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## FortisBC

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October 26, 2022

British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, B.C.
V6Z 2N3
Attention: Ms. Sara Hardgrave, Acting Commission Secretary
Dear Ms. Hardgrave:

## Re: FortisBC Inc. (FBC)

## Application for Approval of a Large Commercial Interruptible Rate (Application) <br> Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1

On July 6, 2022, FBC filed the Application referenced above. In accordance with the regulatory timetable established in BCUC Order G-226-22 for the review of the Application, FBC respectfully submits the attached response to BCUC IR No. 1.

For convenience and efficiency, if FBC has provided an internet address for referenced reports instead of attaching the documents to its IR responses, FBC intends for the referenced documents to form part of its IR responses and the evidentiary record in this proceeding.

If further information is required, please contact the undersigned.
Sincerely,

## FortisBC Inc.

## Original signed:

Diane Roy

Attachments
cc (email only): Registered Parties

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A. RATIONALE FOR NEW INTERRUPTIBLE RATES
1.0 Reference: RATIONALE FOR NEW INTERRUPTIBLE RATES
Exhibit B-1 (Application), Section 2.1, p. 3
Customer Capacity RequestsOn page 3 of the Application, FortisBC Inc. (FBC) states:

Since October 2017, FBC has received numerous large capacity requests for data centres (e.g., cryptocurrency mining), cannabis production, new municipal projects, large customer developments, and forestry-related load throughout the FBC service territory. These requests have ranged from 1 Megawatt (MW) to 100 MW. [...]
1.1 Please provide further details regarding each of the "numerous large capacity requests" received by FBC since October 2017 in a table format, including the number of requests, each request's industry, size (MW), and whether these requests are from existing Rate Schedule (RS) 30 or RS 31 customers or new prospective FBC customers.

## Response:

The following tables represent the best information available to FBC and may not include some requests that were made prior to FBC tracking the requests in a more formal fashion. Requests have been included regardless of their current implementation status (e.g. discontinued, inprogress, complete).

In total, FBC has received approximately 1900 MW in load requests from large commercial and industrial customers over the past five years.

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Table 1: Load Request Details

| Request | Request Received | Industry | Requested Load | Existing or New Customer | Anticipated Rate Schedule | Region ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 2017 | Horticulture | 10-50 MW | New | RS 31 | Okanagan |
| 2 | 2017 | Horticulture | 1-5 MW | New | RS 30 | Okanagan |
| 3 | 2018 | Crypto / Data Centre | 50+ MW | New | RS 31 | Boundary |
| 4 | 2018 | Renewable Gas | 10-50 MW | New | RS 31 | West Kootenay |
| 5 | 2018 | Horticulture | 5-10 MW | New | RS 30 | Boundary |
| 6 | 2018 | Horticulture | 1-5 MW | New | RS 31 | Similkameen |
| 7 | 2018 | Horticulture | 1-5 MW | New | RS 30 | Okanagan |
| 8 | 2019 | Horticulture | 5-10 MW | New | RS 30 | Okanagan |
| 9 | 2019 | Horticulture | 5-10 MW | New | RS 31 | Okanagan |
| 10 | 2019 | Horticulture | 1-5 MW | Existing | RS 30 | Kootenay |
| 11 | 2019 | Horticulture | 1-5 MW | New | RS 30 | Similkameen |
| 12 | 2019 | Horticulture | 1-5 MW | New | RS 30 | West Kootenay |
| 13 | 2020 | Crypto / Data Centre | 10-50 MW | New | RS 31 | West Kootenay |
| 14 | 2021 | Renewable Gas | 50+ MW | New | RS 31 | West Kootenay |
| 15 | 2021 | Crypto / Data Centre | 50+MW | New | RS 31 | TBD |
| 16 | 2021 | Crypto / Data Centre | 50+ MW | Existing | RS 31 | TBD |
| 17 | 2021 | Crypto / Data Centre | 50+ MW | Existing | RS 31 | Okanagan |
| 18 | 2021 | Crypto / Data Centre | 10-50 MW | New | RS 31 | TBD |
| 19 | 2021 | Other | 5-10 MW | New | RS 31 | Okanagan |
| 20 | 2021 | Crypto / Data Centre | 5-10 MW | New | RS 31 | West Kootenay |
| 21 | 2021 | Other | 5-10 MW | Existing | RS 31 | West Kootenay |
| 22 | 2021 | Solar | 5-10 MW | New | RS 31 | Okanagan |
| 23 | 2021 | Crypto / Data Centre | 1-5 MW | New | RS 30 | West Kootenay |
| 24 | 2021 | Horticulture | 1-5 MW | New | RS 30 | Okanagan |
| 25 | 2022 | Crypto / Data Centre | 50+ MW | New | RS 31 | TBD |
| 26 | 2022 | Crypto / Data Centre | 50+MW | New | RS 31 | Okanagan |

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| Request | Request Received | Industry | Requested Load | Existing or New Customer | Anticipated Rate Schedule | Region ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 27 | 2022 | Crypto / Data Centre | 50+MW | New | RS 31 | Similkameen |
| 28 | 2022 | Crypto / Data Centre | 50+MW | New | RS 31 | Okanagan |
| 29 | 2022 | Crypto / Data Centre | 50+MW | New | RS 31 | Okanagan |
| 30 | 2022 | Crypto / Data Centre | 50+MW | New | RS 31 | Similkameen |
| 31 | 2022 | Crypto / Data Centre | 50+MW | New | RS 31 | Similkameen |
| 32 | 2022 | Crypto / Data Centre | 50+MW | New | RS 31 | Boundary |
| 33 | 2022 | Crypto / Data Centre | 10-50 MW | Existing | RS 31 | Similkameen |
| 34 | 2022 | Crypto / Data Centre | 10-50 MW | New | RS 31 | Okanagan Valley |
| 35 | 2022 | Crypto / Data Centre | 10-50 MW | Existing | RS 31 | TBD |
| 36 | 2022 | Mining | 10-50 MW | New | RS 31 | West Kootenay |
| 37 | 2022 | Crypto / Data Centre | 1-5 MW | New | RS 30 | TBD |
| 38 | 2022 | EV Charging | 1-5 MW | Existing | RS 30 | Okanagan |
| 39 | 2022 | Crypto / Data Centre | 1-5 MW | Existing | RS 30 | Okanagan |
| 40 | 2022 | Crypto / Data Centre | 1-5 MW | Existing | RS 30 | TBD |
| 41 | 2022 | Crypto / Data Centre | 1-5 MW | Existing | RS 30 | Okanagan |
| 42 | 2022 | Solar | 1-5 MW | New | RS 30 | Similkameen |

Table 2: Summary of Load Requests by Category

| Category |  | Metric |  |
| :--- | :--- | :---: | :---: |
| Request Received | 2017 | \# of <br> Requests | Requested Load <br> (MW) |
|  | 2018 | 2 | 20 |
|  | 2019 | 5 | 80 |
|  | 2020 | 5 | 20 |
|  | 2021 | 1 | 10 |
|  | 2022 | 11 | 600 |
| Industry | Crypto / Data Centre | 23 | 1160 |
|  | EV Charging | 1 | 1550 |
|  | Horticulture | 11 | 5 |


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| Category | Metric | \# of Requests | Requested Load (MW) |
| :---: | :---: | :---: | :---: |
|  | Mining | 1 | 10 |
|  | Other | 2 | 10 |
|  | Renewable Gas | 2 | 270 |
|  | Solar | 2 | 5 |
| Requested Load | 1-5 MW | 14 | 40 |
|  | 5-10 MW | 7 | 40 |
|  | 10-50 MW | 8 | 150 |
|  | 50+MW | 13 | 1670 |
| Existing or New Customer | Existing | 10 | 190 |
|  | New | 32 | 1710 |
| Anticipated Rate Schedule | RS 30 | 15 | 50 |
|  | RS 31 | 27 | 1850 |
| Region | Boundary | 3 | 120 |
|  | Kootenay | 1 | 5 |
|  | Okanagan | 16 | 540 |
|  | Similkameen | 7 | 340 |
|  | TBD | 7 | 600 |
|  | West Kootenay | 8 | 300 |

### 2.0 Reference: RATIONALE FOR NEW INTERRUPTIBLE RATES <br> Exhibit B-1, Section 2.2, p. 4; Exhibit B-2 (Supplemental Information), p. 3 Increase System Load Factor <br> On page 4 of the Application, FBC states: <br> Interruptible service will lead to an increase in the load factor on the overall FBC system in two ways: <br> 1. By adding new non-firm load that would otherwise be unable to connect; and <br> 2. By customer request, converting some or all of their existing firm load to nonfirm and thereby allowing additional firm load to connect to the FBC system. <br> Each of these scenarios would potentially provide incremental revenue without the cost of additional infrastructure that would otherwise be needed to support it. This situation provides rate mitigation for all customers. <br> On page 3 of the Supplemental Information, FBC states: <br> With regard to energy and capacity planning, FBC expects to include the expected energy and capacity costs associated with RS 38, as well as revenue associated with RS 38, in its ongoing revenue requirement forecasts. However, FBC is not planning to include consideration of the energy and capacity in its medium to longer term resource planning process as the intent is to acquire the energy and capacity on a short-term basis and flow through the market cost to the LCIR [Large Commercial Interruptible Rate] Customer. <br> 2.1 Please provide FBC's expected energy costs, capacity costs, and revenue associated with RS 38 to be included in revenue requirement forecasts for the next three years. Please explain all assumptions.

## Response:

At this point in time, FBC has not made assumptions about the expected take-up rate for RS 38 and therefore has not included any forecast for costs and revenue in the revenue requirement forecasts.

> 2.2 Please explain how FBC will account for load associated with RS 38 when planning its resources (e.g. in its Annual Electric Contracting Plan, making nominations, etc.).

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Response:
FBC does not expect to include RS 38 load in the electric supply planning process as FBC expects to purchase the supply to meet LCIR load on a day-ahead basis. However, FBC reserves the right to manage RS 38 load such that short term power rather than day ahead power may be purchased from time to time. However, as the RS 38 rate is based on day-ahead power, purchasing power on any other basis than day-ahead creates risk of a mismatch between the price paid by FBC and the RS 38 revenue received. An example of where it would make sense to purchase on a shortterm basis is if a block of negative priced power were to become available. In this case, there is little to no risk since the Mid-C price component of the RS 38 rate will not go below $\$ 0.00 / \mathrm{MWh}$ as explained in Section 3.2.1.2, Energy Charge.

> 2.2.1 Please explain why there are no impacts associated with RS 38 that are considered in FBC's medium to longer term resource planning process.

## Response:

There are no impacts to FBC's medium to longer term resource planning process as this is a market based interruptible rate. As such, it is appropriate that market supply or other short-term resources provide the required power and therefore no further resource planning process is required. In addition, since it is an interruptible rate, there is no need to plan for additional system capacity.
2.3 Please discuss how FBC's resources could be used to the benefit of other customers if the energy is not used to serve RS 38 customers during periods of higher Mid-C prices (e.g. the use of cheaper embedded cost power to supply other customers, buying less volume of expensive market energy in its resource stack, take advantage of high market energy prices by selling resources on the market, etc.).

## Response:

FBC expects to optimize the power supply portfolio considering the RS 38 load. FBC may choose to use FBC resources to meet the RS 38 load if that is the best option or FBC may choose to purchase market energy to meet the RS 38 load. When the latter occurs, the FBC energy resources remain available to meet load at a later time. On a capacity basis, additional surplus capacity sales might be possible, or if all FBC capacity is being used to meet load, then the portion of market costs used to meet RS 38 loads will be recovered from the RS 38 Customer rather than

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from all customers as would otherwise be the case. This also has the potential to result in significant savings to all non-RS 38 Customers.
2.4 Please explain how FBC intends to replace the existing firm load of RS 30 and RS 31 customers that would be converted to non-firm load under RS 38. If the strategy varies depending on how much load has been transferred from RS 30 and RS 31 to RS 38, please elaborate.

## Response:

Where a Customer has moved some or all of its load currently served on a firm basis to RS 38, capacity on the system can be made available to either an existing Customer that wishes to increase its load, or for a new Customer to connect where capacity constraints may have been a limiting factor. Load requests that cannot be accommodated currently are not always specific to location, so FBC can provide information to prospective Customers about the locations on the system where capacity is available. If by "strategy", the question is inquiring as to whether FBC will proactively seek out Customers to infill available capacity, this has not been contemplated and therefore the amount of load transferred will not affect FBC's approach to meeting new load requests. FBC is receiving ample interest from prospective large commercial customers such that seeking out new load is not expected to be necessary.
2.4.1 Please explain how much existing firm load of RS 30 and RS 31 customers, respectively, in aggregate, represents in megavolt-amperes (MVA) and in megawatts (MW), respectively.

## Response:

The sum of the average monthly peak load recorded in the billing system for RS 30 and RS 31 Customers for 2021 was approximately 88 MVA. FBC has sourced this information from billing records which only record MVA values.

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### 3.0 Reference: RATIONALE FOR NEW INTERRUPTIBLE RATES

Exhibit B-1, Section 2.3, p. 4, Section 3.1, p. 8, Section 3.2, p. 9, Section 4.2, p. 15<br>\section*{Cost Savings and Bridge to Firm Rates}

On page 4 of the Application FBC states:
However, interruptible rates may provide an interim step that allows customers to connect to the utility system in the short term, with the goal of taking firm service in the future once required upgrades have been completed. This opportunity for interruptible service reflects the avoidance of the long lead time due to the necessary capital planning and construction activities required to add significant capacity to the existing FBC system.

On page 8 of the Application, FBC states: "All costs associated with interconnection of load that will be taken under the LCIR are the responsibility of the customer."

On page 9 of the Application, FBC states that it acknowledges that in situations where a customer has one point of interconnection (POI) with FBC but has its total load split and separately metered downstream of the POI such that a portion is served under the LCIR, and a portion is served under another rate schedule, there will be some work associated with additional meter reading and billing elements.

On page 15 of the Application, FBC states: "[...] participating customers may have to make a significant capital investment in order to install the facilities required to meet the rate requirements."
3.1 Please discuss all incremental requirements (such as capital investment, interconnection requirements, upgrades) and their associated costs in the event that an RS 38 customer decides to transition to receive firm service in the future to (i) the RS 38 customer and (ii) to FBC.

## Response:

In order for a Customer that is taking service on a non-firm, interruptible basis pursuant to RS 38 to transition to service under either RS 30 or RS 31, the infrastructure serving the Customer would need to be sufficient to meet the $\mathrm{N}-1$ planning criteria. Such a Customer would be in the same situation as any existing or new Customer that was adding a large commercial load to the FBC system except that direct interconnection and metering facilities would already be in place. Any capital investment already made by the Customer (with the exception of costs related to splitting load between firm and non-firm service) would be required to interconnect regardless of the nature of the service requested. The Customer would be required to follow the Interconnection Request process, commission a System Impact and Facilities study, and fund any required system reinforcement. The key point here is that any large commercial customer, whether new or existing, would face similar costs to take firm service if connecting a similar load in substantially similar circumstances.

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3.2 Please discuss any impact on existing capital investment and assets in the event that an RS 38 customer decides to transition to receive firm service (i) for the RS 38 customer and (ii) for FBC.

## Response:

Please refer to the response to BCUC IR1 3.1.
3.3 Please compare the upgrades and investments required by new customers to receive interruptible service under RS 38 versus those required in order to receive firm service under RS 30 and RS 31 and highlight any differences and quantify the estimated differences in cost.

## Response:

RS 38 Customers are not required to make investments for upgrades or infrastructure other than those required for the interconnection and communication with FBC. The ability to take service without additional investment normally required to meet the $\mathrm{N}-1$ criterion is a basic reason for the interruptible nature of the rate.

A Customer requesting firm service under RS 30 or RS 31 would be required to fund any infrastructure additions or upgrades necessary to ensure that service under the $\mathrm{N}-1$ criterion could be maintained.

As discussed in the response to the Supplemental Information request (Exhibit B-2) question 4, there may be incremental costs for a Customer that would normally take service under RS 30 because the infrastructure required to facilitate communication and remote interconnection would not normally be present.

The cost of infrastructure additions or reinforcement for connecting a large commercial Customer for firm service, where such work is required, will vary widely with the situation.
3.4 Please provide a table laying out the breakdown of items involved in the required up-front capital investments and ongoing maintenance and inspection costs (including, but not limited to, any interconnection costs; capital investment; required system additions and/or reinforcement consistent with a new customer

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connecting and taking service under RS 30 and RS 31; any costs associated with additional metering and associated hardware for which the customer is responsible; and any ongoing costs related to the inspection and maintenance of the incremental facilities) for (i) a prospective customer to RS 38; (ii) an existing RS 30 customer taking service under RS 38; and (iii) an existing RS 31 customer taking service under RS 38. Please include a discussion and quantification of each item within the breakdown.

## Response:

The up-front capital, ongoing maintenance, and inspection costs will vary depending on the size and location of the Customer's request.

Requirements specific to prospective and existing RS 30 and RS 31 Customers undertaking RS 38 service are summarized below:
(i) Prospective RS 30 and RS 31 taking RS 38 service

- For both RS 30 and RS 31, Customers will be required to install all necessary equipment (i.e., communications, relays, disconnecting equipment, etc.) to facilitate remote interruption by FBC.
- RS 31 Customers will also be required to build a customer-owned substation and transmission line extension to their location. The equipment described above would be included in the customer-owned substation.
- All costs associated with taking load under the LCIR are the responsibility of the Customer including up-front capital, inspection, and maintenance costs.
(ii) RS 30 existing taking RS 38 service
- There would likely be incremental costs for existing RS 30 Customers switching to the RS 38 rate as there is not typically a requirement for RS 30 Customers to install all necessary equipment to facilitate remote interruption by FBC. This equipment would be installed downstream of the primary meter and would be the responsibility of the Customer to inspect and maintain.
- All costs associated with taking load under the LCIR are the responsibility of the Customer including up-front capital, inspection, and maintenance costs.
(iii) RS 31 existing taking RS 38 service
- There would likely be low incremental costs for existing RS 31 Customers switching to the RS 38 rate as there is already a requirement to install all necessary equipment to facilitate remote interruption. Upgrades to this equipment may be required as determined by FBC. This equipment resides in the customer-owned substation and is the responsibility of the Customer to inspect and maintain.

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- All costs associated with taking load under the LCIR are the responsibility of the Customer including up-front capital, inspection, and maintenance costs.
3.5 Please confirm that FBC will not incur any costs as described in response to the preceding IR.
3.5.1 If not confirmed, please provide a breakdown of all required costs, and explain how these costs will be recovered. If the cost will be recovered under RS 38 in full or in part, please elaborate on which rate component(s) these costs are being recovered under and by how much.


## Response:

Confirmed.

> 3.6 Please discuss any costs to FBC to maintain RS 38 if no customer takes up RS 38 and include a brief description and estimate of each cost.

## Response:

If the LCIR is approved for addition to the FBC Electric Tariff, but no Customers elect to take service under the rate, FBC does not anticipate that any costs will be incurred to maintain RS 38. FBC has a number of rate schedules available that have no current participants and no costs are associated with continuing to offer the rates as options.
3.7 Please discuss how FBC plans to ensure customers are fully informed of the required capital investment and associated costs given their specific characteristics (i.e. location, industry) such that they would be able to make an informed decision on whether to uptake RS 38 or not.

## Response:

Customers cannot interconnect to the FBC system without following the established Industrial Interconnection process, which includes a requirement for system studies and the completion of an estimate of interconnection costs. Work required on the customer side of the interconnection is the responsibility of the Customer and it would also be standard practice for a Customer to

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develop estimates for this portion of the work. FBC does not believe that a Customer can interconnect without being fully informed about the cost of doing so.
3.8 Please provide the anticipated timing of the system upgrades required to accommodate "firm service in the future once required upgrades have been completed" and explain whether these anticipated upgrades are included in FBC's most recent capital plan and long-term resource plan.
3.8.1 If it is not possible to provide the anticipated timing of these system upgrades, please discuss the condition under which these upgrades would be required.

## Response:

The system upgrades noted in the preamble are those specific to the Customer request. Depending on the size and location of a Customer's request, additional system upgrades that have not been identified in FBC's most recent capital plan and long-term resource plan may be required. These upgrades may drive the need for reconductoring lines or upgrading substations to increase capacity and accommodate the new request. These system upgrade projects can take several years to complete from the planning stage to the final in-service date.

