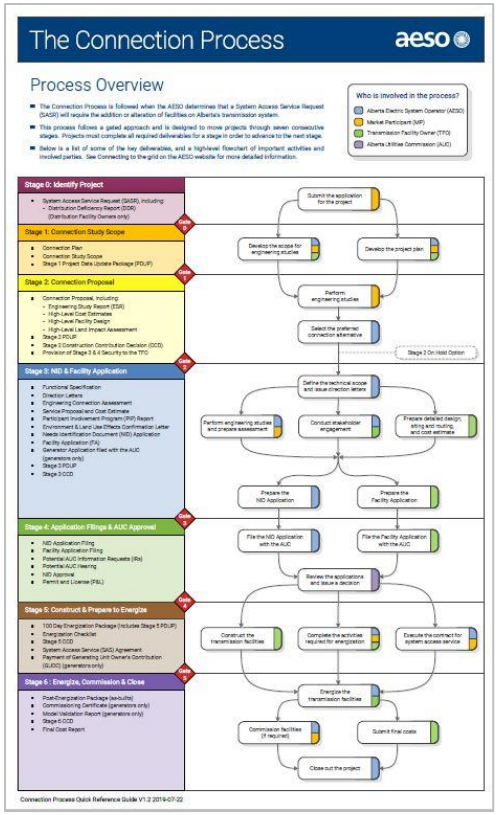
- The draft QRG summarizes the process changes that have been discussed today
  - The final QRG will be published when the Tariff becomes effective; we will share the update with stakeholders at the next information session (Q1 2020)
- Use the draft QRG as you rotate through each station



Connection Process important reference information

- Connecting to the Grid webpage: www.aeso.ca/grid/connecting-to-the-grid/
- Connection Process Quick Reference Guide
- ID #2018-018T *Provision of System Access Service and the Connection Process*
- AESO 101 sessions
- Transmission Capability Report





Breakout sessions: World Café overview

- A **World Café** is a meeting style where participants gather in small groups in a ‘café style’ atmosphere to discuss questions based on a central theme
- Today’s session has six stations
- Each station has a theme/question
- Each round will be approx. 12 minutes
- Rotate through to participate on each topic
- Participant handbooks have also been provided for written feedback

Breakout sessions: World Café overview

- Participants discuss the question presented to them at each station
  - Six topics to provide feedback on:
    - Increased GFO involvement
    - Construction Contribution Decision (CCD) timing
    - Determining target and maximum timelines
    - Power Plant Application (PPA) approval timing
    - System Access Service (SAS) agreement execution timing
    - Creating additional efficiencies in the BTF process

- A signal will be made at the end of each round to prompt a move to the next topic.

Break

- Light refreshments available – please return in 15 minutes

Next steps

- Thank you all for your participation and feedback!
- The AESO will review the feedback and evaluate process adjustments
- We will provide a summary of today's topic themes in January 2020
- We anticipate the BTF process changes to be rolled out at the same time as the Connection Process changes resulting from the Amended 2018 ISO Tariff (early 2020)
- Effective date of the BTF process changes TBD

Questions?