

DISTRIBUTED ENERGY RESOURCE INTERCONNECTION PROCESS FACT SHEET FOR DISTRIBUTED GENERATION AND LARGE MICRO-GENERATION

Purpose

This fact sheet outlines the steps required for you to undertake an interconnection to the distribution system for your distributed generation or large (>150 kW) micro-generation project. It outlines the steps you need to take, how long each step will typically require and the fees associated with each step.

Getting Started

How can I contact the FortisAlberta generation team?

Send an email to our team at generation@fortisalberta.com.

Or contact a Key Account Manager directly with any questions regarding FortisAlberta Distribution Connected Generation.

Monique Soboren 403-514-4102 Monique.Soboren@FortisAlberta.com

Leandro Tomei 403-514-4999 Leandro.Tomei@FortisAlberta.com

Jack Wojciechowski 403-514-4028 Jack.Wojciechowski@FortisAlberta.com

What are Steps and What is Involved?

Interconnection to the distribution system is a six phase process that starts with FortisAlberta working with you to scope your project, and ends with the interconnection of your generator to the grid. The figure below outlines the six steps and Table 1 provides the basic facts you need to know about the interconnection process.

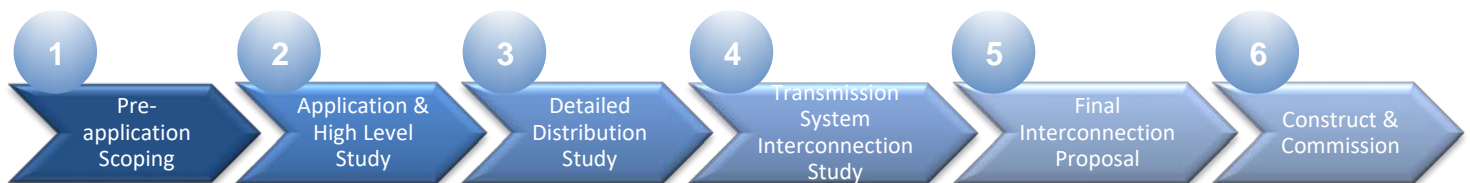


Table 1. Proposed Interconnection Studies and Fees

Milestone	Purpose	Deliverable	Timelines	Costs
Pre-application scoping	Obtain information about interconnection process, available capacity and queue dependencies.	No study is required Meeting format	1-4 hours	\$500 (up to 5 sites) Plus \$250 per additional site
Application and High-Level Study (HLS)	Obtain a high level technical project review and initial assessment of interconnection costs to the distribution system.	High Level Distribution Study	2-4 weeks	\$4,000 per site
AltaLink High Level Transmission Study	Obtain a high level technical project review and initial assessment of interconnection costs to the transmission system.	High Level Transmission Study	4 weeks	\$3,000 per site
Detailed Distribution Study (DDS)	Obtain constraints, infrastructure upgrades and detailed costs required for interconnection to the distribution system.	Detailed Distribution Study	2-4 months	\$10,000 per site
FortisAlberta Coordination of Transmission System Interconnection Study	This is FortisAlberta’s fee to coordinate the transmission studies and AESO connection processes. The TFO will require a separate fee to complete the applicable studies.	If required: System Interconnection Studies. For projects that qualify for AESO BTF or Connection processes.	6-14 months	\$10,000 per site

AltaLink Transmission System Interconnection Study (SIS)	Obtain constraints, infrastructure upgrades and costs required for interconnection to the transmission system.	If required: System Interconnection Studies. For projects that qualify for AESO BTF or Connection processes.	6-14 months	\$30,000* per site
Interconnection Agreement and Operating Agreement	Obtain final cost and scope of work for interconnection to the grid.	Interconnection Agreement and Operating Agreement Final quote package	Follows completion of the SIS and the transmission cost estimate from the TFO.	\$4,500

Interconnection Process Step by Step

Please visit our website at FortisAlberta.com *Customer Service/Get Connected* to view detailed information on how to get connected.

Once you are ready to begin your interconnection project you may submit an application form to generation@fortisalberta.com.

Now that you know the basics, we want to provide you with the answers to some common questions.

What other stakeholders are involved in the interconnection process and how do I work with them?

The Key Accounts team will be with you every step of the way to coordinate your project from beginning to end. FortisAlberta’s engineering teams will provide the High Level Study and Detailed Distribution Study and be there to answer any technical questions related to your project.

AltaLink is the transmission facilities operator that overlaps our service area. We work closely with AltaLink on your behalf to coordinate the required transmission studies. The Alberta Electric System Operator (AESO) may be involved if your project meets their Behind the Fence (BTF) criteria outlined on <https://www.aeso.ca/>. The AESO has its own connection process and queueing practices for generation projects. If you prefer, we can work on your behalf to complete the AESO connection process requirements. An application is also required to the Alberta Utility Commission (AUC) and their requirements are on AUC.ab.ca.

How does this align with the queueing practices?

FortisAlberta and AESO each apply a queuing practice and the steps outlined in each of them need to be followed to remain in the queue. FortisAlberta's queue document is in the Distributed Generation document library on FortisAlberta.com along with a comprehensive process document. AESO's stages are outlined on <https://www.aeso.ca/>.