### 4.0 Reference: RATIONALE FOR NEW INTERRUPTIBLE RATES

## Exhibit B-1, Section 1.3, p. 2

Approval Request
On page 2 of the Application FBC states:
FBC seeks an order approving, on a permanent basis, the LCIR as shown in RS 38 - Large Commercial Interruptible Service contained in Appendix A of this Application, to be effective at least 30 days from the date of the order.
4.1 Please provide reasoning or justification as to why FBC seeks approval for the LCIR "to be effective at least 30 days from the date of the order." Please also include a discussion on timing regarding the in-service date of RS 38 from an operational perspective, communication lead time with prospective customers, and administrative and implementation requirements.

## Response:

While it will likely take longer than 30 days to get any Customer operational under the rate, FBC does not want the rate to be effective as of the date of a final BCUC order approving the rate since there will be internal activities required to prepare process prior to the rate becoming effective. FBC will require some time to familiarize staff involved with administering the service and those responsible for key accounts with the new service offering.

FBC expects that for any new Customer wishing to take service under RS 38 there may be a significant lead time required from an operational point of view in some circumstances. The required lead time will be highly dependent on what equipment may have to be installed to facilitate a Customer taking service under RS 38. This will be more complex if the Customer desires only a portion of their load to be on RS 38 as this will likely require equipment to be installed on the Customer's premises that can be operated by the utility.

FBC expects that from a power supply or administrative point of view a much shorter time frame is required and 30 days should be sufficient time to work out the administrative requirements as well as to arrange for power supply.

## B. LARGE COMMERCIAL INDUSTRIAL RATE - RATE DESIGN <br> 5.0 Reference: LARGE COMMERCIAL INDUSTRIAL RATE - RATE DESIGN <br> Exhibit B-1, Section 3.1, p. 7 <br> Rate Design Elements - Key Features

On page 7 of the Application, FBC states:
Not all of the key aspects relevant to the LCIR will appear in the RS 38 tariff pages. This is because the interruptible rate program leverages existing processes and information contained in pre-existing standards and business practice documents that are available on the FBC website and that will be discussed with potential customers in advance of and during the application process. [...]
5.1 Please provide a copy of all pre-existing standards and business practice documents that are available on the FBC website that are applicable to RS 38 and provide a reference to the source of those documents.

## Response:

Depending on the size and voltage level of the request, Customers will either need to follow the Interconnection Request process or the New Connect process. The links to the various preexisting standards and business practice documents related to these processes are provided below.

- Interconnection Request Process:
- The following link is to the FBC webpage which provides the information for all transmission voltage customers and distribution voltage customers requiring greater than 5,000 KW: Industrial electricity interconnection (fortisbc.com)
- Additional Transmission and interconnection resources on the webpage with their links are as follows:
- Interconnection request form
- Facility connection flowchart
- Facility connection requirements
- New Connect Process:
- The following link is to the FBC webpage which provides the information for all new connection distribution voltage customers requiring less than 5,000 kW: https://www.fortisbc.com/services/electricity-services/request-or-change-your-electricity-service
- The webpage provides information and the following additional links to forms and resources as follows:
- online request form
- service request form.

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- electrical design process here.
- FortisBC's Electric Tariff
- Specification for installation of underground conduit systems
- Service and Metering Guide


#### Abstract

5.1.1 Please list what other rate schedules to which the referenced documents above are also applicable.


## Response:

The applicability of the Interconnection Request process is dependent on circumstance rather than rate schedule. As noted on the Industrial Electricity Interconnection portion of the FBC website, ${ }^{2}$ these are circumstances such as those that:

- require a connected load of $5,000 \mathrm{~kW}$ or more;
- have one or more large pieces of equipment in your facility at or over $2,000 \mathrm{hp}$;
- build, own, operate and maintain an electrical substation and transmission line connected to FortisBC's transmission system; and
- require a unique or specialized distribution system connection.

While it is conceivable that some form of service under the fourth bullet above could be other than large commercial, FBC has not encountered a situation where the documents applied to any rate class other than Large Commercial.
5.1.2 Please explain how these documents are applicable to both RS 38 and the rate schedules listed above.

## Response:

As noted in the response to BCUC IR1 5.1.1, the documents are applicable to several specific circumstances that are inclusive of the types of industrial interconnections that typify RS 30, RS 31, and RS 38 Customers.

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### 6.0 Reference: LARGE COMMERCIAL INDUSTRIAL RATE - RATE DESIGN <br> Exhibit B-1, Section 6, p. 21, Appendix C - Consultation Materials, "LCIR Consultation Q\&A July - Final" Cost Recovery

On page 21 of the Application, FBC states that it considers "the LCIR rate design and associated terms and conditions will: ... (iii) make a contribution to fixed costs."

On page 3 of the "LCIR Consultation Q\&A July - Final" document in Appendix C to the Application, FBC states, "as a market-based rate the LCIR does not rely on the historical costs embedded in the [cost of service allocation] COSA except for the elements of transmission service referenced in the LCIR rate."
6.1 Please discuss all components of the LCIR which rely on the historical costs embedded in the COSA, including a brief description and how such components rely on the COSA.

## Response:

The referenced statement refers to the System Loss Rate (Rate Schedule 109) that is a component of the LCIR Energy Charge. Loss compensation is required for all transactions involving firm and non-firm point-to-point transmission service. The current RS 109 assesses power losses as follows:

- Transmission Connected Service - 2.86 percent; and
- Distribution Connected Service -4.26 percent.

The rates for RS 109 were revised and received BCUC approval as part of the 2017 Cost of Service Analysis and Rate Design Application.
6.2 Please explain in detail, with reference to each component of the proposed rate (e.g. Customer Charge and each component of the Energy Charge) how the LCIR rate design will "provide benefits to all ratepayers by setting pricing that is sufficient to cover any additional power purchases required to service the non-firm load." Please support your response with reference to FBC's most recent COSA, if applicable.

## Response:

The referenced passage (Application, page 21, lines 15-16) is not a reference to individual rate components or to the most recent FBC COSA. Rather, it refers to the fact that the rate, by design, recovers from participating Customers an amount that is higher than the prevailing current market

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price. And, since FBC will only rely on alternative recourses when they are lower than market, the same holds true when the market is not the resource used.

It follows that since the exchange rate-adjusted Mid-C price is the base of the rate, to which is added loss compensation, the Hourly Service Adder, and potentially the Clean Market Adder, revenue over and above the Mid-C price will be available to contribute to the recovery of costs related to existing fixed assets to the benefit of other customers.
6.3 Please explain how the LCIR rate design will "make a contribution to fixed costs" and elaborate on the conditions under which a contribution to fixed costs would and would not occur, respectively.

## Response:

Please refer to the response to BCUC IR1 6.2. As explained in that response, the LCIR will necessarily make a contribution to fixed assets on an individual customer basis. However, in the case where FBC is unable to attract firm load to infill existing load that has transitioned to RS 38, this contribution may fall short of that formerly provided by either RS 30 or RS 31 resulting in a net negative contribution.

### 7.0 Reference: LARGE COMMERCIAL INDUSTRIAL RATE - RATE DESIGN

## Exhibit B-1, Section 3.2, pp. 8, 10; Exhibit B-2, p. 7 <br> Customer charge

On page 8 of the Application, FBC states:

> The Customer Charge for an Interruptible Customer is proposed to be the same as contained in the rate schedule the customer would normally be eligible for. FBC does not believe that for an Interruptible Customer the costs associated with customer service functions such as billing or meter reading would be much different, if different at all, than for other Large Commercial customers.

Further on page 10, FBC states, " $[t]$ he customer may nominate the Mid-C Price Cap monthly by providing FBC with the maximum Mid-C price it is willing to pay by the 20th day of the preceding month."

On page 7 of the Supplemental Information, FBC states:
In all cases, if an LCIR Customer chooses a more complicated billing arrangement (for example, to facilitate a split of load between interruptible and firm service), there may be costs associated with additional metering and associated hardware for which the Customer is responsible.
7.1 Please explain and quantify the costs of all resources required by FBC to implement RS 38 (such as administration costs to manage a more complicated billing arrangements for some RS 38 customers and costs to manage a customerspecific monthly Mid-C Price Cap nomination).

## Response:

As noted in the reference from page 8 of the Application, FBC does not believe that producing a bill for any configuration of RS 38 service or receiving the monthly nomination from participating Customers will result in any additional costs. Large Customer billing is performed by a dedicated group of employees that deal with a variety or complex billing as part of their regular work, and similarly, administration of the price cap is a relatively uncomplicated matter that will be managed by the Power Supply group as part of routine duties. Given this fact, the existing Customer Charges to which the Customer would normally be subject adequately recover these costs.
7.2 Please explain how the proposed Customer Charge, which is the same as the customer charge contained in the rate schedule that the customer would normally be eligible for under RS 30 and RS 31 as applicable, adequately recovers the costs quantified above.

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### 7.2.1 If these costs are not recovered under the Customer Charge, please specify how these costs will be recovered.

## Response:

Please refer to the response to BCUC IR1 7.1.

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### 8.0 Reference: LARGE COMMERCIAL INDUSTRIAL RATE - RATE DESIGN

## Exhibit B-1, Section 3.2, p. 10; Exhibit B-2, Table 1, p. 4; RS 109 Transmission Losses ${ }^{3}$

Energy Charge: System Losses
On page 10 of the Application, FBC states that System losses are as per RS 109.
On page 4 of the Supplemental Information, in Table 1: RS 38 Hourly Energy Charge Examples, FBC shows a " 1 + Loss Rate" in column b of 1.0426 for RS 30 customers and 1.0286 for RS 31 customers.
8.1 Please reconcile the system losses calculated for RS 30 and RS 31 customers in Table 1: RS 38 Hourly Energy Charge Examples with the transmission loss rate per RS 109 for large commercial customers.

## Response:

FBC has been unable to locate a Compliance filing to Order G-40-19 dated June 26, 2019 as specified in the footnote to this question, but has located a filing of this description dated April 26, 2019 as well as an RS 109 specific filing dated June 18, 2019. This response relies on RS 109 as it appears in the approved tariff.

It is unclear to FBC that the loss rates stated in the Application and Supplemental Information filing require reconciliation with RS 109.

Page 10 of the Application notes that the System losses are as per RS 109.
Losses in Table 1 of the Supplemental Information are 4.26 percent for distribution connected Customers (RS 30) and 2.86 percent for transmission connected Customers (RS 31) as shown in the snip below.

| 11 | RS 30 | 1.0426 | 0.110 | 0.0100 | 0.002 | 0.12720 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 12 | RS 31 | 1.0286 | 0.010 | 0.0100 | 0.002 | 0.02263 |

The RS 109 loss rates from the FBC Electric Tariff are as per the excerpt below.
RATE SCHEDULE 109 - TRANSMISSION LOSSES
APPLICABLE: All transactions under Rate Schedules 100 and 101 will incur real power losses as follows:

Wholesale Service - Transmission 2.86\%
Wholesale Service - Primary 4.26\%
Large Commercial Service - Transmission 2.86\%

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### 9.0 Reference: LARGE COMMERCIAL INDUSTRIAL RATE - RATE DESIGN

Exhibit B-1, Section 3.1, p. 8, Section 3.2, pp. 10-12; Exhibit B-2, p. 10

## Energy Charge: Mid-C Price Cap

On page 8 of the Application, referring to "Reasons for Interruption", FBC states, "[f]or Hours where FBC reasonably expects that the Energy Charge will be based on the MidC Price Cap as described in part i) of the Energy Charge portion of the RS 38 rate schedule, FBC may interrupt the Customer."

On page 10 of the Application, FBC states:
[...] In Hours in which the applicable Mid-C Price exceeds the cap, if any, nominated by the Interruptible Customer pursuant to the applicable Service Agreement, expressed in $\$ / \mathrm{MWh}$ (the "Mid-C Price Cap") for the month in which such Hour occurs, a value equal to the Mid-C Price Cap will be used;
[...]
With regard to the cap on the Mid-C price that factors into the Energy Charge for a particular customer, the Mid-C Price Cap would be nominated by the Customer based on its specific risk tolerance and operational needs. This is a departure from the final discussions held with customers and intervener groups during public engagement, where the cap was originally going to be a set number, common to all customers. A customer-specific cap was discussed, and was viewed positively by participants, but was dismissed due to what FBC saw as a high administrative burden at the time. However, upon further review, FBC now views a customerspecific cap as manageable and offering the most flexibility for customers to tailor the LCIR to their specific needs. The customer may nominate the Mid-C Price Cap monthly by providing FBC with the maximum Mid-C price it is willing to pay by the 20th day of the preceding month.

On page 12 of the Application, FBC states reasons why service may be interrupted, including "[f]or Hours where FortisBC [FBC] reasonably expects that the Energy Charge will be based on the Mid-C Price Cap as described in part i) of the Energy Charge portion of this rate schedule, FortisBC may interrupt the Customer." Further, on page 12, FBC states that it "will optimize its overall system resources and as a result, even if the market price is above the Mid-C Price Cap, FBC may elect to maintain supply to the LCIR customer at an Energy Charge that reflects the Mid-C Price Cap."

On page 10 of the Supplemental Information, FBC states:
It is unlikely that whether or not FBC would interrupt the Customer would be an all or nothing proposition as modeled, and more likely the results would fall in between the "no" and "yes" figures for a given load and a given Cap choice. [...]

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9.1 Please explain how monthly nominated Mid-C Price Caps will be accepted or rejected by FBC. As part of the response, please discuss how FBC determines if a nominated Mid-C Price Cap is reasonable and the process for if a nominated Mid-C Price Cap is deemed unreasonable.

## Response:

FBC intends to work with the Customers to arrive at a mutually agreeable Mid-C Price Cap that will meet the objectives of both the Customer and the utility. As a result of this process, FBC does not believe that occurrences of disagreement resulting in FBC deeming a proposed price cap to be unreasonable will be common. From FBC's perspective, evaluation of a particular price cap will be guided by the following points:

1. How the customer-selected price cap compares to charges under the current rate schedule that the Customer would otherwise be eligible for and what additional credit concerns may exist;
2. How the selected price cap compares to other RS 38 Customers' price caps. If there are many Customers and they all select a different cap, some consolidation will be required. FBC expects that 3 or at most 4 price points will be available for FBC to nominate power purchases; and
3. The size of the Customer. Power is typically traded in 5 MW blocks. While some variance is acceptable, four 1 MW RS 38 Customers, all wanting a different price cap, is not reasonable and some compromises would be required.

Ultimately, if the Customer and FBC cannot come to an agreement, the Mid-C Price Cap may need to be set by the BCUC, which is a process similar to the final determination of the Stand-By Demand Limit that is required under RS 37, Stand-by Service.
9.2 Please confirm that in a given month, the Mid-C Price Cap nominated by each customer could differ, for example, one RS 38 customer could nominate a $\$ 35$ USD Mid-C Price Cap and another RS 38 customer could nominate a $\$ 50$ USD Mid-C Price Cap. If not confirmed, please explain.
9.2.1 If confirmed, please also confirm, or explain otherwise, that for any given Mid-C market price, customers with a Mid-C Price Cap lower than the current market price could face service interruption or receive service priced at the Mid-C Price Cap, while customers with a Mid-C Price Cap above the current Mid-C market price will receive service uninterrupted at the market price, all else being equal.

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## Response:

Confirmed in both cases.

> 9.2.1.1 Please explain how the customer-specific nomination process ensures fairness amongst different RS 38 customers, given some customers will be receiving energy at the Mid-C Price Cap while others are paying the current Mid-C market price.

## Response:

FBC considers that the principle of fairness is satisfied by providing all RS 38 Customers the opportunity to set a maximum price for energy that reflects their individual circumstances including economic factors and level of risk tolerance.

In the relatively rare event that FBC elects to maintain service even though the Customer Aselected price cap is below the market price, Customer A was taking a very large risk that power would not be available to them at that price point. Customer B, who selected a higher price cap that was above the market price, would be taking much less risk of interruption due to lack of supply.
9.3 Please confirm, or explain otherwise, in the scenario where the Mid-C Price exceeds the cap and "a value equal to the Mid-C Price Cap will be used", FBC is providing the customer with power at a rate that is lower than the current Mid-C price.

## Response:

FBC confirms that as stated in the preamble, even if the market price is above the Mid-C Price Cap, FBC may elect to maintain supply to the LCIR Customer at an Energy Charge that reflects the Mid-C Price Cap.
9.3.1 If confirmed, please explain how FBC will recover the cost difference. As part of the response, please discuss any impact to other FBC customers arising from potential cross-subsidisation.

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## Response:

The case where FBC maintains service to a Customer when the Mid-C price exceeds that Customer's nominated Mid-C Price Cap occurs only where FBC has alternate resources available that it can use to supply the Customer and those resources are priced below the Customer's MidC Price Cap. In this case, since FBC is still basing the Energy Charge on the Mid-C Price Cap, there is no cost difference to be recovered and no potential for cross subsidization.

A practical example of where this could occur is towards the end of the Canal Plant Agreement (CPA) summer storage season on July $31^{\text {st }}$. If FBC anticipates that it will have a surplus of energy in storage that will have to be spilled ${ }^{4}$ but at the same time has surplus capacity, then operationally, it is very likely that FBC will not buy the power from the market to meet RS 38 load but will use as much stored energy as possible as it would otherwise be lost.

> 9.4 Please explain in detail how "FBC will optimize its overall system resources" and be able to maintain supply to the RS 38 customer at an Energy Charge that reflects the Mid-C Price Cap.

## Response:

Please refer to the response to BCUC IR1 9.3.1 for an example of an operational situation where the best decision is to store cheap energy in the hope it can be sold to a RS 38 Customer at a later time. In general, anytime FBC has surplus capacity resources, it may be possible to use stored energy to meet RS 38 load. FBC's contracts and operations are complex and if this is advantageous or not will all depend on the exact details of the situation at the time.
9.4.1 Please provide (i) the average cost of FBC's system resources and (ii) FBC's incremental power supply cost and explain the value of the Mid-C Price Cap at which power supplied at the Mid-C Price Cap using FBC system resources would result in cost under-recovery and crosssubsidization from other ratepayers to RS 38 customers.

[^3]
## Response:

The average cost of FBC's system resources is not relevant to determine how RS 38 Customers will be supplied. Rather, it is FBC's incremental cost that must be considered. However, actual power supply operations are complex and FBC incremental cost can vary substantially from day to day.

There is no value of the Mid-C Price Cap at which power supplied at the Mid-C Price Cap using FBC system resources would result in cost under-recovery and cross-subsidization from other ratepayers to RS 38 Customers. If the Mid-C Price Cap is set at a level where supplying power from system resources (or any resource that was the lower cost at the time) resulted in underrecovery, then the Customer would be interrupted.
9.5 Please explain the factors which have contributed to the change in FBC's view regarding a customer-specific cap from being "a high administrative burden at the time" of the public engagement sessions to the view that a customer-specific cap is "manageable."

## Response:

The FBC change in view in regard to customer-specific caps being "manageable" came about as a result of conversations with Powerex under the CEPSA agreement as to how this could be managed.
9.6 Please discuss any communication and assistance FBC intends to provide to prospective RS 38 customers with the monthly nomination process for a Mid-C Price Cap, if required.

## Response:

Potential RS 38 Customers either are, or will be, large commercial Customers with a FBC Key Account Manager and direct contact with the System Control Centre. FBC has committed to provide prospective Customers with historical outage information for particular locations, as well as information regarding historical and forecast Mid-C price levels. The Mid-C Price Cap ultimately nominated by the Customer will presumably include these considerations as well as business particulars and priorities that are specific to the individual Customer.

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9.7 Please clarify whether FBC proposes to be able to interrupt a customer for hours where the Day-Ahead Mid-C Index is equivalent to the customer-nominated MidC Price Cap. If yes, please explain whether this is specified in the draft RS 38 tariff.

## Response:

As stated in the Application under Section 3.2.1.2, FBC will cap the charges at the Mid-C Price Cap. Therefore, interruption will only occur if the market price was above the Mid-C Price Cap. If the market price is equal to the Mid-C Price Cap, no interruption is expected. This is consistent with the draft RS 38 tariff.

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10.0 Reference: LARGE COMMERCIAL INDUSTRIAL RATE - RATE DESIGN

## Exhibit B-1, Section 3.2, p. 9; Appendix C - Consultation Materials, "LCIR Consultation Q\&A Aug - Final", "LCIR Feb 2022 Final"; Exhibit B-2, pp. 8--9

Energy Charge: Mid-C Price Cap - Sample

On page 9 of the Application, FBC explains that the energy charge is based on actual energy flows in the On-peak and Off-peak hours multiplied by the On-peak and Off-peak day ahead index prices, the Intercontinental Exchange (ICE) Day Ahead Mid-Columbia Peak Index and the Day Ahead Mid-Columbia Off-Peak Index, respectively.

