

BUSINESS PRACTICE FOR LOAD INTERCONNECTION QUEUE MANAGEMENT

10 November 2014

Version 1.1

**BC Hydro Transmission & Distribution
Asset Investment Management
Load Interconnections**

Table of Contents

1	The Purpose of the Load Interconnection Queue	3
1.1	Study Order	3
1.2	Study Base Case & Scenarios	3
1.3	Cost Allocation of Basic Transmission Extension and System Reinforcement	3
1.4	Reserving System Capacity and Energy	4
2	The Principles of Load Interconnection Queue Management.....	4
3	The Business Practices of Load Interconnection Queue Management	5
3.1	Overview of Load Interconnection Process	5
3.2	Entering the Load Interconnection Queue	5
3.3	Progressing through the Load Interconnection Process	6
3.4	Summary of Customer Obligations to Remain in the Load Interconnection Queue	8
3.5	Withdrawing the Customer's Request from the Load Interconnection Queue.....	9
3.6	Changes Requested by the Customer during Study Stages.....	9
3.7	Changes during Project Implementation	10
3.8	Cluster Studies	10
4	Tariffs	10
4.1	Tariff Supplements No.5 and No.6	10

1 The Purpose of the Load Interconnection Queue

BC Hydro enters requests from new transmission voltage customers into the load interconnection queue based on the order in which requests are deemed accepted¹. BC Hydro manages a load interconnection queue to determine the order for initiating load interconnection studies and subsequent cost allocation for facilities that are necessary to accommodate accepted load interconnection requests. The order of load interconnection requests in the queue is also used to set the base case for the System Impact Studies (SIS) and determine alternative scenarios to study.

1.1 Study Order

The queue is used to determine the order of initiating SIS for accepted load interconnection requests. BC Hydro initiates a study in the order of the queue. The duration of study varies depending on the complexity of customer requests, the number of scenarios to study, the number of existing studies underway, and the system specific issues. The results of studies are usually presented to the requesting customers immediately upon completion, rather than in queue order. It is therefore possible for a customer later in the queue to receive the study result earlier than an earlier queued customer.

1.2 Study Base Case & Scenarios

The base case for an interconnection study is the expected configuration of the system at the time of interconnection including any prior queued interconnection requests. When necessary, BC Hydro uses its judgement to study multiple scenarios to determine the impacts of customer requests that are earlier in the queue. In some cases, BC Hydro may use its judgment to “cluster” the expected impacts of multiple changes to the system, including BC Hydro planned upgrades and/or multiple customer requests. The intent is to reduce study costs and to efficiently manage the limited study resources and optimize the planned upgrades. Although BC Hydro may “cluster” multiple customer requests for study purpose, a separate study report is prepared for each customer to maintain customer project confidentiality.

1.3 Cost Allocation of Basic Transmission Extension and System Reinforcement

The customer’s request may trigger system upgrades such as new facilities or facilities upgrade to the BC Hydro system. They are defined as Basic Transmission Extension (BTE) and System Reinforcement (SR) in Tariff Supplement No.6.

The SR cost is allocated based on the order of accepted interconnection requests. The SR cost could be a payment, security or a combination of both. The SR cost is allocated to the first customer that triggers it. If the first customer made a payment toward the SR cost, and if subsequent customers connecting within five

¹ See Section 3.2 for the requirements for a customer request to be deemed accepted.

years benefit from the same reinforcement, Tariff Supplement No. 6 allows for some costs to be re-allocated to the new customer to reduce the original customer's payment. For the security portion of SR cost, the first customer's security will be released faster, if subsequent customers connecting within five years benefit from the same reinforcement.

In rare cases, there may be a need to allocate BTE cost amongst multiple customers. The BTE cost is allocated to the first customer that triggers it. If subsequent customers benefit from the same facility (assuming it has a net book value), Tariff Supplement No.6 allows for some costs to be re-allocated to the new customer to reduce the original customer's payment.

1.4 Reserving System Capacity and Energy

The interconnection queue does not guarantee capacity or energy to the customer. However, as long as the customer meets all the obligations to remain in the queue and proceeds through all the stages of the interconnection process, there is an implication that the capacity and energy will be reserved to the customer under the terms of Tariff Supplements No.5 and No.6 when BC Hydro signs the relevant agreements with the customer.

