

Preliminary Assessment Study Scope

P[0000] [Project Name]

[Market Participant Name]

Date: [Month DD, YYYY]

Version: [e.g., V1D1]

Classification: Choose an item.

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Attachments

Study Assumptions in the [Specific Cluster Name]

1 Introduction

This Study Scope provides an overview of the engineering studies to be completed by Alberta Electric System Operator (AESO) to assess the impact of the Project (as defined in section 1.1) on the performance of the Alberta interconnected electric system (AIES).

1.1 Project Overview

Project overview is provided in Table 1-1.

Table 1-1: Project Overview

Market Participant	Type of Project	In-service Date (ISD)
[Market Participant Legal Name]	[BTF/Connection/Contract Change]	[Month Day, Year]

Load and generation components of the Project are listed in Table 1-2.

Table 1-2: Project Load and Generation Details

Project Component		Description
Load	Existing Rate DTS, <i>Demand Transmission Service</i> , contract capacity	[X] MW at [Substation Name and No.] <i>or</i> No existing contract
	Requested Rate DTS	<i>For Projects where there is an existing Rate DTS contract capacity:</i> An [increase/decrease] of [X] MW at [Substation Name and No.] to [X] MW <i>For Projects that include a request for a new Rate DTS contract capacity:</i> [X] MW
	Type	[Use these load types: residential, commercial, farm, industrial (except oilsands), oilsands; station service]
	Motors (number and size)	[e.g., 3 x 6,600 hp motors]
	Power factor	[Not applicable or 0.9 pf]
	Future load expansion plans	[Yes/No]; [if “Yes”, add details, including future Rate DTS, [Month Year]
Generation	Generation type	[Wind, solar, combined cycle]
	Existing Rate STS, <i>Supply Transmission Service</i> , contract capacity	[X] MW

Project Component		Description
	Requested Rate STS	<p><i>For Projects with an existing Rate STS contract capacity:</i> An [increase/decrease] of [X] MW at [Substation Name and No.] to [X] MW</p> <p><i>For Projects that include a request for a new Rate DTS contract capacity:</i> [X] MW</p>
	Number and size of generating units	[e.g., 50 wind turbines at 2.4 MW each]
	Maximum authorized real power (MARP)	[X] MW [include seasonal ratings as appropriate]
	Maximum capability (MC)	[X] MW [include seasonal ratings as appropriate]
	Reactive power capability	[X] MVA _r ([X] pf absorbing)
		[X] MVA _r ([X] pf producing)
	Future generation expansion plans	[Yes/No]; [if "Yes", add details, including future Rate STS, [Month Year]]

Note:

MARP and MC are defined in the AESO's *Consolidated Authoritative Document Glossary*, which can be found on the AESO's website.

2 Connection Alternative(s)

The following [alternative or alternatives] will be studied:

Describe each alternative under a separate subheading (e.g. Alternative 1 is section 2.1 etc.). Add or delete the example headings below as necessary. Include all considered, whether or not they will be studied in Stage 1 (preliminary assessment). Section 2.2 will provide the list of selected alternatives to be studied with rationale behind it. If an alternative is rejected, include the rationale why it is being rejected. For BTF project, only one alternative will be proposed with respect to the stage 0 PDUP.

2.1 Alternative 1 – [Brief description of alternative]

Use the words “Add” or “modify” or “upgrade” to describe the developments. Include details on number of breakers, etc.

This alternative included the following developments:

- [e.g., Add...]
- [e.g., Modify...]
- [e.g., Upgrade...]
- Add or modify associated equipment as required for the above transmission developments.

The proposed connection configuration is shown in Figure 2-1.

The example figure on the following page is from P1704 and clearly shows the proposed development for the connection alternative and how it connects to the AIES. It also shows which portion is the responsibility of the TFO and which portion is the responsibility of the MP. Request similar SLDs from maps@aeso.ca

Figure 2-1: Connection Alternative 1

2.2 Connection Alternatives Selected for Further Studies

Alternative [alternative(s) number] are selected for further studies. *If required, provide a rational.*

2.3 Connection Alternatives Not Selected for Further Studies

Alternative [alternative(s) number] are not selected for further studies. *Provide a rational for rejecting them.*

3 Study Scenarios

Connection study scenarios are provided in Table 3-1.