On page 2 of the "LCIR Consultation Q\&A Aug - Final" document in Appendix $C$ to the Application, FBC states: "No, the $\$ 75 / \mathrm{MWh}$ price (which is a placeholder at the current time) was derived from the RS 31 rate at the prescribed minimum load factor."

On page 8 of the "LCIR Feb 2022 Final" document in Appendix C to the Application, FBC states, "Energy Rate will be based on the Mid-C rate, capped at $\$ 75$ CDN."

On pages 8 and 9 of the Supplemental Information, FBC provides two tables:

- Table 3-1 is produced from hourly Mid-C pricing for the month of March 2022 consistent with the month used in the example in Section 3.3 of the Application (reproduced in part below).
- Table 3-2 is produced from hourly Mid-C pricing for the month of July 2022 where hourly pricing tended to be higher than in March.

| Table 3-1: March 2022 Results |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Load Switched to RS 38 (kVA) | Mid-C <br> Price Cap (USD) | Interrupted? | Hours of Interruption | RS 38 Revenue (\$) | RS 31 Revenue (\$) | Monthly RS 38 Margin ( $\$$ | Monthly RS 31 Margin ( $\$$ | Margin Variance (\$) |
| 5.000 | 50 | No | 0 | 199,309 | 254,466 | 42,742 | 97,908 | 55,166 |
| 5,000 | 40 | No | 0 | 199,309 | 254,466 | 42,742 | 97,908 | 55,166 |
| 5.000 | 35 | No | 0 | 199,309 | 254,466 | 42,742 | 97,908 | 55,166 |

10.1 Please provide the historical average monthly Day Ahead Mid-Columbia Peak Index and Day Ahead Mid-Columbia Off-Peak Index prices for the past three years.

## Response:

Please refer to the following table for the average monthly Day Ahead Mid-C Peak Index and Day Ahead Mid-C Off-Peak index prices for the past three years.

|  | Mid-C Average On Peak (USD/MWh) |  | Mid-C Average Off Peak (USD/MWh) |  |
| :---: | :---: | :---: | :---: | :---: |
| Oct-19 | \$ | 33.94 | \$ | 29.89 |
| Nov-19 | \$ | 36.91 | \$ | 28.46 |
| Dec-19 | \$ | 35.49 | \$ | 31.43 |
| Jan-20 | \$ | 24.81 | \$ | 21.00 |
| Feb-20 | \$ | 17.84 | \$ | 14.37 |
| Mar-20 | \$ | 24.10 | \$ | 21.16 |
| Apr-20 | \$ | 18.42 | \$ | 17.70 |
| May-20 | \$ | 11.58 | \$ | 6.20 |
| Jun-20 | \$ | 10.37 | \$ | (1.72) |
| Jul-20 | \$ | 19.30 | \$ | 7.08 |
| Aug-20 | \$ | 37.89 | \$ | 17.21 |
| Sep-20 | \$ | 39.03 | \$ | 24.00 |
| Oct-20 | \$ | 33.53 | \$ | 27.79 |
| Nov-20 | \$ | 26.63 | \$ | 23.07 |
| Dec-20 | \$ | 30.40 | \$ | 25.65 |
| Jan-21 | \$ | 23.62 | \$ | 20.92 |
| Feb-21 | \$ | 51.46 | \$ | 37.37 |
| Mar-21 | \$ | 27.91 | \$ | 26.05 |
| Apr-21 | \$ | 39.36 | \$ | 35.05 |
| May-21 | \$ | 34.27 | \$ | 30.33 |
| Jun-21 | \$ | 74.60 | \$ | 28.25 |
| Jul-21 | \$ | 127.41 | \$ | 40.11 |
| Aug-21 | \$ | 72.27 | \$ | 43.57 |
| Sep-21 | \$ | 77.20 | \$ | 52.68 |
| Oct-21 | \$ | 65.61 | \$ | 56.85 |
| Nov-21 | \$ | 48.90 | \$ | 40.45 |
| Dec-21 | \$ | 57.97 | \$ | 39.61 |
| Jan-22 | \$ | 41.60 | \$ | 35.76 |
| Feb-22 | \$ | 39.69 | \$ | 34.96 |
| Mar-22 | \$ | 34.09 | \$ | 32.91 |
| Apr-22 | \$ | 77.77 | \$ | 65.95 |
| May-22 | \$ | 61.87 | \$ | 51.11 |
| Jun-22 | \$ | 35.71 | \$ | 6.40 |
| Jul-22 | \$ | 72.15 | \$ | 33.54 |
| Aug-22 | \$ | 108.16 | \$ | 67.55 |
| Sep-22 | \$ | 216.00 | \$ | 91.01 |

10.2 Please explain how the revenue (RS 38 Revenue and RS 31 Revenue) and Monthly Margins (Monthly RS 38 Margin and Monthly RS 31 Margin) in Table 3-1 and Table 3-2 in the Supplemental Information were calculated. As part of the response, please provide an Excel spreadsheet containing all inputs (including the Mid-C market price used in an additional column), formulas, and assumptions used.

## Response:

RS 38 Revenue shown in Tables 3-1 and 3-2 is the sum of hourly charges pursuant to calculation of Energy Charges under the proposed LCIR for March and July respectively. These charges consider the size of the load, the Day Ahead Mid-C price, and the level of the nominated Mid-C Price Cap which determines the number of hours in which service is interrupted - if interruptions are factored in (as indicated by the third column).

RS 31 Revenue is calculated according to the RS 31 tariff pages, based on continuous service through the month for the total energy consumed and peak demand.

RS 38 Margin is the difference between total RS 38 revenues and RS 38 power purchase costs assuming that power is purchased from the market.

RS 31 Margin is the difference between total RS 31 revenues and RS 31 power purchase costs assuming that power is purchased under the Power Purchase Agreement (PPA) with BC Hydro.

Please refer to Attachment 10.2 for the Excel model used to populate Tables 3-1 and 3-2.
10.3 Please provide Table 3-1 and Table 3-2 if a Mid-C Price Cap of \$75 CAD is used. As part of the response, please provide an Excel spreadsheet containing the MidC Market Price, the Mid-C Price Cap of $\$ 75$ CAD, such that both prices are denominated in an equivalent currency and any currency exchange rate used as appropriate.

## Response:

FBC provides the following information in this response. First, upon reviewing the results, it was noticed that the exchange rate used in the July results in the Supplemental Information was not updated from the March results. In the first table below, this has been corrected and this table should replace the version in the Supplemental Information.

The second and third tables below are versions of Tables 3-1 and 3-2 using a Mid-C Price Cap of $\$ 75$ CAD as requested in this IR. The Mid-C Price Cap has been converted to $\$$ USD using the following common exchange rates as requested - March \$1 USD = 1.2496 \$CDN, July \$1 USD = 1.2824 \$CDN.

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| Load Switched to RS 38 (kVA) | Mid-C Price Cap (USD) | Interrupted? | Hours of Interruption | RS 38 Revenue |  | RS 31 Revenue |  | Monthly RS 38 <br> Margin |  | Monthly RS 31 Margin |  | Margin Variance |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 5,000 | 50 | No | 0 | \$ | 302,969 | \$ | 254,466 | \$ | 45,624 | \$ | 77,912 | \$ | 32,288 |
| 5,000 | 40 | No | 0 | \$ | 302,969 | \$ | 254,466 | \$ | 45,624 | \$ | 77,912 | \$ | 32,288 |
| 5,000 | 35 | No | 0 | \$ | 302,969 | \$ | 254,466 | \$ | 45,624 | \$ | 77,912 | \$ | 32,288 |
| 5,000 | 50 | Yes | 336 | \$ | 96,538 | \$ | 254,466 | \$ | 23,084 | \$ | 77,912 | \$ | 54,827 |
| 5,000 | 40 | Yes | 440 | \$ | 59,720 | \$ | 254,466 | \$ | 16,861 | \$ | 77,912 | \$ | 61,051 |
| 5,000 | 35 | Yes | 528 | \$ | 32,569 | \$ | 254,466 | \$ | 11,706 | \$ | 77,912 | \$ | 66,206 |
| 10,000 | 50 | No | 0 | \$ | 605,939 | \$ | 508,932 | \$ | 91,248 | \$ | 155,823 | \$ | 64,575 |
| 10,000 | 40 | No | 0 | \$ | 605,939 | \$ | 508,932 | \$ | 91,248 | \$ | 155,823 | \$ | 64,575 |
| 10,000 | 35 | No | 0 | \$ | 605,939 | \$ | 508,932 | \$ | 91,248 | \$ | 155,823 | \$ | 64,575 |
| 10,000 | 50 | Yes | 336 | \$ | 193,076 | \$ | 508,932 | \$ | 46,168 | \$ | 155,823 | \$ | 109,655 |
| 10,000 | 40 | Yes | 440 | \$ | 119,441 | \$ | 508,932 | \$ | 33,721 | \$ | 155,823 | \$ | 122,102 |
| 10,000 | 35 | Yes | 528 | \$ | 65,137 | \$ | 508,932 | \$ | 23,411 | \$ | 155,823 | \$ | 132,412 |
| 20,000 | 50 | No | 0 | \$ | 1,211,877 | \$ | 1,017,864 | \$ | 182,496 | \$ | 311,646 | \$ | 129,150 |
| 20,000 | 40 | No | 0 | \$ | 1,211,877 | \$ | 1,017,864 | \$ | 182,496 | \$ | 311,646 | \$ | 129,150 |
| 20,000 | 35 | No | 0 | \$ | 1,211,877 | \$ | 1,017,864 | \$ | 182,496 | \$ | 311,646 | \$ | 129,150 |
| 20,000 | 50 | Yes | 336 | \$ | 386,152 | \$ | 1,017,864 | \$ | 92,337 | \$ | 311,646 | \$ | 219,309 |
| 20,000 | 40 | Yes | 440 | \$ | 238,881 | \$ | 1,017,864 | \$ | 67,442 | \$ | 311,646 | \$ | 244,204 |
| 20,000 | 35 | Yes | 528 | \$ | 130,275 | \$ | 1,017,864 | \$ | 46,822 | \$ | 311,646 | \$ | 264,824 |
| 50,000 | 50 | No | 0 | \$ | 3,029,694 | \$ | 2,544,660 | \$ | 456,240 | \$ | 779,116 | \$ | 322,876 |
| 50,000 | 40 | No | 0 | \$ | 3,029,694 | \$ | 2,544,660 | \$ | 456,240 | \$ | 779,116 | \$ | 322,876 |
| 50,000 | 35 | No | 0 | \$ | 3,029,694 | \$ | 2,544,660 | \$ | 456,240 | \$ | 779,116 | \$ | 322,876 |
| 50,000 | 50 | Yes | 336 | \$ | 965,380 | \$ | 2,544,660 | \$ | 230,842 | \$ | 779,116 | \$ | 548,274 |
| 50,000 | 40 | Yes | 440 | \$ | 597,204 | \$ | 2,544,660 | \$ | 168,605 | \$ | 779,116 | \$ | 610,511 |
| 50,000 | 35 | Yes | 528 | \$ | 325,687 | \$ | 2,544,660 | \$ | 117,056 | \$ | 779,116 | \$ | 662,060 |


| Load Switched to <br> RS 38 (kVA) | Mid-C Price <br> Cap (USD) | Interrupted ? | Hours of <br> Interruption | RS 38 Revenue | RS 31 Revenue | Monthly RS 38 <br> Margin | Monthly RS 31 <br> Margin |  |
| ---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 5,000 | $\$$ | 60.02 | No | 0 | $\$$ | 199,309 | $\$$ | 254,466 |
| Variance |  |  |  |  |  |  |  |  |

Table 3-2: July 2022 Results

| Load Switched to RS 38 (kVA) | Mid-C Price Cap (USD) |  | Interrupted? | Hours of Interruption | RS 38 Revenue |  | RS 31 Revenue |  | Monthly RS 38 <br> Margin |  | Monthly RS 31 Margin |  | Margin Variance |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 5,000 | \$ | 58.48 | No | 0 | \$ | 302,969 | \$ | 254,466 | \$ | 45,624 | \$ | 77,912 | \$ | 32,288 |
| 5,000 | \$ | 58.48 | Yes | 320 | \$ | 103,308 | \$ | 254,466 | \$ | 24,072 | \$ | 77,912 | \$ | 53,839 |
| 10,000 | \$ | 58.48 | No | 0 | \$ | 605,939 | \$ | 508,932 | \$ | 91,248 | \$ | 155,823 | \$ | 64,575 |
| 10,000 | \$ | 58.48 | Yes | 320 | \$ | 206,617 | \$ | 508,932 | \$ | 48,145 | \$ | 155,823 | \$ | 107,678 |
| 20,000 | \$ | 58.48 | No | 0 | \$ | 1,211,877 | \$ | 1,017,864 | \$ | 182,496 | \$ | 311,646 | \$ | 129,150 |
| 20,000 | \$ | 58.48 | Yes | 320 | \$ | 413,233 | \$ | 1,017,864 | \$ | 96,290 | \$ | 311,646 | \$ | 215,356 |
| 50,000 | \$ | 58.48 | No | 0 | \$ | 3,029,694 | \$ | 2,544,660 | \$ | 456,240 | \$ | 779,116 | \$ | 322,876 |
| 50,000 | \$ | 58.48 | Yes | 320 | \$ | 1,033,084 | \$ | 2,544,660 | \$ | 240,725 | \$ | 779,116 | \$ | 538,391 |


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10.4 Please provide an example in a similar format to Table 3-1 and Table 3-2 that demonstrates the break-even Mid-C price for which the average RS 30 and the average RS 31 customer would be financially indifferent to receiving service under RS 38, with all other assumptions (e.g. load) remaining the same and excluding considerations for interconnection costs. Please provide the analysis in an Excel spreadsheet containing all input assumptions and calculations.

## Response:

The Mid-C price at which a Customer would be indifferent to taking service on RS 31 or RS 38 can only be provided for a single hour (or as a single monthly average) and not in the format of Tables 3-1 and 3-2 since these tables are produced using hourly on-peak and off-peak pricing. It is not reasonable to assume that the Mid-C price will be the same in all hours.

The response can best be provided using the same format as in the response to Question 5 in the Supplemental Information. It can be seen below that for March 2022, an all-hours average of the Mid-C price that would produce the same bill under RS 31 and RS 38 would have been $\$ 45.22$ USD while the Mid-C price that would produce the same bill under RS 30 (at an appropriate 4,000 kVA load) and RS 38 would have been $\$ 48.97$ USD. These values will, however, change with the exchange rate. Please refer to Attachment 10.4 for the Excel models.

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Table 1: RS 31 Break-even USD Mid-C Price.


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Table 2: RS 30 Break-even USD Mid-C Price.

10.4.1 With references to the historical Mid-C market price in the last three years and the response to the preceding IR, please comment on the attractiveness for a customer to receive service under RS 38 compared to RS 30 and/or RS 31.

## Response:

As can be seen in the response to BCUC IR1 10.3, the attractiveness in simply economic terms varies with the relationship between the Mid-C Price Cap and the level of Mid-C prices. However, FBC is of the view that since the Mid-C price will vary over time, and FBC expects to offer RS 38 as a permanent rate, the decision to implement the rate should not hinge on the state of the market at any given time.

It is also important to consider that the option for Customers is not limited to taking service on either RS 30/31 or RS 38. Since a key driver for RS 38 is the ability of a Customer to take service where capacity may not be available for firm service under RS 30/31, the choice facing the Customer may be to take service under RS 38 or not at all.

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FBC is averse to telling a Customer that wishes to take service that it cannot do so under any terms, and RS 38 provides an option where none might otherwise exist.

## C. CLEAN MARKET ADDER

### 11.0 Reference: RATE FEATURES

Exhibit B-1, Section 3.2, pp. 9-11; FBC 2021 Long-Term Electric Resource Plan (FBC 2021 LTERP) and Long-Term Demand-Side Management Plan (FBC 2021 LT DSM Plan) (FBC LTERP 2021 Proceeding), Exhibit B-27, IR 6.3-6.4 ${ }^{5}$

Energy Rate - Clean Market Adder Jurisdiction
On page 9 of the Application, FBC states that "depending on whether the BCUC approves a related request contained in the Company's LTERP, a Clean Market Adder [CMA] may also be billed."

On page 10 of the Application, FBC states that "The CMA is currently $\$ 0.0 / \mathrm{kWh}$ and will be adjusted based on applicable BCUC determinations."

On page 11 of the Application, FBC states:
[...] A description of the CMA and its underlying assumptions and rationale is contained in the LTERP filed with the BCUC. At the date of filing this Application, FBC has not received a decision from the BCUC regarding the LTERP. Once a BCUC decision has been received, the LCIR will be updated to either remove the CMA or update the amount of the CMA in accordance with BCUC direction. If the CMA is accepted as part of the LTERP process, but not incorporated in the LCIR, then FBC could not cover any premium to buy clean power. [Footnote omitted]

In response to Panel IR 6.3 filed as Exhibit B-27 in the FBC LTERP 2021 Proceeding, FBC stated:

If the BCUC accepts the LTERP, including the concept of a Clean Market Adder, then FBC would negotiate for the inclusion of clean market purchases in a new or existing agreement, which would then be subject to BCUC acceptance under section 71 of the UCA.

In response to Panel IR 6.4 under the FBC LTERP 2021 Proceeding, FBC stated:
The ultimate cost of the Clean Market Adder would be a point of negotiation between FBC and Powerex and submitted to the BCUC for review and acceptance under section 71 of the UCA [Utilities Commission Act]. [...] FBC recognizes that the negotiated value of a Clean Market Adder could vary over time and a mutually agreeable price will depend on market dynamics. [...] For clarity, FBC does not intend to ensure that all market purchases qualify as clean on an operational basis, but rather only when it is reasonable to do so.

5 Retrieved on September 12, 2022 from:
https://docs.bcuc.com/Documents/Proceedings/2022/DOC 67356 B-27-FBC-Response-BCUC-Panel-IR2.pdf
11.1 Please confirm that FBC is requesting approval of a CMA of $\$ 0.00 / \mathrm{kWh}$ as part of the proposed RS 38 under sections 59-60 of the UCA within this Application.
> 11.1.1 If confirmed, assuming the final decision regarding the FBC 2021 LTERP accepts the concept of a CMA, please discuss what change(s), if any, would FBC make to the proposed CMA of $\$ 0.00 / \mathrm{kWh}$ within this Application.
> 11.1.2 If not confirmed, please specify FBC's approval sought regarding the CMA within this Application.

## Response:

FBC is not seeking a CMA value of $\$ 0.00 / \mathrm{kWh}$ as part of this Application. Once the concept of a CMA is accepted by the BCUC in the LTERP, then a CMA will be calculated and filed with the BCUC after negotiation with Powerex. FBC is seeking, as part of the overall approval of RS 38, the inclusion of the CMA placeholder.

FBC is seeking approval of the provision to include a CMA if accepted as part of the LTERP, with the value to be reflected in the RS 38 Energy Charge at the time the value is known. This may require a separate filing to update the value after the conclusion of the CMA acceptance process as discussed in the response to BCUC IR1 11.2 below.
11.2 Please discuss how FBC proposes to update the CMA for RS 38 in the future, including the update frequency, methodology (such as benchmarking or reference to specific negotiated contracts), BCUC approval/acceptance required, and under which section(s) of the UCA would the BCUC review be conducted. Please elaborate on the sequence of all applicable filings and BCUC acceptance/approvals required.

## Response:

FBC expects that with the acceptance of the CMA within the LTERP process, and approval as part of RS 38 for the inclusion of the CMA as part of the RS 38 Energy Charge, the CMA linkage between the two would be established. The BCUC will have a further ability to review and approve the specifics of the CMA during its review of the power supply agreement between FBC and Powerex pursuant to section 71 of the UCA. Following this, FBC would be required to file an update to the RS 38 tariff sheets specifying the value of the CMA, and at any time the level of the CMA changed as a result of negotiation between FBC and Powerex and the resulting section 71 filing.

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11.3 If the concept of the CMA were not accepted in the FBC 2021 LTERP, please confirm whether FBC would source clean energy for RS 38 customers.