When there are multiple customer requests in a capacity constrained area, system capacity is not reserved to any other customers in the queue until the earlier queued customer has had an opportunity to sign a Facilities Agreement (FA). After signing the FA, it is expected that the customer will implement their interconnection work and be in-service on the date agreed to in the FA. If the customer defers their target in-service date, BC Hydro may need to conduct a re-study and/or revise the cost allocation of SR. It may also result in the change of customer's queue position.

2 The Principles of Load Interconnection Queue Management

The following key principles are applied in developing and implementing business practices to manage the load interconnection queue. In practice, BC Hydro may have to make more detailed decisions beyond what has been described in Section 3, due to project specific issues. BC Hydro will use the same key principles to make those project specific decisions.

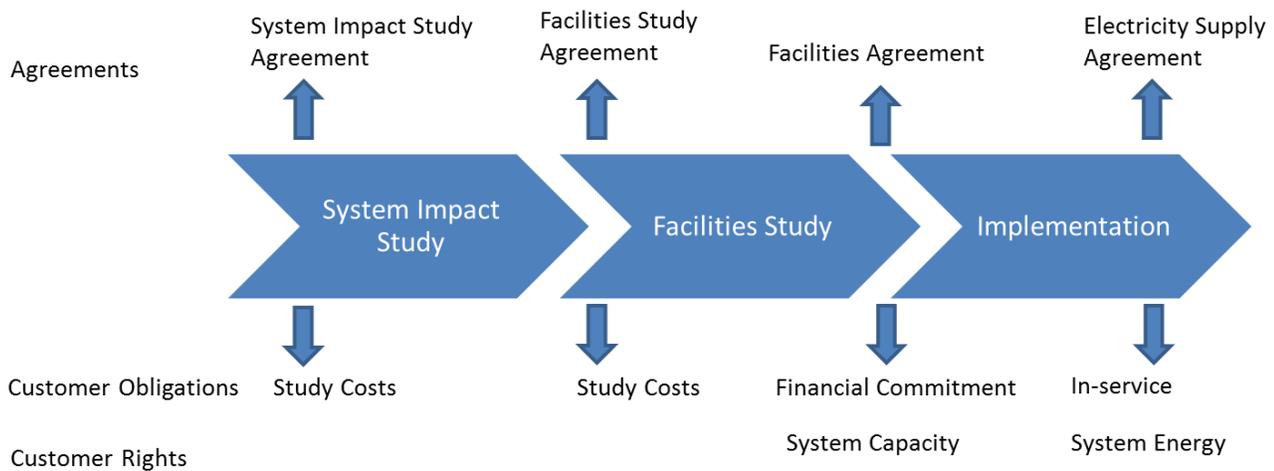
- Minimize impacts on other ratepayers
- Provide a fair and transparent process
- Efficient use of BC Hydro planning resources
- Align with BC Hydro tariffs and other regulatory requirements
- Provide flexibility to accommodate customer needs without causing negative impacts on other customers
- Balance the first-come first-served concept against opportunities to optimize the system.

The business practices are reviewed and revised as required to accommodate new circumstances and requirements.

3 The Business Practices of Load Interconnection Queue Management

3.1 Overview of Load Interconnection Process

A load interconnection request moves through three mandatory stages once the customer’s request is deemed accepted:



A detailed description of each stage in the process can be found in Section 3.3 and also in a document titled “Guide and Requirements for Service at 69,000 to 287,000 Volts (To be published)”.

3.2 Entering the Load Interconnection Queue

Requests from new transmission voltage customers are entered into the load interconnection queue based on the order in which requests are deemed accepted. The queue is not publicly available as it contains confidential customer information.

Upon receipt of a request, BC Hydro will have initial discussions with the customer to review the customer’s project and ensure the customer understands the Load Interconnection Process, including the obligations required by the customer to enter and remain in the queue. BC Hydro may provide a Conceptual Review (CR) at no cost to the customer to provide a high-level assessment of potential interconnection options and the extent of system upgrades that may be required for the customer’s interconnection request. At the CR stage, the customer’s request is not in the queue.