Table 3-1: Connection Study Scenarios

Scenario No.	Year/Season	System Generation Dispatch Conditions	Scenario Name	Project Load (MW)	Project Generation (MW)
Pre-Project					
1	[e.g., 2016 Summer Light (SL)]	High Coal (HC)	[e.g., 2016 SL HC Pre-Project]	0	0
2				0	0
Post-Project					
3	[e.g., 2016 SL]	HC	[e.g., 2016 SL HC Post-Project]	100	300
4					
Post-Project with [Name of projects in sub-cluster] in service					
5					
6					
Post-Project in [Cluster name i.e. NW] Cluster					
7					
8					

The Facility will be dispatched to [X] MW in all post-Project scenarios. *Modify this if the project also requested for DTS. Example: The facility will be dispatched to [X] MW and [Y] MW in all post-project STS and DTS scenarios, respectively.*

Power flow studies will be performed to identify thermal and voltage criteria violations as per the Reliability Criteria. All transmission facilities [69 kV and above, OR, 69 kV and 144/138 kV, OR specify other as applicable], within the Cluster and the transmission lines connecting [this/these] [planning area or planning areas] to neighbouring planning areas will be studied and monitored under Category A condition.

For generation only and battery projects:

Selected contingencies within the Cluster may also be studied under Category B condition to assess the impact of the Project on the performance of the AIES. Below is the list of key contingencies in the Cluster which will be studied under N-1 condition.

[List of main contingencies].

For ISD projects:

Power flow studies will be also performed for all Category B [and WAT, EATL if applicable] conditions in the Cluster to assess the impact of the Project on the performance of the AIES. [Unit Name and No.] is determined to be the critical generator and will be modelled as being offline to simulate the N-G condition in the DTS scenarios.

Study Assumptions in the [Specific Cluster Name]

Preliminary Assessment Study Scope Attachment

Date: [Month DD, YYYY]

Version: Final

Classification: Public

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Informational Purposes Only: The materials and information provided in this document are intended for informational purposes only and to be referred along with the Connection Study Scopes in the [specific cluster].

1 Existing System Overview

The [specific cluster] consists of the AESO [planning areas] of [AESO Planning Area Name (Area No.)], including the tie lines connecting these planning areas to the rest of the AIES.

2 Study Assumptions

2.1 System Project Assumptions

The pre-Project and post-Project preliminary cluster assessment will not include any system transmission projects because there are no planned system transmission developments in the [specific cluster] that are expected to be in service before the scheduled Project ISD.

If there are no projects, remove the table that follows.

Or

Table 2-1 lists the system transmission projects that will be included in the studies.

The information for the “AUC NID Decision No.” column can be requested from Regulatory Support.

Table 2-1: Planned System Transmission Projects to be Included in the Studies

AESO Project No.	Project Name/Description	Scheduled ISD	AUC NID Decision No.

2.2 Other Connection Projects in the Preliminary Cluster Assessment

Consider removing this section if there is no any other connection project in the area.

If there are connection projects to be included, all the connection projects in the cluster should be included in Table 2-2:

Table 2-2 summarizes the connection projects in the [specific cluster], which will be modelled in the preliminary cluster assessment.

Table 2-2: Other Connection Projects in the Preliminary Cluster Assessment

AESO Project No.	AESO Project Name	AESO Planning Area No.	Generation (MW)	Load (MW)	Scheduled ISD

2.3 Load Assumptions

The load forecast to be used for the studies is shown in Table 2-3 and is a forecast for the AESO [specific cluster] based on the [e.g., AESO's 2023 Long-term Outlook (2023 LTO)].

Table 2-3: Forecast Load in [specific cluster]

AESO Planning Region Name	Forecast Peak Load by Year/Season (MW)		
	[YYYY] [SP/SL/WP] [EC/HC]	[YYYY] [SP/SL/WP] [EC/HC]	[YYYY] [SP/SL/WP] [EC/HC]
[specific cluster]			
AIES			

2.4 Generation Assumptions

Describe the generation assumptions and the AESO forecast applied (e.g., 2023 LTO). Present existing and future units for consideration in the studies and the dispatch level of each. Describe the notable features of the local generators, as required. Below is an example of the write up:

The generation forecast to be used for the studies is based on the [2023] LTO with modifications to incorporate the latest forecast intelligence. The generation assumptions for the studies will assume [describe your assumptions which is provided in CSS].

The existing generation (excluding wind and solar) dispatch conditions for the study scenarios are described in Table 2-4.

The Facility Names included in the table below should match the names on the AESO's current supply and demand page.

Table 2-4: Existing Generation (excluding Wind and Solar) Dispatch Conditions

Facility Name	Unit No.	MC (MW)	AESO Planning Area No.	Unit Net Generation ^a (MW) by Scenario		
				[YYYY] [SP/SL/WP] [EC/HC] ^b	[YYYY] [SP/SL/WP] [EC/HC] ^c	[YYYY] [SP/SL/WP] [EC/HC] ^d

Notes:

^a "Unit Net Generation" refers to gross generating unit output (MW) less unit service load.