## Response:

If the CMA is not accepted in the FBC 2021 LTERP, FBC will not attempt to change its current practice when buying energy from Powerex. The current situation is outlined in Section 6.4 of the CEPSA agreement with Powerex and it states, "...Powerex does not represent or warrant that the energy is generated or derived from any particular source or kind of generation, or has any particular emissions factor attributed to it. Powerex will not intentionally deliver energy generated from coal or other high carbon products to FortisBC in a proportion that is substantially different from the proportion of energy generated from coal or other high carbon products in the overall mix of energy, excluding deliveries of Canadian Entitlement under the Columbia River Treaty, that Powerex delivers to B.C. Hydro."
11.3.1 Please discuss any effect a hypothetical rejection of the concept of the CMA in the FBC 2021 LTERP would have on what FBC is proposing regarding the CMA within this Application.

## Response:

If the concept of the CMA is rejected in the FBC 2021 LTERP, then the CMA would remain at zero for RS 38 or could subsequently be removed from the rate schedule altogether.
11.4 In consideration that FBC's approval sought regarding the CMA within this Application is contingent on the final decision regarding the FBC 2021 LTERP, please explain how the timing of the 2021 LTERP decision issuance could impact the review of this Application, including the regulatory process, timing, and final order issuance.

## Response:

Depending on the timing of the Decisions in the LCIR and LTERP processes FBC anticipates one of the following scenarios will unfold:

- If the LTERP Decision is issued first and does not include acceptance of the CMA, the RS 38 tariff page finalized in this process would not include the CMA;

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- If the LTERP Decision is issued first and includes acceptance of the CMA, FBC would still need to file for approval of the CMA value it negotiates. Once both of these have occurred, the RS 38tariff page would be finalized with the CMA value accepted by the BCUC;
- If the Decision is issued in this process prior to a Decision in the LTERP or the subsequent acceptance by the BCUC of the value of the CMA, and the provision for the LTERP related CMA is accepted, then a value of $\$ 0.00$ will be included in RS 38 until such time as new RS 38 tariff pages are filed; or
- If the Decision is issued in this process prior to a Decision in the LTERP, and the provision for the LTERP related CMA is not accepted, the RS 38 tariff page finalized in this process would not include the CMA.
11.5 Please explain whether FBC plans to introduce a CMA to other existing FBC rate schedules. If yes, please discuss how such a process would occur, how the amount for the CMA will be determined, and for which rate schedule(s). If no, please discuss why not.
11.5.1 If the process and methodology to establish a CMA for other rate schedules as described above differs from that anticipated for RS 38, please elaborate on why.


## Response:

FBC has no plans to introduce the CMA to other rate schedules at this time.
11.6 Please explain why "FBC could not cover any premium to buy clean power" if the CMA is accepted as part of the LTERP process, but not incorporated in the LCIR. Specifically, please discuss whether there are other means of cost recovery, including in FBC's revenue requirements, assuming the energy purchase agreements containing the CMA is accepted under section 71 of the UCA.

## Response:

FBC expects that CMA costs will generally be recovered in rates as part of power purchase expense. However, if the LCIR does not incorporate the CMA, then any CMA costs incurred to supply the interruptible load will not be recovered from RS 38 Customers, but from other Customers through the existing rates.

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1 FBC does not believe this is equitable and it is in that context that FBC stated that if the CMA is

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### 12.0 Reference: RATE FEATURES

FBC LTERP 2021 Proceeding, Exhibit B-1, Section 2.5.7, p. $80{ }^{6}$, Exhibit B-27, IR 6.1-6.2 ${ }^{7}$

Energy Rate - Clean Market Adder Proposal
On page 80 of the application for the FBC LTERP 2021 Proceeding, FBC states:
A clean market price adder as a proxy for purchasing clean energy is added to the electricity market price forecast and is based on a forecast from I [a third-party market subscription service providing market analysis and long-term market outlook for price forecasts]. The Mid-C market price forecast is based on current and expected supply in the Pacific Northwest, which includes coal and gas resources, and therefore a clean market adder is used to represent the cost of purchasing only clean market power. [...] The clean market price adder is approximately $\$ 2$ per MWh.
12.1 Please provide examples of other rate schedules for North American utilities that have a CMA or similar concept approved and summarize the cost recovery mechanism of the CMA in those jurisdictions.

## Response:

FBC is not aware of a mechanism analogous to the CMA that has been accepted as part of a rate schedule.
12.2 Please provide a breakdown of the components making up the estimated $\$ 2$ per MWh CMA and explain the rationale and basis for all assumptions made.

## Response:

Any CMA premium will be a negotiated number between FBC and Powerex. The rationale and basis for the CMA will be market driven pricing. FBC expects that the only component making up the CMA will be the market premium for clean power. FBC is not able to provide further guidance at this time.

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In response to Panel IR 6.1 under the FBC LTERP 2021 Proceeding, FBC stated:
At the current time, FBC cannot determine whether the form of such a provision would be a specific amount or a formulaic determination. When FBC files the agreement with Powerex, the BCUC would have the opportunity to review the amount, cost and other aspects of any Clean Market Adder.
12.3 Given the uncertainties around the CMA, please comment on how it aligns with the Bonbright Principles regarding customer understanding and acceptance, rate stability, and revenue stability.

## Response:

For clarity, the referenced "Criteria of a Sound Rate Structure" as characterized by Bonbright ${ }^{8}$ are:

1. The related "practical" attributes of simplicity, understanding, public acceptability, and feasibility of application;
2. Revenue stability from year to year; and
3. Stability of the rates themselves, with a minimum of unexpected changes seriously adverse to existing Customers.

FBC does not view the CMA as violating any of these criteria. The CMA would be a value published as part of the RS 38 tariff, that would be updated periodically, but infrequently, which would not impact its nature as a simple structure or inhibit understanding. The RS 38 rate itself is entirely voluntary and likely to only be used by large, sophisticated customers.

FBC does not expect that any variation in the amount of revenue that is attributable to the CMA from year to year will be material or problematic in any way to the operation of the utility.

Likewise, the magnitude of the CMA, or changes to its level, should not be considered either unexpected or likely to be seriously adverse to customers.
12.4 Given that the Mid-C Price Cap is designed to protect customers from price spikes, please discuss whether the Mid-C Price Cap should be set after accounting for the CMA or not. Please explain why or why not.

[^5]
## Response:

The view of FBC is that in the event that a Customer seeks to take service under RS 38 prior to the level of the CMA being known, it would not be necessary to wait to set the Mid-C Price Cap. Prior to the CMA being finalized, it will be set at $\$ 0.00 / \mathrm{kWh}$, and Mid-C Price Cap nominations are done monthly. Effectively, this means that there could only be a period of one month where a Customer may be exposed to an unknown CMA level, and in this circumstance FBC could work with the Customer to manage exposure to unwanted price situations.

In response to Panel IR 6.2 under the FBC LTERP 2021 Proceeding, FBC stated that " $[w]$ ith regard to the LCIR, the key aspect is that there is a provision to include a Clean Market Adder when and if power purchases made by FBC were to include such a consideration."
12.5 Please confirm whether FBC has consulted customers regarding price uncertainty arising from the CMA. If yes, please provide details of the consultations. If no, please explain why not.

## Response:

Discussion of the CMA was included in the customer engagement that preceded the filing of the Application; however, FBC does not view the CMA as representing price uncertainty (since it will be a published component of the Energy Charge) and did not therefore discuss price uncertainty as an aspect of the component. FBC did discuss the need and suggested level of the CMA and uncertainty was not raised as an issue by participants.
12.6 Please confirm, or explain otherwise, that the CMA is only applicable to clean market power and is not applicable to non-clean or untagged market power.
12.6.1 If confirmed, please discuss (i) how FBC proposes to monitor and bill customers for the appropriate mix of clean/non-clean energy that is delivered to them under RS 38 and (ii) how the proposed RS 38 ensures the CMA is only applicable to clean energy.
12.6.2 Please quantify any additional administrative costs to FBC regarding this billing process, and explain the methodology and assumptions used for this cost estimate.

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## Response:

Confirmed, the CMA is only applicable to clean market power and is not applicable to non-clean or untagged market power. If clean market power is not available, but FBC purchases market power anyway, then FBC expects that the CMA would not apply.

The Energy Charge under RS 38 is calculated for each hour according to the formula contained in the rate schedule:

Hourly Energy Charge $=($ Energy Taken $(k W . h) \times(1+$ loss rate \% $)$ ) $\times($ applicable Mid-C Price + $0.0100+$ CMA)

In the event that power delivered to an RS 38 Customer was not from a purchase to which the CMA applies, the CMA charge in the formula above would be zero.

As part of its existing process, FBC records every market transaction in sufficient detail that FBC expects that flagging each transaction as subject to the CMA or not can be accomplished as part of this existing process.

As part of this process, FBC expects to create a summary of the transactions that apply to each RS 38 Customer, including a record of hours that are subject to the CMA. This is very similar to work that FBC already does and so the additional effort will be minimal. At the end of the month, this information will be passed to FBC's Billing department to create the customer bill.

FBC acknowledges that, however minimal, there will be incremental work required by FBC to administer RS 38. However, as explained in the Application in Section 3.2.1.2.1, part of the justification for the Hourly Service Adder of $\$ .01$ per kWh is to cover the charges that would result if the power were transmitted under Retail Access. The incremental work required under RS 38 is very similar to that which would be needed under Retail Access and recovered under RS103 Scheduling, System Control and Dispatch Service.

## D. TRANSMISSION CHARGES

### 13.0 Reference: TRANSMISSION CHARGES

Exhibit B-1, p. 1; Appendix C - Consultation Materials, "LCIR Consultation Q\&A July - Final"

Acquisition of Power to Serve RS 38 Customers
On page 1 of the Application, FBC states:
[...] The LCIR will provide non-firm, interruptible service under a set of certain defined circumstances, and be priced in relation to the hourly level of the Intercontinental Exchange (ICE) Day Ahead Mid-Columbia (Mid-C) Index. [...]

On page 3 of the "LCIR Consultation Q\&A July - Final" document in Appendix $C$ to the Application, with respect to a consultation session question, "Where will the power come from to serve the interruptible load?", FBC provides the following response:

On an incremental basis, FBC expects the required power to be purchased in some manner-either from BC Hydro [British Columbia Hydro and Power Authority] or the market. FBC does not envision acquiring new long term resources to meet this load.
13.1 Please provide a detailed explanation of how FBC proposes to purchase power, or otherwise supply power, to meet the incremental demand of RS 38 customers. Please include a forecasted breakdown of anticipated power purchases from the market, power purchases from BC Hydro, and power sourced otherwise. If such a breakdown is not available, please discuss the circumstances that would dictate where FBC would acquire power to serve RS 38 customers.

## Response:

FBC anticipates that the primary resource for the required power to meet RS 38 Customers will come from the market as day ahead purchases under section 6.7, Target Price NominationsEnergy Blocks, of the CEPSA agreement with Powerex. However, FBC reserves the right to optimize the overall value of its power supply portfolio, which under certain circumstances could result in power coming from other sources such as the BC Hydro PPA or from FBC energy storage combined with surplus capacity.
13.1.1 If FBC is not planning to directly meet RS 38 customer demand exclusively with market power, please explain the basis for pricing RS 38 in relation to the day ahead Mid-C Index.

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## Response:

RS 38 is a market-based rate, but not a strict flow-through of market prices at any given time due to the price cap. As described in Section 2.4 of the Application, one of the drivers for RS 38 is to provide an alternative to retail access. It is appropriate that the LCIR Customer be exposed to market rates up to a selected price cap as this matches the situation they would face under retail access. The source of the power FBC uses to supply the LCIR Customer is not a factor in a market-based rate.
13.1.2 Please provide a detailed explanation of any possible instances where the cost of power delivered to RS 38 customers may vary from the day ahead Mid-C Index.

## Response:

Although FBC cannot guarantee that it has identified all possible instances where the source of power (and therefore the cost) delivered to RS 38 Customers may not be from day ahead Mid-C Index purchases, FBC anticipates that there are three possible alternate sources of power:

1. The BC Hydro Power Purchase Agreement If FBC has room under its nomination to take additional PPA power and the risk of the market price being below the PPA rate was close to zero, then FBC would consider scheduling the power from the PPA rather than from the market;
2. FBC resources or long-term commitments. While this is not likely under the current FBC load resource balance, it is still possible that a situation may occur where FBC cannot make effective use of its long-term resources. In the extremely unlikely event that this were to occur, FBC would plan to use its own resources to meet RS 38 load. The chances of this occurring become much higher if FBC obtains significant new resources or longterm contracts; and
3. FBC surplus capacity resources combined with surplus energy in storage. If the market price of power goes very low, there is no risk to FBC storing as much power as possible for later use when market prices are much higher. If FBC cannot make effective use of this stored power to meet existing rate schedule load, then FBC would instead seek to use it to meet RS 38 load, if possible.
13.1.2.1 Please confirm, or explain otherwise, that FBC's other ratepayers would bear the risk of any variances between the

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cost of power delivered to RS 38 customers, and the Mid-C Index.

## Response:

Confirmed; however, as discussed in the response to BCUC IR1 13.1.2, the potential risks and benefits from RS 38 to other FBC ratepayers are not symmetrical. Other ratepayers will benefit where FBC is able to resource power from sources other than the market, at a cost lower than the market or the Customers' Mid-C Price Cap, while charging either the market rate or Mid-C Price Cap rate to RS 38 Customers. However, other ratepayers are protected from the circumstance where the market is high since FBC has the ability to interrupt the RS 38 Customer at any time the market price is above the Mid-C Price Cap.

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### 14.0 Reference: TRANSMISSION CHARGES

## Exhibit B-1, pp. 5-6; FBC LTERP 2021 Proceeding, Exhibit B-1, pp. 118, 180

Retail Access
On page 5 of the Application, FBC quotes the following passage from Section 7 of Direction No. 8 to the BCUC:

Except on application by the [BC Hydro and Power] authority, the commission must not set rates for the authority that would result in the direct or indirect provision of unbundled transmission services to retail customers in British Columbia [BC], or to those who supply such customers.

On page 6 of the Application, FBC provides the following excerpt from the BCUC's Indigenous Utilities Regulation Inquiry Final Report:

We [the BCUC] therefore interpret Direction 8 to preclude the use of BC Hydro's transmission system to wheel electricity to any customer who will directly consume that electricity in British Columbia whether it is a customer of BC Hydro or another public utility.

Further, on page 6 of the Application, FBC states:
Since power originating from outside of the FBC service area cannot practicably be delivered to a load within the FBC service area without the use of the BC Hydro system, Retail Access is effectively unavailable to FBC customers, despite FBC having the BCUC-approved rate schedules intended to support the practice.

On page 118 of the application for the FBC LTERP 2021 Proceeding , FBC stated:
FBC access to the market is mainly through its transmission rights on the Teck [Metals Ltd.]-owned 71 Line, which provides transmission from across the BC/US border to the FBC system.
[...]
FBC retains access to the wholesale market on Teck's 71 Line for a 20-year period at minimum, as discussed in Section 2.4.4, and comparable market access afterwards is assumed for the planning period.

On page 180 of the application for the FBC LTERP 2021 Proceeding, FBC stated:
FBC is able to import electricity from the Mid-C market via transmission connected to the Waneta plant ( 71 Line) as well as through the BC Hydro transmission system.
14.1 Please confirm, or explain otherwise, that large commercial customers are considered retail customers.

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## Response:

Confirmed.
14.2 Please confirm, or explain otherwise, that power originating from the US can be delivered to a load within the FBC service area via Teck's 71 Line.
14.2.1 If confirmed, please explain whether imports via 71 Line require use of the BC Hydro system. Please also explain why retail access is not available to FBC's retail customers by importing market power via 71 Line.

## Response:

FBC confirms that FBC is able to import power originating from the US via Teck's 71 Line. These imports physically require the use of BC Hydro's system but contractually under the CPA they do not and FBC does not pay any BC Hydro wheeling charges to import over 71 Line. However, FBC Customers cannot use retail access by importing power over 71 Line since they do not have access to 71 Line transmission. 71 Line access is only available to FBC, not its Customers.
14.3 Please explain whether FBC anticipates market power required to serve RS 38 customers would be wheeled to the FBC system via 71 Line, via BC Hydro's system, a combination of both systems, or otherwise. If possible, please provide an estimated breakdown.

## Response:

FBC anticipates that all market power required to serve RS 38 Customers will be wheeled to the FBC system via 71 Line. FBC has clarified this aspect of RS 38 service by the addition of the 71 Line descriptor to item d of the Reasons for Interruption in the amended RS 38 Rate Schedule provided as Attachment 25.1 to BCUC IR1 25.1.
14.4 If FBC anticipates importing market power for delivery to RS 38 customers, and that such power may be wheeled over BC Hydro's system, please confirm, or

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explain otherwise, that FBC (or a third party acting on behalf of FBC) would be required to pay transmission charges to BC Hydro.

## Response:

Please refer to the response to BCUC IR1 14.3.
14.5 Please provide a further explanation of whether the proposed rate structure of the LCIR may result in the "indirect provision of unbundled transmission services to retail customers in BC, or to those who supply such customers".

## Response:

The proposed rate structure of the LCIR will not result in the "indirect provision of unbundled transmission services to retail customers in BC..." The LCIR does not provide a means for FBC Customers to acquire power from a third party and to purchase transmission services from FBC as governed by rate schedules 101 through 109 in order to deliver that power to the customer's site (which would be unbundled service). There is no unbundled transmission service involved. Power delivered to LCIR Customers, regardless of the source, will first be acquired by FBC and then delivered to the Customer at the rates described in RS 38.
14.5.1 Please discuss whether FBC considers there is any distinction with relation to the applicability of section 7 of Direction No. 8 in the following scenarios:
(i) FBC (and/or a third party on behalf of FBC) purchases market power, arranges wheeling services, including services on BC Hydro's transmission system, and delivers the power to a retail customer; and
(ii) A retail customer in FBC's service territory (and/or a third party acting on behalf of the retail customer) purchases market power and arranges wheeling services, including services on BC Hydro's transmission system for delivery of the power to the retail customer.

## Response:

FBC considers that there is a distinction with relation to the applicability of section 7 of Direction No. 8 in the scenarios provided.

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1 Scenario (ii) is clearly an example of retail access while scenario (i) describes a common means of acquiring and delivering power to end-use customers employed by utilities in the normal course business and is not retail access. The most basic distinction is that in scenario (ii) the end-use customer has an active role in arranging for commodity supply and the provision of delivery services, while in scenario (i) the end-use customer is taking service under a fully bundled tariff rate appropriate for its service characteristics. Therefore, section 7 of Direction No. 8 does not apply to scenario (i).

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### 15.0 Reference: TRANSMISSON CHARGES

Exhibit B-1, p. 10; Appendix C - Consultation Materials, "LCIR Consultation Q\&A July - Final"; Exhibit B-2, p. 11; FBC LTERP 2021 Proceeding, Exhibit B-1, p. 118; FBC Electric Tariff ${ }^{9}$;BC Hydro Open Access Transmission Tariff, Schedule 01; BC Hydro Open Access Transmission Tariff Business Practice Posting of Transmission Service Offerings, p. 6; RS 101 - Long-Term and Short-Term Firm Point-to-Point Transmission Service; ${ }^{10}$ RS 102 - Non-Firm Point-toPoint Transmission Service; ${ }^{11}$ RS 103 - Scheduling, System Control and Dispatch Service; ${ }^{12}$ RS 104 - Reactive Supply and Voltage Control From Generation Sources Services ${ }^{13}$

Calculation of Hourly Service Adder
On page 10 of the Application, FBC states:

> The Hourly Transmission Charge Adder is intended to acknowledge that power purchased under the Interruptible Rate program requires transmission to the point of delivery with the interruptible customer. It is not set to exactly equate to the charges that would result if the power were transmitted under Retail Access, but will cover the transmission costs, grossed up to provide a moderate additional benefit for non-participating customers. The Hourly Transmission Charge Adder will be subject to any general rate adjustment that flows from future rate setting processes.

On page 3 of the "LCIR Consultation Q\&A July - Final" document in Appendix $C$ to the Application, with respect to a consultation session question, "Where will the power come from to serve the interruptible load?", FBC provides the following response:

On an incremental basis, FBC expects the required power to be purchased in some manner-either from BC Hydro or the market. FBC does not envision acquiring new long term resources to meet this load.