If the customer wishes to proceed, they will make a financial commitment (i.e., Purchase Order) for a SIS. BC Hydro will prepare a SIS Agreement that includes an estimate of the cost and duration to complete the study. If necessary, a scoping meeting can be scheduled. BC Hydro may request additional information from the customer and/or request the customer to confirm assumptions to be used for the study. The customer is required to execute the SIS Agreement, and provide financial commitment (i.e., Purchase Order) within 30 calendar days upon receipt of the SIS Agreement. The customer request is deemed to be acceptable and entered in the queue on the date and time when all of the following conditions have all been met:

1. The customer has provided load details and all other required information for BC Hydro to initiate the SIS, including confirmation of acceptance of assumptions to be used by BC Hydro,
2. The customer has executed the SIS Agreement, and
3. Financial commitment for the SIS has been received by BC Hydro.

3.3 Progressing through the Load Interconnection Process

Step 1 – System Impact Study (SIS)

The SIS is a series of technical studies performed by BC Hydro to determine the method for connecting the customer to the system. It establishes the BTE and any necessary SR as defined in Tariff Supplement No.6. A high-level assessment to identify potentially impacted First Nations, property rights and environmental risks may be also conducted, if necessary. The result of the SIS is a recommendation of the technically leading alternative/option to connect the customer and an order of magnitude (+100%/-50%) cost estimate.

In some cases, BC Hydro may require additional information from the customer to complete the SIS and will request the required information from the customer during the course of study. The customer is required to provide such additional information in a timely manner in order to keep the request active. If the customer does not have the information requested by BC Hydro, BC Hydro and the customer may agree to develop assumptions that will be used for the study, which may result in an extension of the study completion date.

If the customer subsequently provides additional information that is different than the assumptions, the customer would be responsible for the cost of any review or re-study that BC Hydro deems necessary. There may be a scheduling delay to the overall project because of the review or re-study. BC Hydro may withdraw the customer's request or re-assign a new queue position, if the customer makes changes that impacts other customers or materially changes the scope of facilities to be built.

If there are changes to the customer request, study assumptions, or scope, BC Hydro issues Change Orders to the SIS Agreement to keep track of these changes.

Once BC Hydro delivers a draft SIS report, the customer must review and provide comments in a timely manner. A meeting between BC Hydro and the customer may be scheduled to discuss the draft SIS report and develop the timeline to finalize the SIS report. The duration for BC Hydro to incorporate the customer's comments and finalize the SIS report would depend on the extent of revisions required.

Once BC Hydro delivers the final SIS report, the customer has 60 calendar days to provide written confirmation of their interest to proceed with a Facilities Study (FS). Failure to do so may result in withdrawal from the queue. BC Hydro may extend this timeline upon mutual agreement with the customer.

The SIS stage will be more complex and longer if BC Hydro expects the project will require a Certificate of Public Convenience and Necessity (CPCN) and/or will raise significant environmental, property and/or First Nations issues.

Step 2 – Facilities Study (FS)

BC Hydro conducts preliminary engineering work to develop equipment specifications, project schedule and detailed cost estimates (typically +20%/-10%) for the scope of work identified in the SIS. Depending on the project, First Nations consultation, and some property/environment related work may also be initiated at the FS stage. The customer pays for the full cost of the FS.

Typically, no further planning studies are required at FS stage. However, there may be additional studies required under special circumstances. BC Hydro will try to conduct these studies in parallel to the FS, if it is feasible. The customer is responsible for the cost of these additional studies.

Upon receipt of the customer's confirmation to proceed with an FS, BC Hydro will prepare a draft FS Agreement including estimated study cost and duration. The timeline for BC Hydro to prepare a draft FS Agreement depends on the complexity of the study and may take up to 4 calendar weeks. The customer is required to execute the FS agreement and provide financial commitment (i.e., Purchase Order) within 30 calendar days upon receipt of the FS Agreement in order to stay in the queue and keep the project active. In practice, BC Hydro may extend this timeline upon mutual agreement with the customer.

When the customer does not have certain information requested by BC Hydro, BC Hydro and the customer may develop assumptions that will be used for the FS. The customer is required to confirm acceptance of assumptions suggested by BC Hydro in a timely manner. If the customer provides detailed information later, which results in a review or re-study, the customer will be responsible for the cost of such a review or re-study. There may be a scheduling delay to the overall project because of the review or re-study. BC Hydro may withdraw the customer's request and re-assign a new queue position, if the customer makes changes that impacts other customers or materially changes the scope of facilities to be built.