- ^b “[SP/SL/WP] [EC/HC]” refers to [provide detailed scenario name (i.e. summer peak high coal)].
- ^c “[SP/SL/WP] [EC/HC]” refers to [provide detailed scenario name (i.e. summer light high coal)].
- ^b “[SP/SL/WP] [EC/HC]” refers to [provide detailed scenario name (i.e. winter peak high coal)].

If wind and solar generation in the province needs to be described in detail, include the following information. If the wind and solar generation dispatch will not impact the results (e.g. for a project in the Fort McMurray area), this section can be removed.

Using this value, the wind and solar generation facilities will be dispatched to yield the credible worst-case generation dispatches for the [specific cluster]. Pre- and post-Project dispatch levels for the existing and planned¹ wind and solar generation facilities are shown in Table 2-5 and Table 2-6.

Table 2-5: Dispatch Conditions for Existing and Planned Wind Generation Facilities

Facility Name and Code	MC (MW)	AESO Planning Area No.	Unit Net Generation ^a (MW) by Scenario		
			[YYYY] [SP/SL/WP] [EC/HC] ^b	[YYYY] [SP/SL/WP] [EC/HC] ^c	[YYYY] [SP/SL/WP] [EC/HC] ^d

- Note:**
- ^a “Unit Net Generation” refers to gross generating unit output (MW) less unit service load.
 - ^b “[SP/SL/WP] [EC/HC]” refers to [provide detailed scenario name (i.e. summer peak high coal)].
 - ^c “[SP/SL/WP] [EC/HC]” refers to [provide detailed scenario name (i.e. summer light high coal)].
 - ^d “[SP/SL/WP] [EC/HC]” refers to [provide detailed scenario name (i.e. winter peak high coal)].

Table 2-6: Dispatch Conditions for Existing and Planned Solar Generation Facilities

Facility Name and Code	MC (MW)	AESO Planning Area No.	Unit Net Generation ^a (MW) by Scenario		
			[YYYY] [SP/SL/WP] [EC/HC] ^b	[YYYY] [SP/SL/WP] [EC/HC] ^c	[YYYY] [SP/SL/WP] [EC/HC] ^d

- Note:**
- ^a “Unit Net Generation” refers to gross generating unit output (MW) less unit service load.

¹ Planned generation refers to the projects which met have met the AESO’s project inclusion criteria.

^b “[SP/SL/WP] [EC/HC]” refers to [provide detailed scenario name (i.e. summer peak high coal)].

^c “[SP/SL/WP] [EC/HC]” refers to [provide detailed scenario name (i.e. summer light high coal)].

^d “[SP/SL/WP] [EC/HC]” refers to [provide detailed scenario name (i.e. winter peak high coal)].

2.5 Inter-tie Flow Assumptions

If the intertie flows will not impact the study results, use the text shown below and delete Table 2-7.

The Alberta-British Columbia (AB-BC), Alberta-Saskatchewan (AB-SK), and Alberta-Montana (MATL) intertie points are deemed to be too far away from the [specific cluster] to have any material impact on the connection assessment. Therefore, intertie flow values shall be set to the AESO planning base case values and will not be adjusted for the studies.

If the intertie flows do impact the study results, use the text shown below and include Table 2-7.

The intertie flow assumptions for the Alberta-British Columbia (AB-BC), Alberta-Saskatchewan (AB-SK), and Alberta-Montana (MATL) interties are shown in Table 2-7.

Table 2-7: Intertie Flows for all Study Scenarios

Scenario Name	Import (-) / Export (+) (MW) by Intertie		
	AB-BC	AB-SK	MATL
[Study Scenarios considered in the CSS, i.e. “[SP/SL/WP] [EC/HC]”]			

2.6 HVDC Power Order Assumptions

If the HVDC power order will not impact the study results, use the text shown below.

The Western Alberta Transmission Line (WATL) and the Eastern Alberta Transmission Line (EATL) are high-voltage direct current (HVDC) transmission lines. WATL and EATL are not expected to have a material impact on the connection assessment. Therefore, the HVDC assumptions shall be the same as in the AESO planning base cases and will not be adjusted for the studies.

If the HVDC power order does impact the study results, use the text shown below.

The Western Alberta Transmission Line (WATL) and the Eastern Alberta Transmission Line (EATL) are high-voltage direct current (HVDC) transmission lines. The HVDC power order assumptions for the studies will be set to minimize losses for the pre-Project and post-Project study scenarios.