On page 11 of the Supplemental Information, FBC states:
FBC believes that the Hourly Service Adder of $\$ .01 /$ kilowatt-hour is reasonable given the service that is being provided. At a minimum, the charge should be no less than the \$.00792/kilowatt-hour charge (excluding losses) under FBC's wholesale wheeling tariff if retail access service was available and being taken; however, this service is much more complex and involved than providing service

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under retail access as FBC is responsible for sourcing the power and making all arrangements for power to be delivered to the FBC service area. FBC believes that the proposed cost is likely less than what the total costs (that is, the costs not limited to those associated with FBC) for supply and delivery would be for a retail access Customer.

FBC's Electric Tariff includes RS 101 (Long-Term and Short-Term Firm Point-To-Point Transmission Service) and RS 102 (Non-Firm Point-To-Point Transmission Service). Both RS 101 and 102 outline a minimum charge of $\$ 0.002$ per kW per Hour, and a maximum hourly charge for transmission of $\$ 0.0064$ per kW of Reserved Capacity Demand.

Additionally, both RS 103 (Scheduling, System Control And Dispatch Service) and RS 104 (Reactive Supply and Voltage Control from Generation Sources Services) include the following term:

The Transmission Customer must purchase this Service if taking supply under Rate Schedules 100, 101, and 102.

On page 118 of Exhibit B-1 to the FBC LTERP 2021 Proceeding, FBC stated:
Also, additional US transmission is required to access the Mid-C trading hub, which is located along the Columbia River on the border between Washington and Oregon.
15.1 Please explain whether FBC's "wholesale wheeling tariff" has the same meaning as FBC's RS 101 or 102, plus the applicable charges in RS 103 and 104.
15.1.1 If yes, please explain any differences in the charge of $\$ .00792 / \mathrm{kilowatt-}$ hour charge stated by FBC in the Supplemental Information and the charges outlined in RS 101 or 102, plus RS 103 and 104.
15.1.2 If yes, please also provide a brief explanation of the circumstances where the minimum and maximum charges in RS 101 and 102 are applied, and which level of charges (minimum, maximum or other) FBC assumes in the $\$ .00792 /$ kilowatt-hour value.

## Response:

FBC generally refers to all of the individual rate schedules from RS 100 - RS 109 as the wholesale wheeling tariff as these are rates that have been set in order to administer the services described in the Open Access Transmission Tariff (Tariff Supplement No. 7).

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> 15.2 Please provide an overview of how the charge of $\$ .00792 /$ kilowatt-hour charge for the "wholesale wheeling tariff" is calculated, including a breakdown of the costs it is intended to recover.

## Response:

FBC provides the following additional information on the Hourly Service Adder, which was termed the "Hourly Transmission Charge Adder" as part of the initial LCIR public engagement. Hourly Transmission Charge Adder was the working term used during public engagement, but it was an oversight that the term remained in Section 3.2.1.2.1 of the Application. From the onset of developing the LCIR, FBC recognized that an incremental charge would be required as part of the rate in consideration of factors such as transmission charges that may occur when power used to supply LCIR Customers was sourced from the market, additional administration, and the inclusion of a broader ratepayer benefit, all while not being set at a level that would discourage participation in the program. The $\$ 0.10$ / kWh figure was put forward as a reasonable number in consideration of these factors and was set using FBC's experience and judgement rather than being derived quantitatively. However, during consultation it became evident that terming it the Hourly Transmission Charge Adder placed an unintended emphasis on the Transmission-related factor and prompted inquiries into, and requests for direct comparisons to actual transmissionrelated charges and derivation - a trend continued through this Information Request process. FBC adopted the more generic term, Hourly Service Adder, in recognition that the charge was intended to be a bundled proxy for a number of considerations, but not explicitly based or derived from any specific set of cost references.

As part of the Supplemental Information FBC provided its opinion that at a minimum, the charge should be no less than the charges that would occur under FBC's wholesale wheeling tariff if retail access service was available and being taken. This was expanded upon by the inclusion of the $\$ .00792 / k i l o w a t t-h o u r ~ c h a r g e ~ a s ~ a ~ c o m p a r a t o r . ~$

With this context as background, FBC provides the derivation of the $\$ .00792 /$ kilowatt-hour (\$7.92/MWh) charge below.

FBC's current rate schedules are as follows.

| FBC Rate Schedule | Description | Unit Cost (MWh) | $\%$ of Load |  |
| ---: | ---: | ---: | ---: | ---: |
| 101 | Long/Short Term PTP (Monthly Transmission Rate) | $\$$ | 4,570 |  |
| 103 | Scheduling, System Control Dispatch (Monthly Rate) | $\$$ | 182.202 |  |
| 104 | Reactive Supply/Voltage Control (per MW/h) | $\$$ | 0.899 |  |
| 107 | Operating Reserve - Spinning (per MW/h) | $\$$ | 10.15 | $2.5 \%$ |
| 108 | Operating Reserve - Supplemental (per MW/h) | $\$$ | 10.15 | $2.5 \%$ |

The following calculation is estimated using the rate schedules detailed above and assumes a flat 10 MW load over the course of the year, although the result is not dependent on the MW level selected.

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| FBC Rate Schedule | Estimated Annual Cost Based on 10 MW Flat Load | Total Annual Cost |
| ---: | ---: | ---: | ---: |
| 101 | $10 \mathrm{MW} \times 12$ months $\times \$ 4570=\$$ | 548,400 |
| 103 | $10 \mathrm{MW} \times 12$ months $\times \$ 182.202=\$$ | $21,864.24$ |
| 104 | $10 \mathrm{MW} \times 8760$ hours $\times \$ 0.899=\$$ | $78,752.40$ |
| 107 | $10 \mathrm{MW} \times 8760$ hours $\times \$ 10.15 \times 2.5 \%=\$$ | $22,228.50$ |
| 108 | $10 \mathrm{MW} \times 8760$ hours $\times \$ 10.15 \times 2.5 \%=\$$ | $22,228.50$ |
|  | Total Annual Cost $=\$$ | 693,474 |
|  |  |  |

15.3 Please provide an explanation of how FBC developed the value of $\$ .01 / \mathrm{kilowatt-}$ hour for the Hourly Service Adder. Please discuss any alternative options considered, and why these were rejected.

## Response:

The information included on page 11 of the Supplemental Information is the full explanation of the $\$ .01 / k i l o w a t t-h o u r ~ a m o u n t ~ f o r ~ t h e ~ H o u r l y ~ S e r v i c e ~ A d d e r . ~ T h i s ~ v a l u e ~ w a s ~ n o t ~ " d e v e l o p e d " ; ~ i t ~ w a s ~$ set at an increment above the $\$ .00792 /$ kilowatt-hour charge, considered to be reasonable and to not discourage participation. This level of the Hourly Service Adder was the only one presented, appearing in the initial consultation materials, and no other value was considered.
15.3.1 Please further explain why FBC considers the charge of
 charge that should be applicable for the Hourly Service Adder.

## Response:

The proposed LCIR is a new FBC service for which there is no established basis to set a rate. However, much of the work involved as well as the overall impact to the system is similar to established rates for retail access. Therefore, FBC believes the charges that would be paid by a Customer under retail access provide guidance as to the appropriate minimum level of the Hourly Service Adder in the LCIR charges, but as explained in the response to BCUC IR1 15.2, the provision of transmission service is not the only component.

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15.3.2 Please discuss the basis for the incremental charges associated with the Hourly Service Adder compared to the charge of \$.00792/kilowatt-hour for the "wholesale wheeling tariff".

## Response:

Please refer to the response to BCUC IR1 15.2.
15.4 Please confirm, or explain otherwise, that "arrangements for power to be delivered to the FBC service area" include the following:
(i) Transmission service costs to wheel market power from the Mid-C hub to the BC/US border; and
(ii) Transmission service costs to wheel market power from the BC/US border to the FBC system, via 71 Line and/or BC Hydro's transmission system.
15.4.1 If confirmed, please provide a detailed breakdown of the forecasted wheeling costs associated with the delivery of market power to FBC's service area. Please include information to show any variations in such costs (where applicable) by season, time of day, and type of transmission service (e.g. firm/non-firm, short-term/long-term).
15.4.1.1 Please discuss whether FBC anticipates any changes in such costs in the next five years. If yes, please discuss whether the proposed rates under RS 38 accounts for these anticipated changes in costs, and if so, please explain how.

## Response:

A portion of this response is redacted and is being filed on a confidential basis, pursuant to Section 19 of the BCUC's Rules of Practice and Procedure regarding confidential documents as set out in Order G-178-22, as it contains commercially sensitive information. The information is of a commercially sensitive nature and significant harm or prejudice to FBC's competitive or negotiating position is reasonably expected to result if the confidential information was made public.

Confirmed. For each HLH the additional charge is and for each LLH the additional charge is to move the power from the Mid-C hub to the BC/US border and for all hours $\$ 1.08$ over 71 Line from the border to the FBC system. FBC does not anticipate that BC Hydro wheeling would be used to move power from the border to the FBC system as FBC expects to interrupt service due to lack of availability on 71 Line except in those circumstances where FBC is maintaining service from other resources as described in the response to BCUC IR1 13.1.2. The 71 Line associated wheeling costs are expected to rise by 2 percent per year.
15.5 Please discuss whether there are any other direct incremental costs, besides the wheeling charges identified above, associated with the delivery of market power to the FBC service area. If yes, please provide a detailed breakdown of the anticipated costs, and information to illustrate how costs may vary depending upon the circumstances of the purchase of market power.

## Response:

For any power delivered to the Okanagan, there may be an additional 5 percent loss charge deliverable to BC Hydro as both energy and capacity in order to wheel the power from the Kootenays to the Okanagan under the Amended and Restated Wheeling Agreement (ARWA). This loss percentage is not expected to change. This charge only occurs if ARWA wheeling is being used, which most commonly occurs during the day in the Okanagan area. The cost of the 5 percent losses (if they occur at all) is variable depending on the FBC resources used to deliver the losses to BC Hydro. This loss return is done on an hourly basis so the resource used to deliver the losses is not fixed for the day. Therefore, the cost of the losses is related to the FBC hourly incremental cost, which on average is expected to be much less than the Mid-C day ahead index price.

This makes it hard to calculate a representative cost for these losses since for any hour it is not known if they will even occur or if they do, what the appropriate FBC incremental cost is for that hour. However, assuming they occur and the incremental cost is approximately at the PPA rate of about $\$ 50$ per MWh, then the cost of 5 percent losses is $\$ 2.50 / \mathrm{MWh}$.

FBC is not aware of any other direct incremental costs.
15.5.1 Please discuss whether FBC anticipates any changes in such costs in the next five years. If yes, please discuss whether the proposed rates under RS 38 accounts for these anticipated changes in costs, and if so, please explain how.

## Response:

FBC does not anticipate a change in the ARWA loss rate of 5 percent. As noted in the response to BCUC IR1 15.5, FBC does not anticipate any other direct incremental costs.

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15.5.2 Please describe any other activities associated with the delivery of market power to the FBC service area where FBC may not incur direct costs.

## Response:

The only other costs are administrative in nature as described in the response to BCUC IR1 7.1.
15.6 Based upon the responses to the Irs 15.4.1 and 15.5, please provide an estimate of the total anticipated costs associated with the delivery of market power to the FBC service area for RS 38 customers. If a point estimate is not possible, please provide a cost range, with a description of supporting assumptions.

## Response:

A portion of this response is redacted and is being filed on a confidential basis, pursuant to Section 19 of the BCUC's Rules of Practice and Procedure regarding confidential documents as set out in Order G-178-22, as it contains commercially sensitive information. The information is of a commercially sensitive nature and significant harm or prejudice to FBC's competitive or negotiating position is reasonably expected to result if the confidential information was made public.

As described in the responses to BCUC IR1 15.4.1 and 15.5, the costs for transmission are potentially quite variable depending on the time of day and the location of the LCIR Customer on the FBC system.

Using the identified costs, the range of costs is per MWh during off-peak hours for a Customer where no ARWA wheeling is required up to $\square$ per MWh during on-peak hours and where ARWA wheeling is required and the assumed cost of ARWA losses is $\$ 2.50$ per MWh. These numbers will grow by about $\$ .02$ per MWh per year based on the expected increased costs of the Teck 71 Line wheeling cost.
15.6.1 Please explain the rationale for any variance between such costs, and the incremental charges associated with the Hourly Service Adder compared to the charges under FBC's wholesale wheeling tariff (i.e. \$.01/kilowatt-hour minus \$.00792/kilowatt-hour = \$.00208/ kilowatthour).
15.6.1.1 Please discuss the relative risks of under-recovering transmission costs from RS 38 customers versus over-

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recovering transmission costs. Please include an explanation of the potential drivers that may result in under-recovery or overrecovery of transmission costs from RS 38 customers.
15.6.1.2 Please discuss the parties (e.g. RS 38 customers, FBC and by extension its other non-RS 38 ratepayers, transmission service provider) which could be financially impacted by the cost variance explained above. For each impacted party, please explain whether a net benefit or a net cost would accrue to the party.

## Response:

Please refer to the response to BCUC IR1 15.2.
15.7 If FBC is contemplating purchasing power from BC Hydro to serve RS 38 customers, please discuss whether there are any incremental costs associated with delivery of power to the FBC system. To the extent such costs are different from those outlined above, please provide a breakdown of such costs.

## Response:

If FBC purchases power from BC Hydro, it would be under the PPA between FBC and BC Hydro. There are no additional costs to deliver the power to the FBC service area.
15.7.1 Please discuss how such costs (if any) are factored into the calculation of the Hourly Service Adder.

## Response:

Please refer to the responses to BCUC IR1 15.2 and 15.7.
15.8 Please provide further support, including a cost comparison, for the statement: "FBC believes that the proposed cost [of the Hourly Service Adder] is likely less than what the total costs (that is, the costs not limited to those associated with FBC) for supply and delivery would be for a retail access customer."

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15.8.1 Assuming this statement is correct, please discuss whether FBC's other ratepayers would be subsidizing costs associated with supply and delivery to RS 38 customers.

## Response:

Please refer to the response to BCUC IR1 15.2.

Schedule 01 of the BC Hydro Open Access Transmission Tariff (OATT) states:
The Reserved Capacity Charge for the Long-Term Firm Service Rate will be up to a maximum price as set out below except where the POD is a point of interconnection between the Transmission System and the transmission system of FortisBC Inc., in which case the rate shall be zero (\$0.00) [...]

The posted prices for Short-Term Firm and Non-Firm Service will be less than or equal to a maximum price ( $\$ / M W h$ ) as set out below, except where the POD [point of delivery] is a point of interconnection between the Transmission System and the transmission system of FortisBC Inc., in which case the rate shall be zero (\$0.00). ${ }^{14}$

Page 6 of the BC Hydro OATT Business Practice Posting of Transmission Service Offerings states:

BC Hydro and FortisBC have adopted (as directed pursuant to BCUC Order G-1299) the harmonization of transmission wheeling rates. Such harmonization eliminates rate "pancaking" between the two utility service areas by using a "license plate" approach whereby a transmission service rate customer within B.C. is only charged for wheeling by the utility within whose service area the customer is located. A transmission customer will need to demonstrate to BC Hydro, with a BC Hydro TSR [Transmission Service Requests], that its POD at a FortisBC POI [point of interconnect] is associated with an equivalent PTP [point to point] reservation to a FortisBC TSR POD located in FortisBC's service territory to receive $\$ 0$ rate per BC Hydro OATT Schedule 01. Ancillary Services will be charged by each utility independently based on the reserved capacity for these reservations. ${ }^{15}$ [Emphasis added]

[^7]15.9 In instances where the delivery of market power to RS 38 customers by FBC requires transmission services on BC Hydro's system, please explain whether the rate of $\$ 0.00$ for Long-Term Firm Service, Short-Term Firm and Non-Firm Service outlined in Schedule 01 of the OATT would be applicable.
15.9.1 Please discuss whether the Hourly Service Adder accounts for the rate harmonization provision in the OATT.

## Response:

For clarity, LCIR Customers are not purchasing either market power or transmission services. LCIR Customers are paying for service with energy priced in reference to the Mid-C price, with an Hourly Service Adder that is set in consideration of, but not exactly the same as, the use of transmission service. LCIR Customers remain solely end-use customers of FBC and are not being provided with retail access. FBC is not delivering market power to LCIR Customers. Rather, FBC is supplying LCIR Customers with power that FBC purchases to supply customer load, that may or may not be from the market.

The harmonization clauses in the OATT of BC Hydro and FBC do not apply to situations where FBC is using the BC Hydro system to transmit power that will be used to serve FBC's Customers within FBCs service area. In any event, FBC does not anticipate using BC Hydro OATT services to supply LCIR load.
15.10 Please explain whether the rate of $\$ 0.00$ would be applicable in a hypothetical scenario where a large commercial customer purchased market power and arranged point-to-point transmission services on BC Hydro and FBC's systems. Please provide a discussion of the difference in overall costs between this scenario and the scenario in IR 15.7.

## Response:

Were retail access currently permitted, the $\$ 0.00$ rate would apply where a Large Commercial Customer served at transmission voltage purchased market power and wheeled the power through the service areas of both FBC and BC Hydro. The Customer would pay only for transmission service from the utility within which service area it is located and both utilities' ancillary service charges would apply as well. However, at this time, the $\$ 0.00$ rate would not be available since retail access itself is prohibited.

The scenario in BCUC IR1 15.7 (in which FBC is contemplating purchasing power from BC Hydro to serve RS 38 Customers) does not involve retail access and does not therefore involve any charges related to wheeling power. From a Customer perspective, the cost difference would be attributable to the difference in the total wheeling costs pursuant to the mix of services required under FBC rate schedules 101 to 109, and the fixed per-kWh charges contained in RS 38. There

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may also be a difference in costs between the Mid-C rate the Customer would pay under retail access and the possibility that under the LCIR the Customer would be paying for Energy Charges calculated using the Mid-C Price Cap.
15.11 Please confirm, or explain otherwise, that there are no rate harmonization provisions between FBC and Teck with respect to transmission on 71 Line.

## Response:

Confirmed. FBC's transmission access to Teck's 71 Line is a negotiated agreement. The concept of rate harmonization does not apply in the context of 71 Line since there is no balance of benefits whereby Teck could potentially receive a reciprocal benefit if using FBC transmission. Teck is part of the Canal Plant Agreement and therefore enjoys direct access to BC Hydro transmission without needing to make use of the FBC transmission system.

## E. ECONOMIC JUSTIFICATION

### 16.0 Reference: ECONOMIC JUSTIFICATION

Exhibit B-1, Section 3.2, p. 9, Section 3.3, p. 13; Exhibit B-2, p. 7
Economic Justification - Example
On page 9 of the Application, FBC explains that the energy charge is based on actual energy flows in the On-peak and Off-peak hours multiplied by the On-peak and Off-peak day ahead index prices, the Intercontinental Exchange (ICE) Day Ahead Mid-Columbia Peak Index and the Day Ahead Mid-Columbia Off-Peak Index, respectively.

In section 3.3 on page 13 of the Application, FBC provides an example to illustrate how offering the LCIR can be leveraged into a rate benefit for all FBC customers using an average all-hour Mid-C price for March 2022 and states:
[...] If, for example, the customer chose to either convert its entire load, or add only the additional 10 MVA as non-firm, a benefit would likely accrue to FBC customers in the first scenario and would certainly accrue in the second.

On page 7 of the Supplemental Information, FBC offers an expanded explanation referencing the example provided in Section 3.3 of the Application and states:
[...] FBC ratepayers would benefit unless no new load is added and RS 38 revenue is lower than RS 31 revenue would have been. FBC therefore concludes that a benefit would "likely" result.
16.1 Please recalculate the example provided on page 13 of the Application if FBC were to use, instead of the "average all-hour Mid-C price for March 2022", (i) the lowest values of the ICE Day Ahead Mid-Columbia Peak Index and Day Ahead MidColumbia Off-Peak Index that occurred in March 2022 and (ii) the highest values of the ICE Day Ahead Mid-Columbia Peak Index and Day Ahead Mid-Columbia Off-Peak Index that occurred in March 2022.

## Response:

The lowest and highest price for an on-peak hour in March of 2022 was $\$ 30.09$ and $\$ 51.07$ CDN respectively. The lowest and highest price for an off-peak hour in March of 2022 was $\$ 28.80$ and $\$ 48.72$ CDN respectively. The requested analysis for these four prices is below.

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16.1.1 Please confirm, or explain otherwise, that the "average all-hour Mid-C price for March 2022" is the monthly average.

## Response:

Confirmed.
16.1.2 Please explain why the proposed RS 38 uses ICE Day Ahead MidColumbia Peak Index and Day Ahead Mid-Columbia Off-Peak Index instead of an average all-hour Mid-C price.