Pre-Application Scoping

You may submit an application a Pre-Application Scoping Request to FortisAlberta. This is the first step in the generator interconnection process that will help you learn where the closest distribution lines are to your project and if it's feasible to connect your project to the grid at that location.

This is an optional step in the interconnection process however, it is recommended to help you understand the overall process, who is involved and most importantly, where you will find a location to successfully connect your project. A FortisAlberta Key Account Manager will be happy to assist you in determining whether or not you should skip this step.



What you will need to provide to FortisAlberta:

There is a pre-application scoping application form available on FortisAlberta.com. The land location of your project and the anticipated maximum generation are the key requirements for each project location being investigated.

What you can expect to receive during Pre-Application Scoping:

The generation team will explain the overall process and answer any questions that you may have on FortisAlberta's process as well as the AESO process and transmission system involvement beyond the distribution system.

The generation team will also discuss your site locations with you and give a general idea of the existing activity in your area of interest to help determine available capacity at the distribution and transmission level. This will help you determine if your location is feasible and inform your decision whether or not to proceed to a High Level Study.

Application and High Level Study (HLS)

After the Pre-Application Scoping is completed, you may submit a formal application for grid interconnection and a request to complete the High Level Study (HLS).

The HLS is the first step in reviewing the high-level interconnection requirements for your proposed project. The study will provide you with a better idea of the technical requirements and potential distribution system upgrade costs of your project.



What you will need to provide to FortisAlberta:

One application is needed for each project location along with payment of the HLS fee. This application is found on FortisAlberta.com and the first tab of the application is what is needed for the HLS. If desired, a discussion with our Distribution Planning Engineers can be requested so that they can understand your project well before doing the study.

What you can expect to receive during the High Level Study:

The HLS will provide you with the maximum generation at your location and any upgrades that may be required to the distribution system. An order of magnitude cost is also provided for these upgrades to give you an early idea of your project's viability. Any power factor restrictions are also explained to keep the system voltage within allowable limits defined by the Canadian Standards Association.

What the High Level Study will not provide you:

The transmission requirements are not included in this study. A transmission HLS may be requested on your behalf from the transmission facilities operator (TFO) to provide you with a general idea of the transmission feasibility and cost at this stage. The generation team will coordinate this application to the TFO on your behalf. If the TFO in your project area is AltaLink, there is an additional fee for the transmission HLS (refer to Table 1).

Detailed Distribution Study

Once you have received your HLS, you have reached the first go/no-go point where you may choose to tweak your project, submit a new application with a revised scope or continue forward with a Detailed Distribution Study.

The Detailed Distribution Study evaluates the technical and site-specific requirements to connect your generator project. This study will provide you with the infrastructure upgrades that may be required for the distribution system to accommodate your project safely and reliably. You will also receive a detailed cost and scope related to any required distribution system upgrades. This is

your second go/no-go point where the distribution system upgrades may preclude your project or require you to re-scope your project.



What you will need to provide to FortisAlberta:

Once the HLS study letter has been signed and accepted, an invoice for the detailed distribution study will be sent. Once the payment and further technical details outlined in the second tab of the application have been provided, the detailed distribution study will begin. This includes a protection study to be provided to FortisAlberta; these requirements are on FortisAlberta.com.

What will the Detailed Distribution Study Report provide?

The Detailed Distribution Study will include approval for the technical interconnection of your project as well as a quote for the distribution portion of the DG interconnection to the system.

Transmission System Interconnection Study

The Transmission System Interconnection Study is kicked off concurrent with the Detailed Distribution Study.



What you can expect to receive during the Transmission Interconnection Study:

The TFO will provide a power flow study. A protection study will be required for the transmission system and can be completed by the TFO or a consultant of your choice.

What other additional studies will be required to complete at this time:

The functional specification from AESO will be worked on during this time and it is a compilation of the FortisAlberta and TFO technical requirements and studies.

Final Interconnection Proposal

Once the transmission study is complete, FortisAlberta will provide you with a Final Interconnection Proposal that outlines the final cost for distribution and transmission infrastructure upgrades that are required to interconnect your project. The proposal will also specify the final technical requirements. At this stage, FortisAlberta Key Account Managers will work with you to finalize your Interconnection Agreement and Operating Agreements.



What will the Final Interconnection Proposal provide?

A quotation letter package (detailed distribution interconnection cost, pre-paid operating and maintenance cost, and the transmission proposal to provide service costs), which includes;

- Quote Letter
- Detailed study scope document
- Estimate print
- Pre-energizing checklist
- Transmission proposal to provide service
- Schedule A with the applicable rate class for the load service

Construct and Commission

You may request to defer the construction for a maximum of one year after the Final Interconnection Proposal has been accepted and signed. If construction is deferred, FortisAlberta reserves the right to re-quote the detailed distribution costs. The cost of re-quoting shall be included in the new quote package. If there are changes in FortisAlberta standards and practices, or other industry standards during this period, the proponent shall comply with these new requirements.



Your Key Account Manager will work through a number of pre-commissioning and interconnection requirements including completion of the Interconnection Agreement, Operating Agreement, pre- and post-energization tasks and various other requirements related to your generator and/or load service.