If there are changes to the customer request, study assumptions, or scope, BC Hydro issues Change Orders to the FS Agreement to keep track of these changes.

Once BC Hydro provides a draft FS report, the customer must review and provide comments in a timely manner. A meeting between BC Hydro and the customer may be scheduled to discuss the draft FS report and develop the timeline to finalize the FS report. The duration for BC Hydro to finalize the FS report would depend on the extent of revisions required.

Once BC Hydro finalizes and tenders the final FS report, the customer has 60 calendar days to provide written confirmation of their interest to proceed with Implementation. Failure to do so may result in withdrawal from the queue. BC Hydro may extend this timeline upon mutual agreement with the customer. However, this extension may trigger a need for BC Hydro to revise the project plan. The customer is responsible for this additional cost.

Upon receipt of the customer's confirmation to proceed with Implementation, BC Hydro will initiate an internal capital project approval process, and tender the FA to the customer. The FA template is found in Tariff Supplement No. 6 and describes the facilities to be built by each party and the cost allocation for those facilities.

The customer is required to execute the FA and make the necessary financial commitments for the BTE and the SR specified in the FA within 30 calendar days upon receipt of the FA in order to stay in the queue and keep the project active. Failure to do so may result in withdrawal from the queue. If it takes longer for BC Hydro and the customer to finalize the financial commitments, BC Hydro may agree to extend the deadline upon mutual agreement with the customer. However, this extension may trigger a need for BC Hydro to revise the project plan before the project can move to the Implementation phase. The customer is responsible for this additional cost. In practice, BC Hydro and the customer start discussing and preparing for the necessary financial commitments much earlier, while the FS is in progress, so that BC Hydro and the customer can finalize the financial arrangements in a timely manner.

Step 3 – Implementation

Once the FA has been executed and financial arrangements with the customer are in place, BC Hydro will proceed with detailed design, procurement and construction of the facilities required to connect, and supply electricity to, the customer to meet the in-service date specified in the FA. In practice, some customers have

found it necessary to defer their in-service date during the Implementation phase. BC Hydro may agree to such a deferral taking into account the impact on other customers in the queue.

Prior to energization, an Electricity Supply Agreement (ESA) will be signed by BC Hydro and the customer. The ESA template is found in Tariff Supplement No. 5.

Additional notes on the load interconnection process:

- Depending on the complexity of requests and the project specific issues, additional studies (e.g., Feasibility Study, Area Planning Study) may be required either before or after the SIS.
- At the customer's option, some of the Load Interconnection Process steps could be conducted in parallel to meet the requested in-service date. In this case, the customer will be required to make sufficient financial commitment in a timely manner to maintain the accelerated schedule of studies or Implementation phase work. BC Hydro and the customer may sign an Early Engineering Procurement Agreement (EEPA) or other customized agreements if some of the Implementation phase work is accelerated.
- SIS and FS start dates and timelines to complete will depend on the specific study scope and BC Hydro resource availability. Therefore, it is possible that a customer that is later in the queue could receive a study before an earlier customer, resulting in a later customer potentially connecting before an earlier customer. In this case BC Hydro would ensure that there is no negative impact on the earlier customer(s) and in all cases the cost allocation to customers is based on their queue position.

3.4 Summary of Customer Obligations to Remain in the Load Interconnection Queue

The customer must meet the following requirements/milestones to maintain their queue position and/or move to the next step of the interconnection process:

- Provide sufficient technical information required to initiate an SIS or FS.
- Provide additional information requested by BC Hydro in a timely manner.
- Confirm/accept study assumptions in a timely manner.
- Execute SIS Agreement and provide financial commitment for the SIS within 30 calendar days upon receipt of a SIS Agreement
- Provide comments to draft studies in a timely manner.
- Provide written confirmation to proceed to the FS within 60 calendar days upon receipt of a final SIS report.
- Execute FS Agreement and provide financial commitment for the FS within 30 calendar days upon receipt of a FS Agreement.
- Provide written confirmation to proceed to the Implementation within 60 calendar days upon receipt of a final FS report.
- Provide sufficient financial commitment for the BTE and SR within 30 calendar days of receipt of the FA.
- Meet all milestones specified in the FA, unless an extension is agreed to by BC Hydro.
- Complete construction of all customer facilities and connect by the in-service date specified in the FA, unless an extension is agreed to by BC Hydro.