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## Response:

Using the ICE Day Ahead Mid-C Peak Index and Day Ahead Mid-C Off-Peak Index instead of an average all-hour Mid-C price more closely mirrors how FBC would procure supply for this customer class, which would be by purchasing standard Peak or Off-Peak blocks. In theory if a Customer is a flat load, the pricing should work out to be equal under both methods, but, for example, if a Customer is taking more supply during Peak hours than Off-Peak hours, it could end up paying less than the cost of supply to FBC if FBC was to charge an average all-hours MidC price.

### 17.0 Reference: ECONOMIC JUSTIFICATION

## Exhibit B-2, p. 7

Ratepayer Impact
On page 7 of the Supplemental Information, FBC states:
Quantifying ratepayer impact from RS 38 is extremely difficult due to the number of variables involved. For example, the impact would vary with:

- Whether the RS 38 load was entirely new, or was load that had previously been served under RS 30 or RS 31 (with the original rate itself bearing on the impact);
- The magnitude and profile of the load;
- Whether or not new RS 30 or RS 31 load is added when RS 31 load transfers to RS 38; [...]
17.1 Please confirm, or explain otherwise, that the statement on page 7 of the Supplemental Information, "Whether or not new RS 30 or RS 31 load is added when RS 31 load transfers to RS 38 " should include reference to RS 30 load transfers: "Whether or not new RS 30 or RS 31 load is added when RS 30 or RS 31 load transfers to RS 38."


## Response:

## Confirmed.

17.2 Please discuss the circumstances under which RS 38 revenue would be the same as RS 30 and RS 31 revenue, respectively, assuming the load is the same under both RS. As part of the response, please discuss, directionally, which factors or events would need to change for revenue under RS 38 to be greater or less than revenue under RS 30 and RS 31, respectively. If there are any specific thresholds, please specify.

## Response:

The factors influencing the relative level of RS 30/31 revenue and RS 38 revenue in a given month are highly variable and include customer load, the currency exchange rate, the hourly Mid-C price and the Mid-C Price Cap. Due to the independent movement of these variables in RS 38, it is not possible to define a single set of circumstances that would result in RS 30/31 revenue being the same as revenue under RS 38, even for the same load. Equal revenue under the firm and nonfirm rates is highly improbable and certainly not predictable or the result of a single set of circumstances.

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Moreover, overall revenue, whether on an individual or aggregate customer basis is not a useful measure by which to gauge the success of the LCIR, or to evaluate the impact to other customers. This assessment must also consider the cost side of the equation, including the cost of marginal resources required to meet incremental load. Marginal resources will be required to meet new load, whether that power is delivered pursuant to RS 30/31 at embedded cost rates, or under RS 38 where load is resourced and billed at a rate at least equal to the cost of the power. In the view of FBC, while it is natural to compare the revenues received under firm and non-firm rates, such a comparison disadvantages RS 38 since the resources required to meet the load in each case may be the same, but only RS 38 recovers revenue based directly on the cost of the resources involved and with the added ability to not serve the load should it become uneconomic to do so.
17.2.1 Please confirm, or explain otherwise, if the revenue gain/loss of RS 38 relative to RS 30 and RS 31 is linearly correlated with the size of the load being transferred or any other factors or events identified in response to the IR above.

## Response:

Confirmed. However, the revenue variance between RS 38 and RS 30/31 is also influenced by the level of the Mid-C Price Cap which may influence the number of hours served for the RS 38 Customer which will in turn impact revenue. A RS 31 Customer will continue to be served in all hours.

Please also refer to the response to BCUC IR1 17.2.

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### 18.0 Reference: ECONOMIC JUSTIFICATION

## Exhibit B-1, Section 4.1, pp. 14-15 Load Retention

On pages 14 and 15 of the Application, FBC states:
From the perspective of FBC (and by extension, non-participating customers), the primary risk associated with the LCIR stems from the uncertainty of attracting new load to the system when an existing Large Commercial customer leaves an existing rate for all or some of its load in favour of interruptible service, thereby making additional system capacity available. In the case where additional load does not result, FBC would be exposed to a drop in revenue that may not be offset by no longer having to plan for the firm load for the customer. Any shortfall would be borne by other customers.
[...]
In addition, there is also a load retention aspect to offering the LCIR at this time. That is, without some means of remaining competitive with the rates found in other jurisdictions, FBC is at risk of losing some load that is able to relocate.
[...]
FBC has mitigated against the risk associated with existing firm load becoming interruptible in two ways. First, by including a price cap, FBC has mitigated against the risk associated with extremely high market prices, and second, an initial 50 MVA cap on participation will serve to manage the program to a level where FBC is confident that additional load can be interconnected.
18.1 Please discuss the factors and/or scenarios that FBC would anticipate the maximum potential gain for FBC implementing RS 38, assuming RS 38 customers are being supplied at the Mid-C market price. Please specify and explain any assumptions.

## Response:

The scenario that would most likely result in the maximum benefit is the addition of new RS 38 load from the addition of a Customer that is completely new to FBC. All of the revenue from this Customer would be incremental. If the Customer is being supplied at the Mid-C market price exclusively, the incremental revenue would result from the Hourly Service Adder and any margin that FBC could achieve by supplying the load from alternate resources priced less than the MidC market price in any hour. Maximum potential gain could also be achieved by increasing RS 30/31 load as a result of attracting an infill Customer to take up the capacity made available by an existing Customer moving its load to RS 38. In this case, the size of the benefit would depend on whether or not the new RS 38 Customer provided more or less margin (rate revenue over associated costs) than it did on RS 30/31, combined with the new RS 30/31 margin.

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Given the number of moving parts that must be considered, it is difficult to generalize about any given scenario.
18.2 Please discuss the factors and/or scenarios that FBC would anticipate the maximum drop in revenue that FBC would be exposed to in offering RS 38, assuming RS 38 customers are being supplied at the Mid-C market price. Please specify and explain any assumptions.

## Response:

The revenue collected by FBC from RS 38 Customers is unaffected by the resource that FBC relies upon at a given time to supply the RS 38 load. RS 38 Customers are billed according to the rates included in the RS 38 tariff in all cases. The potential drop in revenue as compared with RS 30/31 varies with the size of the load and the Mid-C price.

The source of supply will affect the margin that FBC is able to generate from the sale of power to the Customer at the Mid-C based rate, and serving the load from Mid-C purchases will provide the lowest margin and least benefit to other Customers.
18.2.1 In the event that FBC supplies energy to all RS 38 customers at the lower Mid-C Price Cap rather than the current Mid-C market price, please explain whether the expected drop in revenue would be greater than that quantified in response to the IR above. If yes, please explain and quantify the magnitude of the expected revenue loss with reference to the assumed Mid-C Price Cap, current Mid-C market price, and FBC's embedded cost of power as applicable. If no, why not?

## Response:

The preceding response did not include a quantification and as explained in the response to BCUC IR1 18.2, the resource used to supply the RS 38 load has no impact on customer revenue. The drop in revenue associated with an Energy Charge based on the Mid-C Price Cap rather than the Day-ahead Mid-C price would be the product of the difference in these two amounts and the customer load. However, the benefit to other Customers is dependent on the resource used to supply the load, which may not be the Mid-C market.

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18.3 Please discuss any loss of load due to relocations which FBC has experienced historically or recently with its commercial customers.

## Response:

FBC has not experienced relocation of RS 31 load. FBC cannot confirm that RS 30 load has or has not relocated since these Customers are more numerous and not tracked as closely, and, since some have multiple locations in different jurisdictions, load can be relocated by shutting down and consolidating in the least cost jurisdiction. FBC has had RS 30 Customers shut down in recent years. FBC has had discussions with prospective Customers that indicate that options regarding energy service is a key consideration in choosing a location.
18.4 Please elaborate on how "FBC is at risk of losing some load that is able to relocate" and provide supporting documentation.

## Response:

This conclusion is based on discussions with Customers and is not documented. While FBC is not contending that this risk is widespread, it does exist and may increase for certain types of technology-based load such as cryptocurrency mining and data centres; additional customer options can improve the attractiveness of FBC as an option.
18.5 Please elaborate on the "rates found in other jurisdictions" that FBC wishes to remain competitive against and provide a summary of FBC's findings regarding the rate offerings in those other jurisdictions.

## Response:

Any jurisdiction that has rate options that appear more appealing than those available at FBC constitutes a disadvantage for FBC when loads are first investigating potential locations. For example, the default industrial rates at BC Hydro are generally lower than at FBC, and BC Hydro also has in place discounted Industrial electrification rates that are intended to help existing and new industrial Customers connect to BC Hydro with a discount of 20 percent for the first five years and an additional 2 years of slightly lower discounts. These rates were put in place pursuant to Order in Council No. 657/2020 and FBC has no ability to similarly discount its rates.

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18.5.1 Please discuss whether the rate offerings in other jurisdictions was a consideration to FBC's RS 38 proposal. If yes, please elaborate on how FBC's RS 38 proposal includes these considerations (such as in the pricing, rate structure, etc.).

## Response:

The competitive rate offerings in other jurisdictions are a contributing factor in FBC's desire to offer customer choice and provide a means to connecting to FBC where it might not otherwise be possible, but the other jurisdictions did not influence the specific structure or terms of the rate for which FBC has applied. FBC looked at the issues it was trying to address, as outlined in the Section 2 of the Application, and sought to address them through a rate design process.

## F. IMPLEMENTATION

### 19.0 Reference: IMPLEMENTATION

Exhibit B-2, pp. 11-12; BC Hydro Transmission Service Market Reference-Priced Rates Application, Order G-256-20 dated October 14, $2020{ }^{16}$

## Permanent Offering versus Pilot Program

On pages 11 and 12 of the Supplemental Information, FBC states:


#### Abstract

[...] FBC must balance the access to the rate with the need to manage it successfully, given that Customers may be making long-term investment decisions that favour not introducing the rate as a pilot program. FBC expects that there will be operational learnings (see the response to question 7 , for example) that will need to be incorporated into the program before it can be expanded to a larger volume. In addition, there remains uncertainty in FBC's energy and capacity needs for its existing Customers and therefore, what room may be available on FBC's market import capabilities. [...]


By Order G-256-20 dated October 14, 2020, the BCUC approved the BC Hydro Incremental Energy Rate (IER), RS 1893 as a pilot program effective from January 1, 2020 to March 31, 2024.
19.1 Please discuss the pros and cons of introducing RS 38 as a permanent offering as opposed to a pilot program with a fixed term. In the response, please address considerations, such as the need for refinement from operational learnings, understanding of customer preference and behaviours, availability of information on anticipated incremental costs and benefits, resulting ratepayer impact, and certainty of rate availability for RS 38 customers.

## Response:

FBC believes that all of the considerations listed in this question are important to managing any revisions to the rate and assessing the success that the rate has had in accomplishing its intent to add load and provide customer choice while providing a benefit to both participants and nonparticipants. However, the most important consideration (the "pro") in favour of offering the rate on a permanent basis remains the fact that a Customer that desires to take service on RS 38 may be required, in the case of transmission-fed Customers, to make alterations in the design of the Customer facility to accommodate an interruptible form of service, and primary-fed Customers (on RS 30) may also have to add the necessary equipment to enable FBC-controlled interruptions. These additions will have a cost and FBC does not believe that it would be fair, or attractive, for the Customer to make such investment without the knowledge that the rate is intended to be a

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permanent offering. The "con" that exists with a permanent offering would be the persistence of a rate that may not achieve its goal and results in a sustained revenue decrease, but if this occurs, FBC believes it could be addressed through a review of the rate design once experience has been gained. As stated in the Application and Supplemental Information, given the interest in connecting to the FBC system, FBC considers this risk to be minimal.
19.2 Please discuss over what period of time (in months or years) a new customer would require in order to sufficiently recover any significant capital investment if they were to be serviced under RS 38.
19.2.1 If FBC were to offer a pilot program for the time period identified in the preceding IR, please discuss whether it addresses concerns regarding capital investments. As part of the response, please discuss any other considerations or options that would help to mitigate concerns for customers related to making capital investment decision for RS 38 service.

## Response:

As discussed in the Supplemental Information, FBC anticipates that capital costs may range from $\$ 10$ thousand to $\$ 100$ thousand in order to facilitate an FBC-controlled means of disconnection. The amount of time required to recover these costs would be entirely dependent on the relative pricing of RS 38 and RS 30/31 energy and the load involved. Assuming for example, that a Customer is taking service under the conditions described in the response to Supplemental Information, Question 5, the recovery of these funds would be quite quick, perhaps a single billing period. If the Mid-C market prices were higher, it may be that the costs may not be recovered until such a time as the market prices fell to below a level that would result in bills lower than under the firm rates. FBC has proposed a permanent rate in consideration of customer exposure to capital costs as these may not be Customers that are already connected and able to take service under an underlying rate (as with BC Hydro's RS 1893).

However, FBC would still offer the rate were the BCUC to approve it on a pilot basis as long as the cap on total enrollment were maintained and the pilot period was sufficient in length (i.e., 3 to 5 years) to allow for market variation and operational learnings to be experienced.
19.3 If applicable, please provide any other utilities or rate schedules in the Canadian market, such as the BC Hydro IER referenced above, that FBC referred to when determining to propose this rate as a permanent offering.

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Response:
FBC determined through internal discussions and discussions during the engagement process that it preferred to offer the rate on a permanent basis. FBC did not rely on the rates of other jurisdictions in making this determination.

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### 20.0 Reference: IMPLEMENTATION

## Exhibit B-1, Section 4.2, p. 15, Appendix C - Consultation Materials, "LCIR Consultation Q\&A Aug - Final"; Exhibit B-2, pp. 11-12 50 MW Limit

On page 15 of the Application, FBC states: "an initial 50 MVA cap on participation will serve to manage the program to a level where FBC is confident that additional load can be interconnected." FBC further states, "FBC also proposes to limit initial uptake in the program to a total of 50 MW of connected interruptible load."

On page 11 of the Supplemental Information, FBC states:
[...] it is likely that LCIR Customers will not all be concentrated in one location, and there may be no more than one LCIR Customer in a given location, if the problem giving rise to curtailment occurs in / affects only that location, it is clear who will need to be curtailed.

On page 12 of the Supplemental Information, FBC states:
FBC is confident that 50 MW will not pose a material risk, given the incremental benefits available for other ratepayers, but operational experience combined with increased certainty on the load forecast should be obtained before FBC makes any higher amount available.
20.1 Please reconcile whether the initial cap is proposed to be 50 MVA or 50 MW.

## Response:

FBC apologizes for the inconsistency in the documentation. Operationally, most discussions are held in MW terms, while large commercial billing is expressed in MVA. For the purposes of the program cap, any program related documentation will use the billing-related MVA units.
20.1.1 Please explain whether a cap with reference to MVA or MW is more appropriate, including considerations, such as ease of monitoring, administrative practicality, system management and consistency with FBC's system balancing practice.

## Response:

As discussed in the response to BCUC IR1 20.1, customer-facing communication, such as billing, is expressed in MVA, so it is appropriate to communicate potential load restrictions to Customers in these terms. As a practical matter, the program cap is intended to limit total participation to a manageable number, and it is unlikely that a Customer requirement will be so exacting that the

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difference between 50 MVA and 50 MW at power factors typical at that load level will have any impact to enrollment. Power markets are conducted in MW terms and this will not change regardless of the units used in customer communication.
20.2 Subject to the response to the preceding IR, please discuss how the 50 MW or 50 MVA limit was determined. Please include discussion of any other limits that were considered and how the $50 \mathrm{MW} / \mathrm{MVA}$ limit was decided to be the most appropriate option in FBC's view.

## Response:

The 50 MVA level was chosen based on the operational experience and judgement of the FBC Power Supply group as a number that both provides for a reasonable load addition and will provide useful experience with the program.
20.3 Please explain if the proposed 50 MW/MVA limit for RS 38 would be supported by planned system upgrades by FBC. If yes, please discuss the details of those upgrades (i.e. costs, timing, ratepayer impact). If no, with reference to FBC's current load resource balance (capacity), please discuss how the 50 MW capacity to serve RS 38 will be supported by FBC's existing system.

## Response:

The proposed 50 MVA program limit can be accommodated on a non-firm basis by the existing system. Part of the rationale for the LCIR is that load that would otherwise require such system upgrade to be served on a firm basis can be connected.

In the "LCIR Consultation Q\&A Aug - Final" document in Appendix C to the Application, FBC states:

LCIR Applications will generally be processed on a first-come, first served basis. However, it reserves the right to consider and weigh, when making an approval decision, the potential system and overall customer benefits of, as well as provincial energy objectives associated with, competing LCIR proposals.
20.4 Please explain how the 50 MW limit would be allocated among interested customers. Please include discussion of (i) details of how FBC will implement the "first-come, first served" allocation; (ii) any restrictions on number of customers by location; (iii) any preference for one large customer or several smaller customers; and (iv) any risk considerations for diversifying customers across industries (i.e. cryptocurrency, forestry, cannabis).

## Response:

As noted in the LCIR Consultation Q\&A, FBC foresees that the primary approach to connecting RS 38 Customers will be on a first-come, first served basis. This is consistent with the interconnection of Customers generally where there may be limited local system capacity and multiple applications. Priority will be given to existing Customers that have requested additional capacity and where FBC has been unable to meet the request on a firm basis. After this first consideration, applications will be dated as they are submitted, and as long as the applicant meets the commitments outlined in the Industrial Electricity Interconnection process the application remains active and available capacity will remain allocated to the Customer. The exception to this process will be for the initial 60-day period following approval of the RS 38 tariff, and where there are multiple applicants. In this case, the applications received during this period will be prioritized according to a lottery. This is consistent with the approach used in the OATT for the reservation of firm point-to-point service following initial tariff approval. FBC recognizes that the non-firm OATT approach relying on bid prices may be a viable alternative however this approach has not been explored further at this time.

Restrictions for a given geographic location will be assessed in light of available capacity and FBC does not anticipate that it would be necessary to restrict the number of Customers as long as the total amount of available non-firm capacity is not exceeded. FBC also does not have a preference for the number of Customers that are connected under the program limit. While from an operational perspective, FBC would prefer a diversification of load by industry and location, it does anticipate that as a practical matter it will not be possible to dictate that such diversification occurs.
20.4.1 Please discuss how the allocation process above ensures fairness among all interested RS 38 customers.

## Response:

As discussed in the response to BCUC IR1 20.4, available system capacity is reduced with every interconnection and constitutes a de facto 'first come-first served' approach for connecting load. This consistency with interconnection generally, and the lottery system intended for any initial surge of interest, is considered by FBC to be a fair approach to allocating interruptible capacity.

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20.5 Please discuss the "the potential system and overall customer benefits of, as well as provincial energy objectives associated with, competing LCIR proposals" that FBC might consider when making an approval decision outside of the noted firstcome, first served basis processing of applications.

## Response:

The "LCIR Consultation Q\&A Aug - Final" response, which was written in the summer of 2021, represented what FBC considered to be a workable means of allocating access to interruptible service at the time. Further discussions on the practicality of choosing one Customer over another on these factors led FBC to adopt the approach described in the response to BCUC IR1 20.4, which does not attempt to weigh potentially subjective factors.

However, FBC recognizes that in the evolving energy landscape it is currently in, certain potential uses of electricity directly related to British Columbia meeting greenhouse gas targets may be recognized as priority loads. To the extent that RS 38 service could potentially support these efforts, it may be necessary for FBC to consider priority for such applications in consultation with the BCUC.
20.6 Please explain why "there may be no more than one LCIR Customer in a given location." As part of the response, please define what a "location" pertains to and explain how FBC will select a potential RS 38 customer (e.g. first come first serve basis).

## Response:

FBC does not understand this question as the language referenced in the question does not appear in the preamble and FBC has reviewed the portion of Appendix C, Large Commercial Interruptible Rate (LCIR) Consultation Q\&A Consultation Session \#2: August 25 \& 26, 2021, and could not locate the quoted passage. FBC is not limiting LCIR Customers by location.

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### 21.0 Reference: IMPLEMENTATION

## Exhibit B-1, Section 3.3, p. 13

## Customer Costs

On page 13 of the Application, FBC states: "The customer served on the LCIR will only be served when it funds any interconnection costs, and when the energy charges under the rate exceed FBC's incremental power supply costs."
21.1 Please explain how the condition in which "the energy charges under the rate exceed FBC's incremental power supply costs" will be monitored and implemented.

## Response:

FBC intends to arrange for the required supply on a day-ahead basis. If it cannot be obtained at the required price, FBC will be aware of that.
21.2 Please explain whether the reference to FBC's incremental power supply cost from the above preamble is included in the draft RS 38 tariff, and if so, please explain where they are included in the draft.
21.2.1 If not included, please provide an updated draft RS 38 tariff, if needed. If FBC does not see the need to include this condition in the RS 38 tariff, please explain why not

## Response:

The referenced statement regarding incremental power supply costs is a simplified expression of the impact of the Mid-C Price Cap nominated by the Customer and part (e) of the Reasons For Interruption:

For Hours where FortisBC reasonably expects that the Energy Charge will be based on the Mid-C Price Cap as described in part i) of the Energy Charge portion of this rate schedule, FortisBC may interrupt the Customer.

The effect of this clause is that when the Mid-C price is above the Mid-C Price Cap, FBC has the option to interrupt the Customer and will not serve the load unless the energy charges exceed the cost of serving the load.

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### 22.0 Reference: IMPLEMENTATION

## Exhibit B-1, Appendix A- Interruptible RS 38, Original Page R-38.3; Appendix C - Consultation Materials, "LCIR Consultation Q\&A Aug Final"

## Forecasting

On Original Page R-38.3 of Appendix A - Proposed Rate Schedule 38 within the Application, FBC states:

By January 31 of each year, the Interruptible Customer will provide to FortisBC an hourly anticipated load forecast for the premise being served under this Rate Schedule for the following five years. Anticipated changes to this load forecast are to be communicated by the Interruptible Customer to FortisBC with as much notice as reasonably possible.

On page 2 of "LCIR Consultation Q\&A Aug - Final" document in Appendix $C$ to the Application, FBC states:
[...] The amount of notice FBC requires varies depending on the scheduling calendar in the wholesale power markets but is typically between 2 and 5 days in advance. Any customer considering changing their purchase schedule should contact FBC to coordinate any such change to ensure the change is taken into account prior to FBC submitting the FBC nomination for that day.
22.1 Please explain all reporting requirements by RS 38 customers regarding load forecast and purchase schedule, including the level of detail required, reporting frequency, and the rationale for these reporting requirements at the requested level of detail and frequency.

## Response:

FBC assumes that this question is asking about nomination requirements, rather than reporting requirements, since there are no reporting requirements for RS 38 Customers.

By January 31 of each year, as detailed in the response to BCUC IR1 25.1, the RS 38 Customer will provide to FBC an hourly anticipated load forecast for the premise being served under this rate schedule for the following five years. This will help FBC to include the expected energy and capacity costs associated with RS 38, as well as revenue associated with RS 38, in its ongoing revenue requirement forecasts.

Next, for each month, FBC would require the RS 38 Customer to nominate its Mid-C Price Cap, by providing FBC with the maximum Mid-C price it is willing to pay by the $20^{\text {th }}$ day of the preceding month. This will allow FBC to have the price threshold it requires to coordinate purchases on behalf of the Customer over the course of the next month. By providing a monthly nomination, the Customer can adjust its Mid-C Price Cap in response to its own business requirements as well as market conditions. A monthly price cap would be relatively easy for FBC to administer

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1 when dealing with multiple Customers, whereas a daily or hourly Price Cap would be much more burdensome.

3

### 23.0 Reference: IMPLEMENTATION

## Exhibit B-1, Section 3.1, p. 8, Appendix A - Interruptible RS 38, Original Page R-38.4

Transition Between Firm and Non-Firm Service
On page 8 of the Application, FBC states:
Subject to certain conditions, the Customer may transition between firm service and the LCIR. These conditions are set out in the rate schedule.

On Original Page R-38.4 of Appendix A, FBC states:
The Interruptible Customer may request to transition or return to firm service under either Rate Schedule 30 or 31 by making an application through the existing FortisBC Industrial Electricity Interconnection process. Making such an application does not guaranty that firm service in the amount requested will be available at the desired location.
23.1 Please discuss the process and conditions that need to be met by FBC and the RS 38 customer (e.g. availability of firm capacity, revenue considerations, etc.) in order for the transitions between firm service and the LCIR to occur.

## Response:

FBC interprets the question to be with regard to an existing RS 38 Customer that wishes to transition to firm service under RS 30/31.

An application by an RS 38 Customer to take service under a firm rate schedule follows exactly the same industrial electricity interconnection process as would be required of a Customer that is completely new to FBC. This process is fully documented at the following link, https://www.fortisbc.com/services/commercial-industrial-services/industrial-electricity-
interconnection which includes a process flowchart and Facility Connection Requirements document. Through this process, available capacity is determined as well as any infrastructure upgrades that would be required in order to connect the load, and the cost to the Customer related to any of those upgrades.
23.2 Please discuss any limitations on how frequently a customer can transition between firm service and the LCIR.

## Response:

Special Condition 1 of RS 38 states:

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3 Once RS 38 is selected, a Customer must remain on RS 38 for 12 months, after which it could 4 make application to return to firm service following the process discussed in the response to 5

Service under this Schedule is available for a minimum of 12 Months after commencement of Service. BCUC IR1 23.1.

### 24.0 Reference: IMPLEMENTATION

## Exhibit B-1, Section 5, p. 19; Exhibit B-2, pp. 10-11

Notification of Interruption
On page 19 of the Application, FBC cites "notification provisions" for interruptions as one of "the subjects receiving the most discussion" in customer engagement sessions. However, on pages 10 and 11 of the Supplemental Information, FBC outlines "five reasons for which Customers could be interrupted under RS38." The first three reasons are noted to not be likely to have advance notice, while the fourth would "vary depending on the nature of the interruption," and the fifth would "occur with notice in accordance with industry standard day-ahead scheduling timeline."
24.1 Please explain how FBC plans to meet customer demand for notification of interruptions as expressed in the customer engagement sessions.

## Response:

The customer sentiment expressed during the customer engagement sessions was that notification prior to interruption would be a desirable feature of an interruptible rate. FBC initially had communicated that such notification would not feature in the LCIR at all. As a result of the consultation, FBC included in the RS 38 rate schedule that it would endeavor to provide notice, where practicable: the customer concerns were heard and resulted in a commitment on the part of FBC to endeavor to provide notification where practicable as described in the Supplemental Information. This is the extent of the commitment that FBC has made and to the extent that customer demand for notification of interruptions as expressed in the customer engagement sessions is interpreted as a firm requirement of some Customers, FBC has been clear that such a requirement cannot and will not be met.
24.2 Please discuss how FBC has, and will, take steps to communicate expectations for being on RS 38 to prospective customers regarding notifications and interruptions.

## Response:

All prospective RS 38 Customers will engage in detailed discussions about the nature of the interruptible service with both Key Accounts personnel and Engineering likely in advance of even submitting the required application. FBC does not envision that these elements of the LCIR will not be clearly understood by Customers.
24.3 Please discuss FBC's decision process to determine how much load FBC would interrupt a customer once FBC has determined to interrupt a customer under RS 38 and provide supporting documentation as appropriate (e.g. a Decision matrix).

## Response:

Prospective Customers will be provided information on the historical outage frequency related to system events at the location they are exploring, under the understanding that such information is not an assurance of future interruptions at a given location. Historical Mid-C pricing is available to aid a Customer in nominating a Mid-C Price Cap that can also affect the frequency of interruption. Each Customer that signs up for RS 38 will require a Joint Operating Order that will outline expectations to both parties on communications during both normal and emergency conditions.

> 24.3.1 Please discuss how the decision process explained above ensures fairness amongst different RS 38 customers, given some RS 38 customers will be receiving their requested energy requirements under RS 38 without interruption while others will be interrupted.

## Response:

With regard to fairness, FBC intends to track the number, location, and nature of interruptions, including the aspect of whether, in relation to any given interruption, there was any discretion possible on FBC's part (in relation to which Customer or how much of its load to curtail) given the specifics of the occurrence. If, contrary to FBC's expectation, there proved to be a need for the exercise of discretion regarding order, extent, or duration of interruption, FBC anticipates developing more specific criteria tailored to the kind of circumstances where the need to make choices had by that point been found to arise. Fairness concerns only arise where a system contingency emerges and there is more than one RS 38 Customer that could be impacted. Since such contingencies can be specific to a certain location on the system, this will not always be the case. Interruptions related to Mid-C prices will vary between Customers based on their individual nomination and do not raise fairness concerns. RS 38 is an optional program, and Customers willingly sign up for the service with the expectation that service will be interrupted; however, FBC views the principle of fairness as underpinning that all Customers in similar circumstances should be treated in a similar and consistent manner.

Once FBC has determined to interrupt a Customer under RS 38, the decision process for how much load to interrupt will largely be driven by how the Customer's system is configured. For example, if the Customer has only one main entrance circuit breaker then there will be no option and their entire load will be disconnected. If they have more than one breaker, then FBC will

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select the one with least amount of load connected unless otherwise agreed to in the Joint Operating Order.

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### 25.0 Reference: IMPLEMENTATION

## Exhibit B-1, Section 5, p. 20

Load Maintenance
On page 20 of the Application, FBC states:

> The LCIR requirement for customers to maintain an 80 percent load factor is an impediment for some facilities in terms of participating in the rate; however, it is an important element of the LCIR. [...] FBC expects to generally plan to obtain supply on a block basis and this needs to be matched by the corresponding load. FBC will closely monitor this over the initial implementation period to determine if the 80 percent required load factor is sufficient or if it must be increased to ensure that the power purchased for the LCIR customer is consumed by the LCIR customer. FBC may be willing to consider waiving the 80 percent requirement if warranted by individual customer circumstances and/or if LCIR customers are prepared to compensate FBC for losses associated with power purchased for, but not consumed by, LCIR customers[.]
25.1 Please explain the steps FBC will take to mitigate an RS 38 customer's failure to meet the 80 percent load factor requirement, and any potential consequence(s) and impact on the customer if an 80 percent load factor is not maintained (e.g. penalty, disconnection).

## Response:

In preparing the response to this information request and given the level of interest both in the load factor requirement and in the aspects of the LCIR that serve to limit the exposure of other Customers to risk, FBC has concluded that a revision to add clarity to the RS 38 tariff, in particular Special Provision (SP) \#3, is required.

SP \#3 currently reads,
By January 31 of each year, the Interruptible Customer will provide to FortisBC an hourly anticipated load forecast for the premise being served under this Rate Schedule for the following five years. Anticipated changes to this load forecast are to be communicated by the Interruptible Customer to FortisBC with as much notice as reasonably possible.

FBC is proposing to revise SP \#3 such that both an RS 38 Customer and FBC have a clear understanding of the requirement to communicate load changes, the obligation to actually consume the load that is nominated, and the potential implications of failing to do so.

A revised SP \#3 would read,
Prior to taking service under this Schedule, and thereafter by January 31 of each year, the Interruptible Customer will provide to FortisBC an hourly anticipated load forecast for the premise being served under this Rate Schedule for the following

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five years. The forecast must be the same number for any one day or days, consistent with the scheduling of the Mid-C on- and off-peak hours for that day or days. Anticipated changes to this load forecast are to be communicated by the Interruptible Customer to FortisBC within the timeframes provided by FortisBC.

If the Interruptible Customer's actual hourly consumption is greater than that customer's forecast load for that hour, FortisBC will make a reasonable effort to serve the load but is under no obligation to do so. The customer may be asked to reduce load and failure to do so may result in interruption due to lack of supply. Energy Taken, for the purposes of billing in the Energy Charge section of this rate schedule, shall be based on actual consumption. The rate charged by FBC will not be impacted by increased consumption.

Where the Interruptible Customer's hourly consumption is less than that customer's forecast load for that hour and this is not due to a FortisBC curtailment of the Customer, Energy Taken, for the purposes of billing in the Energy Charge section of this rate schedule, shall be based on the customer forecast load for that hour. However, in recognition that power has been delivered to the FortisBC system and not consumed by the Customer, the Customer will receive a credit equal to the amount of energy it did not consume, grossed up for losses, multiplied by a rate equal to the lower of the BC Hydro RS 3808 Tranche One Energy rate and the Mid-C market-based rate being charged for that hour.

In light of this revision, SP \#4, which states the requirement for a minimum 80 percent load factor, can be removed from the rate schedule, since the intent of this clause was to protect FBC and other ratepayers from the financial impact of FBC purchasing an amount of power that is not then consumed by the Customer. FBC believes that the revised SP \#3 accomplishes this objective and is a more direct expression of this intent. However, if effective use of the Customer's allocation under the program cap is not being made, FBC reserves the right to review the allocation.

The impact of this revision does not result in a take-or-pay provision due to the credit provided to the Customer for energy it did not consume.

A revised version of RS 38 is provided in Attachment 25.1.
25.2 Please discuss the rationale for the 80 percent load factor requirement and the impact to FBC if this requirement is not met, such as consideration for FBC's system management and cost of service. Please explain and quantify any potential financial impact.

## Response:

As described in the response to BCUC IR1 25.1, FBC is removing the requirement for 80 percent load factor. The intent of the 80 percent load factor was to help ensure that the customer load was consistent and that the Customer consumed the forecast load while still allowing a certain amount of daily variation. A mismatch between power purchased by FBC to supply the LCIR Customer and the power actually consumed has the potential to result in significant costs. For example, if FBC is buying power at $\$ 70$ per MWh that is not consumed by the LCIR Customer, it must be stored. As such its value to FBC is the incremental cost of energy. Assuming energy can be purchased at approximately $\$ 50$ per MWh (roughly the BC Hydro PPA rate), the cost is $\$ 20$ per MWh. If this variance continues every day for an entire year over all hours, the potential cost is $\$ 20$ * 8760 hours $=\$ 175,200$ for a single MW. The actual cost is highly variable depending on the difference between the forecast and the actual load as well as the difference between the price FBC pays and the incremental cost of energy. However, the potential for even small load variances to add up over time to material costs is significant.

If FBC is meeting the LCIR load by purchasing from the day ahead market based on the index price, FBC must purchase in flat blocks that follow the on peak and off-peak timelines. There is no flexibility on this point and therefore the LCIR Customer must also match this requirement in their load forecast to FBC.

Based on this, FBC determined that rather than requiring 80 percent load factor, which could still result in significant costs, a better approach is to deal with the hourly variances directly. This ensures that FBC will never pay more than the BC Hydro PPA rate for stored energy as a result of LCIR load being less than plan.
25.3 Please confirm, or explain otherwise, whether FBC considered any alternative load factor requirements for RS 38 customers. If confirmed, please elaborate on the options considered and why those other alternatives were not chosen.

## Response:

No, FBC did not actively consider any other load factor requirements. Please refer to the response to BCUC IR1 25.2 for further discussion of the relationship between market price and the load factor. FBC believes that the load factor to ensure FBC can meet its costs for LCIR Customers will change depending on the situation. Potential LCIR Customers that cannot consistently meet a very high load factor will likely not be successful on the LCIR rate.

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### 26.0 Reference: IMPLEMENTATION <br> Exhibit B-1, Section 4.2, pp. 15-16 <br> BCUC Reporting

On pages 15 to 16 of the Application, FBC states
FBC proposes to provide to the BCUC, on an annual basis, a summary of any
LCIR-related activity. The summary would include information such as:

- Applications for RS 38 service that are under review;
- kWh sales and revenue provided under the LCIR;
- A comparison of revenues under the LCIR to foregone revenue under RS 31 and RS 30;
- Average revenues from LCIR billing;
- An analysis of Power Supply alternatives used to supply interruptible customers; and
- Information on the reason for, frequency and duration of interruptions for LCIR customers.

As part of the review, FBC will provide a recommendation regarding the options to expand or maintain interruptible service beyond the initial 50 MVA offering.
26.1 Please outline FBC's internal performance metrics for RS 38 and explain how those internal metrics tie into the summary of any LCIR-related activity as outlined in the bullet points above.
26.1.1 In addition to the reporting items listed in the preamble, please discuss whether FBC requires any additional information to inform any required amendment or changes to RS 38.

## Response:

The bullet points included in the potential reporting elements were included only as a list of those elements that FBC considered would be of interest to the BCUC but were not intended to be reflective of any FBC internal performance metrics for RS 38. FBC has not developed internal performance metrics for RS 38 to date. FBC has indicated that it will be required, after some experience with the rate, to make a determination on whether or not the initial program offering of 50 MVA should be expanded. However, this will be done after experience with the rate has revealed any issues that may exist with this form of interruptible service and not in comparison to a predetermined set of criteria.

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26.2 In addition to the proposed scope of the annual report, please discuss whether FBC would be amendable to reporting on the following:

- Estimates of the costs and benefits of RS 38 on an overall ratepayer basis;
- Estimate of participant benefit based on the unit cost reduction of incremental electricity;
- Estimate of incremental energy sales and revenue;
- Assessment of whether risk mitigation measures (such as the initial program cap) were sufficient to protect non-participants from harm;
- Tracking of number of existing and new RS 38 customers and RS 30 and RS 31 customers that used the rate and volumes of use;
- Assessment of customer use of the rate and determination of customer load response to Mid-C prices;
- Assessment of any implementation issues - such as customer interconnection, service interruption, customer communication, and billing of incremental energy;
- Assessment of customer satisfaction regarding the rate;
- Review any interruption of customers under non-firm provisions of the rate;
- Examination of whether load shifting by customers occurred and an assessment of the impact;
- Assessment of the usage of RS 38 compared to the usage of RS 30 and RS 31;
- Assessment of the LCIR impact on RS 30 and RS 31 service options to determine if FBC should offer one or multiple non-firm services;
- An analysis to examine whether the usage of each participating customer's firm electricity service has changed, and if so, to what degree, as a result of the RS 38 non-firm service over the reporting period;
- Information about the system marginal values of FBC's resources; and
- A summary of any customer inquiries and complaints.


## Response:

FBC has reviewed the additional reporting scope and can confirm that it considers these additional items potentially achievable. However, FBC expects it to be a large amount of additional work to collect and analyze the required data and that this effort and the associated cost has nor been incorporated into the rate. FBC can provide an estimate of the costs related to reporting once the final content of the report is known.

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26.2.1 Please indicate if, in FBC's view, any of the above items would be confidential filings. Please explain why.

## Response:

FBC would attempt to file this information without divulging any customer information and would aggregate data where possible. However, if the LCIR was only in use by a single Customer it would likely be necessary to file the information on a confidential basis in order to protect the privacy of that Customer.

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### 27.0 Reference: IMPLEMENTATION

## Exhibit B-1, Section 4.3, pp. 16-18

Bonbright Principles
On pages 16 to 18 of the Application, FBC assesses each of the eight Bonbright Principles as either "good" or "fair".
27.1 Please provide an updated analysis of the eight Bonbright Principles under a scenario where (i) RS 30 and RS 31 customers convert to RS 38, with no new load; (ii) no customers convert to or sign up for RS 38; and (iii) all new customers sign up for RS 38 with no change in RS 30 or 31.