Notes on the milestones and deadlines:

- The customer may request an extension for the milestones/deadlines indicated above. BC Hydro may accept such an extension upon mutual agreement with the customer, if it does not impact other customers
- BC Hydro and the customer have regular communication throughout the Interconnection Process to ensure the customer is aware of the milestones and deadlines.

3.5 Withdrawing the Customer's Request from the Load Interconnection Queue

If the customer fails to meet the customer's obligations to remain in the queue (see Section 3.4), BC Hydro has the right to withdraw the customer's request from the queue. If this happens and the customer wishes to continue with the Load Interconnection Process, the customer's request will be placed at the bottom of queue.

The customer may also request BC Hydro to withdraw their request from the queue at any time. In such a case, the customer will be responsible to pay actual costs incurred up to that point during study phases and if during the Implementation phase, actual and committed costs up to that point.

BC Hydro will send a written notification to the customer in the event that the customer's request is withdrawn from the queue.

3.6 Changes Requested by the Customer during Study Stages

When a customer makes any changes to any information previously provided to BC Hydro, the following steps are taken to determine how the changes will be managed.

BC Hydro will review and assess the impact of change. If it impacts other customers in the queue or materially changes the scope of facilities to be built, the customer's request may be withdrawn from the queue and placed at the bottom of queue. If it does not impact other customers in the queue, the customer's request may remain in the same queue position.

BC Hydro will determine whether the customer's requested changes will cause a re-study and potential change of project scope. The customer will be responsible for the cost of any re-study. A re-study may also result in an overall scheduling delay. If there are changes to the customer request, study assumptions, or scope, BC Hydro issues Change Orders to the SIS Agreement or FS Agreement to keep track of these changes.

In certain circumstances, the customer's original request may remain in the original queue position and only the additional or revised request may be placed at the bottom of queue. An example is where the customer requests a certain load as the first phase of a project, and subsequently requests additional load for implementation in a second phase with a later in-service date. In this case, BC Hydro will use its discretion to determine how the customer's change request will impact the customer's queue position.

3.7 Changes during Project Implementation

Any changes requested by the customer during the Implementation phase will be assessed and possibly re-studied to determine if the change is material and could impact other customers. If the change impacts other customers or materially changes the scope of facilities to be built, BC Hydro may need to revise the FA, and the customer is required to execute the FA.

If a customer signs a FA before all earlier customers in the queue have been offered FAs, it is understood that there may be a need for BC Hydro to re-study the customer requests if any of the earlier customers withdraw from the queue. In this case, the re-study would not change the customer's queue position but the customer(s) would be responsible for the cost of re-study. The re-study may result in the re-allocation of SR costs which may increase or decrease the cost responsibility of the customer depending on the situation. If the re-allocation of SR costs occurs, BC Hydro will revise the FA.

3.8 Cluster Studies

If more than one customer request is received in an area at approximately the same time, it is often practical and efficient to study the requests as a group, or cluster, to provide an opportunity to optimize the system and to minimize study time, duration and cost.

When multiple requests are studied as a cluster, the base case and allocation of SR costs for each customer will be based on their queue position. The benefit of a clustered study approach is that BC Hydro can optimize the system reinforcement requirements and timing to meet customers requested in-service dates as much as possible in a timeframe that is much shorter than if the requests were studied individually.

Study costs for common facilities are allocated to requesting customers based on their pro-rated share of the total load request. Study costs for facilities and issues specific to a customer's load are allocated to that specific customer.

If any of the clustered customers cannot meet the obligations to remain in the study queue, or withdraw their requests, those customer requests will be withdrawn from the queue. This may cause a re-study to the remaining customers, and it is understood that the remaining customers will be responsible for the cost of re-study and this re-study may cause a scheduling delay.

4 Tariffs

4.1 Tariff Supplements No.5 and No.6

BC Hydro's queue management business practices are intended to complement the terms of Tariff Supplement No.5 and Tariff Supplement No.6. If there is any conflict between BC Hydro business practices and the Tariff, the Tariff will take precedence.