## Response:

FBC's view of the Bonbright Attributes of a Sound Rate Structure is distinct from an assessment of results that may occur given the uptake of the rate. What changes with the uptake of the rate is the impact on the participating and non-participating Customers. From this perspective, FBC is of the view that scenario (ii), where no Customers convert to or sign up for RS 38, remains as detailed in the Application since with no take-up, the potential for the rate as described is unchanged. What can be offered, and what is reflected in the table below, is an assessment of the relative outcome for each Bonbright criterion given scenarios (i) and (iii). The only attributes whose assessment varies with uptake are where revenue and cost recovered may be affected which are the first two rows in the table below.

| Criterion <br> Assessment <br> (i) | Assessment <br> (iii) |  |  |
| :--- | :--- | :--- | :--- | :--- |
| Recovery of the <br> revenue <br> requirement | Fair | Good | If there is no new load as a result of the conversion of <br> existing RS 30/31 load there is the potential (though not a <br> certainty) for an overall margin decrease and, whereas if all <br> RS 38 load results from new Customers incremental <br> contribution to fixed costs is assured. FBC will recover its <br> revenue requirement in any case. The assessment of <br> scenarios (i) and (iii) should therefore be viewed only as <br> relative to each other. |
| Fair <br> apportionment <br> of costs among <br> Customers | Fair | Good | If there is no new load as a result of the conversion of <br> existing RS 30/31 load some fixed costs may need to be <br> recovered from other Customers. If all RS 38 load is <br> incremental, other Customers are compensated for use of <br> the system and the RS 38 load pays for costs as agreed to <br> when joining the program. |
| Price signals <br> that encourage <br> efficient use and <br> discourage <br> inefficient use | Good | Good | LCIR Customers will receive direct price signals to which <br> they can respond by controlling load. LCIR Customers will <br> not have access to embedded cost power when the cost of <br> available supply exceeds rates. This aspect of the <br> assessment is unchanged by uptake. |


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| Criterion <br> Assessment <br> (i) | Assessment <br> (iii) |  |  |
| :--- | :--- | :--- | :--- | :--- |
| Customer <br> understanding <br> and acceptance | Good | Good | Interruptible service is relatively simple in form and has <br> been designed with input from potential Customers in the <br> case of the LCIR. This aspect of the assessment is <br> unchanged by uptake. |
| Practical and <br> cost-effective to <br> implement | Fair | Fair | From an FBC perspective, there is minimal ongoing cost to <br> administer the rates. Customers may face additional up- <br> front infrastructure costs. This aspect of the assessment is <br> unchanged by uptake. |
| Rate stability | Fair | Fair | For the LCIR, the structure is set; however, the energy price <br> is subject to fluctuation. This aspect of the assessment is <br> unchanged by uptake. |
| Revenue <br> stability | Good | Good | The rate is proposed to be permanent and should provide a <br> consistent stream of additional revenue. Should all of the <br> RS 38 load be as a result of the conversion of RS 30/31 <br> Customers, there may be an overall decrease in revenue; <br> however, this does not equate to fluctuations in revenue <br> that would impact the stability of revenue to FBC. |
| Avoidance of <br> undue <br> discrimination | Good | Good | The rate is available to all Large Commercial Customers on <br> the same basis throughout the service area. Non- <br> participating Customers are insulated from risk by the terms <br> and conditions, such as the initial 50 MVA cap on uptake, <br> and existing security provisions. This aspect of the <br> assessment is unchanged by uptake. |


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## G. CONTRACT FOR INTERRUPTIBLE SERVICE

### 28.0 Reference: CONTRACT FOR INTERRUPTIBLE SERVICE

Exhibit B-1, Section 1.1, p. 1, Section 3.2, p. 10, Section 3.3, p. 13; Exhibit B-2, Attachment, "1 - Contract for Interruptible Service"

Contract for Interruptible Service
On page 1 of the Application, FBC states:
As proposed, eligible customers could choose to take service using this optional interruptible rate for new or existing customers who would otherwise be eligible to receive service under either Rate Schedule (RS) 30 - Large Commercial Service - Primary, or RS 31 - Large Commercial Service - Transmission.

In Attachment 1 to the Supplemental Information, FBC provides the Contract for Interruptible Service (Contract), including the following information:
[...]
4. Type of Electricity Service. [...] The Customer shall not exceed the Demand limit of XXX kVA, [...]
5. Commencement of Electricity Service. [...] The term of this Contract shall be for two years, commencing on the date on which Electricity Service is deemed to commence in accordance with this clause 5 , and shall continue thereafter until terminated by 6 months' prior notice in writing by either party to the other.
6. Rate Payable. [...] The Customer shall, by giving notice to FortisBC both by email (at XXX@fortisbc.com [insert email address]) and by telephone (at XXX [insert telephone number]) by no later than 10 days prior to the beginning of each month during the term of this Contract, nominate the Mid-C Price Cap for that month. [...]
7. Revenue Guarantee and Security Deposit. A revenue guarantee of $\$$ [insert amount] and a security deposit of $\$$ [insert amount [verify with Collections)] will be required from the Customer pursuant to the Terms and Conditions of FortisBC's filed Electric Tariff before FortisBC provides Electricity Service pursuant to this Contract.
8. Customer Contribution. *A Customer contribution will be required with respect to the construction and installation of supply facilities and the Customer agrees to pay, in advance, the sum of $\$$ [insert amount] (verify with designers)] pursuant to the Terms and Conditions of FortisBC's filed Electric Tariff (including those relating to Extensions).
*The sum of $\$$ [insert amount] has been paid in full by the Customer.
[...]

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28.1 Please explain how the "the Demand limit of XXX kVA" with respect to the "Type of Electricity Service" clause will be determined for each customer and elaborate on the factors considered.

## Response:

Clause 4 contains two terms related to customer demand. The Contract Demand refers to the maximum amount of power that FBC has agreed to supply under normal circumstances pursuant to the rate under which the Customer is receiving service. The Demand Limit represents that amount of power that FBC may be able to supply, but where no obligation exists. The Customer cannot exceed the Demand Limit unless it has received prior permission from FBC. The Demand Limit is set in consultation with FBC Engineering which will determine the maximum amount of load that can be accommodated on either a firm or non-firm basis after conducting a study of the system in the area where the load is to be located. Typical elements of such a study include a power flow analysis, short circuit analysis, and a stability analysis.
28.2 Please explain how FBC determined that a two-year term for the Contract is appropriate.

## Response:

A two-year term is consistent with the existing template for all large commercial service agreements and was therefore included in the RS 38 template as well. However, the final term is subject to discussions between FBC and the Customer. Given that RS 38 provides that "Service under this Schedule is available for a minimum of 12 Months after commencement of Service", it may be that a 12-month duration would be preferable for Customers; this is something that FBC would likely be receptive to.
28.2.1 Please confirm, or explain otherwise, that the two-year term of the Contract refers to the effective term of the Contract, rather than the requirement to remain on RS 38 for two years.

## Response:

Confirmed.

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28.3 Please explain how the Contract applies to customers who receive service under both RS 30 or 31 and RS 38, simultaneously.

## Response:

Customers that elect to take interruptible service for only a portion of their load will have separate agreements that govern firm and non-firm load.

On page 10 of the Application, FBC states:
The level of the Mid-C Price Cap nomination made by the customer, even if relatively high, will not impose a risk on FBC that cannot be mitigated by the existing security deposit provisions that will ensure that FBC holds a deposit sufficient to provide payment for an estimate of the total bill for the two highest consecutive months consumption of electricity by the applicable premises.
28.4 Please explain how the quantity for "revenue guarantee" and "security deposit" outlined in the "Revenue Guarantee and Security Deposit" clause in the Contract are determined and explain what these two items are intended to cover.

## Response:

The revenue guarantee and security deposit terms in the Contract relate directly to those terms as they exist in the FBC Electric Tariff, sections 4.6 and 2.5 respectively, and the Contract clause is a standard one in commercial supply agreements. The security deposit is for security for payment of bills.

The requirement for a revenue guarantee is described in section 4.6 of the Tariff as follows:
If the provision of Service by FortisBC to a non-residential Customer will require construction and installation costs by FortisBC of more than $\$ 5,000$ per Customer supplied, FortisBC may require each such Customer to provide a revenue guarantee deposit, as assurance that FortisBC will receive sufficient revenue to recover the installation costs of the facilities

Since a requirement of RS 38 is that the Customer fund all construction and installation costs related to the service, the revenue guarantee portion of the clause will not be used. As such, FBC intends to remove it from the final version of the Contract to avoid confusion.
28.4.1 Please confirm, or explain otherwise, that the "security deposit" outlined in the "Revenue Guarantee and Security Deposit" clause in the Contract

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is equivalent to the "estimate of the total bill for the two highest consecutive months consumption of electricity by the applicable premises" discussed in the Application.

## Response:

Confirmed.
28.4.2 Please discuss over what time period "the two highest consecutive months consumption of electricity" FBC will use to estimate for a deposit and explain why.

## Response:

FBC expects that it will initially determine the security requirements for RS 38 Customers by estimating the expected load and ensuring that the deposit on hand will be adequate to cover two months revenue associated with the Customer's load forecast at an Energy Charge reflective of the Customer's Mid-C Price Cap. Revisions to either the load forecast or Mid-C Price Cap would prompt a review of the adequacy of the deposit.

On page 13 of the Application, FBC states, " $[t]$ he customer served on the LCIR will only be served when it funds any interconnection costs..."
28.5 Please explain whether "Customer Contribution" outlined in the "Customer Contribution" clause in the Contract is inclusive, or in additional to, all interconnection costs borne by the customer.

## Response:

The Customer Contribution clause in the Electricity Service Contract is common to all Large Commercial contracts where a contribution may be required. In the case of RS 38 Customers, the Customer Contribution is comprised of and therefore inclusive of the interconnection costs borne by the Customer.
28.6 Please explain how the "Customer Contribution" amount is determined for each RS 38 customer.

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## Response:

Through the Industrial Electricity Interconnection process, FBC and the LCIR Customer work together to finalize interconnection requirements and design for the interconnection. FBC provides the customer contribution amount after the design and estimating process is complete. The interconnection costs are only those directly related to the interconnection and communication with FBC. Costs related to facilities on the customer side of the interconnection are separate and also the responsibility of the Customer.

## Attachment 10.2

# REFER TO LIVE SPREADSHEET MODELS 

Provided in electronic format only
(accessible by opening the Attachments Tab in Adobe)

## Attachment 10.4

# REFER TO LIVE SPREADSHEET MODELS 

Provided in electronic format only
(accessible by opening the Attachments Tab in Adobe)

Attachment 25.1

## RATE SCHEDULE 38 - INTERRUPTIBLE SERVICE

## NATURE OF SERVICE:

Interruptible Service is a non-firm, large commercial rate where customers are subject to service suspensions as described in this Rate Schedule. A Customer taking service under this Rate Schedule is referred to as an Interruptible Customer.

AVAILABILITY: Interruptible Service is available throughout FortisBC's electric service area to Customers whose entire load at one point of interconnection would normally be eligible for service on Rate Schedule 30 - Large Commercial Service - Primary, or Rate Schedule 31 - Large Commercial Service - Transmission, subject to:
a. a review by FortisBC of each customer request for suitability and technical viability;
b. written agreement; and
c. in cases where the Interruptible Customer chooses to have only a portion of its total load served under this Rate Schedule, the portion of the customer's load that is to be served under this Rate Schedule is sufficient in size to itself qualify for service on either Rate Schedule 30 - Large Commercial Service - Primary, or Rate Schedule 31 - Large Commercial Service - Transmission.

CHARGES: $\quad$ Each Billing Period, the Customer will be billed the total of the Customer Charge and Energy Charge calculated as described below.

## Monthly Rate:

For Customers otherwise eligible for Rate Schedule 30: \$1030.68 per Month
For Customers otherwise eligible for Rate Schedule 31: \$3,366.02 per Month
In cases where the Interruptible Customer chooses to have only a portion of its total load served under this Rate Schedule, and is therefore paying the above charges pursuant to the billing associated with the firm portion of its load, the Customer Charge billed under this Rate Schedule will be zero ( $\$ 0.00$ ).

Rate Schedule 38 Energy Charge:
Interruptible Customers taking service on this rate will be billed an Energy Charge in each Billing Period equal to the sum of Hourly Energy Charges determined as follows:
$\qquad$

## RATE SCHEDULE 38 - INTERRUPTIBLE SERVICE (Cont'd)

## Rate Schedule 38 Energy Charge (Cont'd):

(i) For a Peak Hour, the Intercontinental Exchange (ICE) Day Ahead Mid-Columbia Peak Index for the applicable day of flow in $\$ / \mathrm{MWh}$; and For an Off-Peak Hour, the Day Ahead Mid-Columbia Off-Peak Index for the applicable day of flow in $\$ / \mathrm{MWh}$ (in either such case, the "applicable Mid-C Price"). In Hours in which the applicable Mid-C Price is negative, a value of $\$ 0.00 / \mathrm{MWh}$ will be used. In Hours in which the applicable Mid-C Price exceeds the cap, if any, nominated by the Interruptible Customer pursuant to the applicable Service Agreement, expressed in \$/MWh (the "Mid-C Price Cap") for the month in which such Hour occurs, a value equal to the Mid-C Price Cap will be used; and
(ii) System losses as per Rate Schedule 109;
(iii) Hourly Service Adder of $\$ 0.01000$ per kWh; and
(iv) Clean Market Adder (CMA)*

The Hourly Energy charge is calculated as:
(Energy Taken** (kW.h) x ( $1+$ loss rate \%)) $\times$ (applicable Mid-C Price $+0.0100+$ CMA)

* The CMA is currently $\$ 0.00$ per kW.h and will be adjusted based on applicable BCUC determinations.
** Energy Taken is equal to actual hourly consumption or as determined by Special Condition 3(b) if applicable.


## REASONS FOR INTERRUPTION:

The Suspension of Service for any of the following reasons is an Interruption for the purpose of this Rate Schedule:
a: To maintain service to Customers taking service under any of FortisBC's other rate schedules that is not designated as non-firm; or
b: To avoid any 3rd Party charges that may be levied against FortisBC related to Imbalance Energy; or
c: To maintain the stability, reliability, or integrity of the FortisBC or Western Interconnected electrical systems; or
d: Lack of available transmission on the FBC System and/or the path that includes 71 Line; or

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e: For Hours where FortisBC reasonably expects that the Energy Charge will be based on the Mid-C Price Capas described in part i) of the Energy Charge portion of this rate schedule, FortisBC may interrupt the Customer.

## RATE SCHEDULE 38 - INTERRUPTIBLE SERVICE (Cont'd)

## NOTICE OF INTERRUPTION:

FortisBC does not guaranty that prior notice of a pending or potential Interruption will be provided in any or all cases. However, FortisBC will endeavor to provide notice, where practicable.

## SPECIAL PROVISIONS:

1. Service under this Schedule is available for a minimum of 12 Months after commencement of Service.
2. The applicable Mid-C Price will be converted to \$CDN using the daily Bank of Canada rate and settled on a monthly basis.
3. Prior to taking service under this Schedule, and thereafter by January 31 of each year, the Interruptible Customer will provide to FortisBC an hourly anticipated load forecast for the premise being served under this Rate Schedule for the following five years. The forecast must be the same number for any one day or days, consistent with the scheduling of the Mid-C on- and off-peak hours for that day or days. Anticipated changes to this load forecast are to be communicated by the Interruptible Customer to FortisBC within the timeframes provided by FortisBC.
a. If the Interruptible Customer's actual hourly consumption is greater than that customer's forecast load for that hour, FortisBC will make a reasonable effort to serve the load but is under no obligation to do so. The customer may be asked to reduce load and failure to do so may result in interruption due to lack of supply. Energy Taken, for the purposes of billing in the Energy Charge section of this rate schedule, shall be based on actual consumption. The rate charged by FBC will not be impacted by increased consumption. .
b. Where the Interruptible Customer's hourly consumption is less than that customer's forecast load for that hour, and this is not due to a FortisBC curtailment of the Customer, Energy Taken, for the purposes of billing in the Energy Charge section of this rate schedule, shall be based on the customer forecast load for that hour. However, in recognition that power has been delivered to the FortisBC system and not consumed by the Customer, the Customer will receive a credit equal to the amount of energy it did not consume, grossed up for losses, multiplied by a rate equal to the lower of the BC Hydro RS 3808 Tranche One Energy rate and the Mid-C market-based rate being charged for that hour.

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Effective Date:
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## FortisBC Inc.

Electric Tariff
4. Energy provided under this Rate Schedule is non-firm and subject to interruptions that may be initiated through automatic means, or any other method when required at the sole discretion of FortisBC, for any of the reasons noted in the Reasons for Interruption or as set out in paragraph 11 below.
5. Existing Customers that move any portion of their existing load to this Rate Schedule willbe deemed to have terminated service under the Customer's current Rate Schedule for that portion. Where a Customer requires firm service for a portion of its load, adequate separation of firm service and service taken under this Rate Schedule must be established to facilitate both approved revenue metering and interruption as provided under this rate. A separate point of delivery for the firm service portion may be required at the sole discretion of FortisBC.
6. Jn cases where the Interruptible Customer chooses to have only a portion of its total load served under this Rate Schedule, the portion of the Customer's load that is not served under this Rate Schedule will be billed pursuant to the rate schedule that would otherwise be applicable to the Customer's total load, regardless of the magnitude of the load that is not served under this rate schedule.

## RATE SCHEDULE 38 - INTERRUPTIBLE SERVICE (cont'd)

## SPECIAL PROVISIONS (Cont'd):

7. The Interruptible Customer may request to transition or return to firm service under either Rate Schedule 30 or 31 by making an application through the existing FortisBC Industrial Electricity Interconnection process. Making such an application does not guaranty that firm service in the amount requested will be available at the desired location.
8. To receive and continue service under this Rate Schedule, the Interruptible Customer will install all necessary communication, relay and breaker equipment as may be required on an ongoing basis, subject to FortisBC approval, and will pay for all associated hardware costs. The Customer must maintain all FortisBC-approved equipment at the Customer's location necessary for FortisBC to remotely interrupt the Customer.
9. FortisBC shall not be liable for any loss or damage caused by or resulting from any Interruption of service or the non-provision of notice of any pending or potential Interruption.
10. Nothing herein prevents FortisBC from interrupting service for emergency circumstances, determined at FortisBC's sole discretion.
11. FortisBC maintains the right to place a cap on the aggregate MW accepted on the Interruptible Rate. The cap may be reviewed and revised from time to time. The current cap will be published on the FortisBC website.
12. FortisBC will determine upon Customer Application the amount of interruptible load, if any, that can be connected at the requested location.
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Schedule for the following five years. Anticipated changes to this load forecast are to be communicated by the
Interruptible Customer to FortisBC with as much notice as reasonably possible. $\boldsymbol{I}$
4. The Interruptible Customer is required to maintain a

Load Factor of $80 \%$ in order to receive service under this Rate Schedule unless otherwise agreed to by FortisBC. If 5.

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13. Interruptible Customers may meet the conditions to become a Registered Entity under the Rules of Procedure for Reliability Standards in British Columbia and, if so would be required to be compliant with applicable Mandatory Reliability Standards. All compliance activities are the sole responsibility of the Interruptible Customer.
14. Where FortisBC has made a contribution toward the costs of any Extension or System Upgrade required to provide service to an Existing Customer, and that Customer requests to transition to Interruptible Service, and the total billing revenue collected from the Customer to the time that service is initiated under this Rate Schedule is insufficient to cover that FortisBC contribution, the Customer will be required to repay the FortisBC contribution as follows:
a. Repayment Amount $=$ Amount of FortisBC contribution - (total revenue received from the Customer + any contribution amount that has been received from any additional Customer(s) connecting to the Extension).
$\qquad$

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[^0]:    1 TBD means To be determined - Customer request was not location specific.

[^1]:    2 https://www.fortisbc.com/services/commercial-industrial-services/industrial-electricity-interconnection

[^2]:    3 Compliance filing to Order G-40-19 dated June 26, 2019, FBC Electric Tariff.

[^3]:    4 Note that no actual spill takes place. It is a virtual spill under the terms of the CPA. In effect, FBC gives the energy to BC Hydro at no cost. This situation may arise in any year in which May to June energy is very low priced. In this circumstance, FBC will attempt to over buy energy to cover the possibility that July loads may be over plan plus obtain cheap energy to meet future RS 38 load. If the energy turns out not to be needed, then it is spilled at no or very minimal loss. If this energy can instead be sold to a RS 38 Customer, it is potentially a large gain for all other Customers.

[^4]:    6 Retrieved on September 12, 2022 from: https://docs.bcuc.com/Documents/Proceedings/2021/DOC 63911 B-1-FBC-LTERP-and-LongTerm-DSMPlan.pdf.
    7 Retrieved on September 12, 2022 from: https://docs.bcuc.com/Documents/Proceedings/2022/DOC 67356 B-27-FBC-Response-BCUC-Panel-IR2.pdf.

[^5]:    8 Principles of Public Utility Rates by James C. Bonbright, first published by the Columbia University Press in 1961.

[^6]:    9 Retrieved on September 12, 2022 from:
    https://fbcdotcomprod.blob.core.windows.net/libraries/docs/default-source/about-us-documents/regulatory-affairs-documents/electric-utility/fortisbcelectrictariff.pdf.
    10 Compliance filing to Order G-374-21 dated December 23, 2021, FBC Electric Tariff.
    11 Ibid.
    12 Ibid.
    13 lbid.

[^7]:    14 Retrieved on September 12, 2022 from: https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/corporate/tariff-iilings/electric-tariff/00-bch-oatt.pdf, p. 386.
    15 Posting of Transmission Service Business Practice, p. 6, Note to Table 2: Pricing for BC Hydro's Transmission Paths. Available at:
    https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/corporate/suppliers/transmissionscheduling/business practices/2016\%200ctober\%20-\%20Posting\%20of\%20Transmission\%20Service.pdf.

[^8]:    16 Retrieved on September 14, 2022 from:
    https://docs.bcuc.com/Documents/Other/2020/DOC 59455 G-256-20-BCH-TSMRPR-IER-FinalOrderReasons.pdf.

