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August 19, 2019

Via email

British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, British Columbia V6Z 2N3

Attention: Patrick Wruck, Commission Secretary

Dear Mr. Wruck:

Re: Corix Multi-Utility Services Inc. Dockside Green Energy Revenue Requirement Application – Response to BCUC Information Request No. 2

Corix Multi-Utility Services Inc. ("Corix") hereby submits its response to the British Columbia Utilities Commission ("BCUC") information request ("IR") No. 2 for the subject proceeding. Corix respectfully requests that the confidential financial models provided in response to BCUC IR No. 2 be kept confidential to protect Corix's business interest.

All of which is respectfully submitted,

Corix Multi-Utility Services Inc.

Per:

Travis Hickford-Kulak
President, Energy Services Canada

A. INTERIM RATES AND TARIFF TERMS AND CONDITIONS

16.0 Reference: INTERIM RATES AND TARIFF TERMS AND CONDITIONS
Exhibit B-4, BCUC IR 1.1
Fixed Charge Rate Rider

In response to British Columbia Utilities Commission (BCUC) information request (IR) 1.1, Corix Multi-Utility Services Inc. (Corix) stated the following:

> Corix proposes to use the RDDA [Revenue Deficiency Deferral Account] to address the 2019 difference in revenue between the interim rates and the final approved rates. The incremental revenue caused as a result of proposed rates that are higher than interim rates would be added to the RDDA balance at the end of 2019 with adjustments made for interest at Corix's weighted average cost of capital…Should the difference in annual revenue between proposed rates and interim rates be greater than $16,800, then Corix proposes to recover this difference plus interest over 12 months through a Fixed Charge Rate Rider beginning January 1, 2020. The figure of $16,800 represents $200 per month for 12 months for the 7 connected customers.

16.1 Please fully explain why Corix is now proposing to use a Fixed Charge Rate Rider to recover any difference between interim and permanent rates greater than $16,800, rather than recording the difference in the RDDA.

Response:
Corix proposes to recover any difference between interim and permanent rates through a rate rider as this approach provides and promotes transparency in clearly identifying the difference in revenue between the 2019 interim and permanent rates. However, the use of rate riders could result in customer confusion with the tariff/bill and additional costs incurred by Corix to address customer queries/concerns regarding the rate rider. In addition, DGE is in a unique circumstance whereby the RDDA began with a negative balance (available funds). The shortfall in revenue each year is withdrawn from the available funds in the RDDA. Corix's proposal would mitigate (i) potential customer confusion and associated additional costs; and (ii) unnecessarily burdening the RDDA with the recovery of material amounts above the threshold. Amounts below the threshold are considered to be marginal and could be recovered from the RDDA.

A fixed charge rate rider is being proposed to ensure recovery of the difference between proposed rates and interim rates within a specified timeframe (12 months). Recovery through a variable charge rate rider is susceptible to varying customer consumption and could also result in additional interest costs at Corix's weighted average cost of capital if the recovery period is more than 12 months.

16.1.1 As part of the above response, please explain how Corix's revised Fixed Charge Rate Rider proposal is consistent with a levelized rate design approach.

Response:
Corix's proposal only introduces a Fixed Charge Rate Rider above a specified threshold

of $16,800. This is more than two times (2x) the anticipated difference in annual revenue between interim and proposed rates for DGE ($6,971 calculated in Corix's response to BCUC IR 1.1). The fixed charge rate rider revenue would be used to credit the RDDA to bring it back to the level that it would have been had permanent rates been set from January 1, 2019. This is consistent with the financial model's calculation of the proposed levelized rates, which assumes permanent rates effective January 1, 2019 and excludes the use of the RDDA to recover a shortfall in 2019 due to the use of interim rates.

16.2 Please explain why Corix considers it reasonable from a rate impact perspective to collect the difference between interim and permanent rates over 12 months as opposed to smoothing the rate impact through the RDDA. As part of this response, please provide the total bill impact in 2020 of the proposed inclusion of the Fixed Charge Rate Rider coupled with the proposed three percent increase to levelized rates.

Response:
If a typical RDDA was used to recover the difference between interim and permanent rates, the difference would be spread out over the life of the RDDA. However, DGE's situation is unique in that the RDDA began with a surplus of $1,000,000 (negative balance). Whenever there is an annual shortfall in revenue a withdrawal is made from the surplus balance equal to the amount of the revenue shortfall. If the BCUC were to approve the proposed rates before the end of 2019, and direct Corix to use the RDDA to recover the difference between interim and permanent rates for DGE, then the revenue shortfall for 2019 would not be smoothed out over several years. Instead, it would be recovered all at once at the end of the year (2019). Conversely, the use of the fixed charge rate rider would lead to the recovery of this amount spread out over 12 months throughout 2020.

<u>Total Bill Impact of Fixed Charge Rate Rider</u>
2019 Difference between Proposed and Interim: $6,971
2020 Forecast Floor Area: 32,343 sq. metres
2020 Monthly Fixed Charge Rate Rider: $0.0180 per sq. metre

Based on 2018 consumption, a customer with a 1,000 square foot (93 square metre) residential suite with an annual consumption of 5,882 kWh would experience an increase of 7.52% or $54.00/year ($4.50/month) on their annual 2020 energy bill with the fixed charge rate rider included.

16.3 Please explain how Corix arrived at the proposed dollar threshold of $16,800, or $200 per month for 12 months for the 7 connected customers, and explain why Corix considers this an appropriate threshold to implement a Fixed Charge Rate Rider.

Response:
Corix believes that this $2,400 ($200 per month for 12 months) was a reasonable threshold for each of the 7 building connections (Corix customers) based on historical 2018 revenue from each Corix customer.

16.4 Please clarify the basis on which the interest on the difference between interim and permanent rates would be calculated in the event Corix is approved to implement the Fixed Charge Rate Rider (i.e. short term interest, weighted average cost of debt, weighted average cost of capital).

Response:
Corix is proposing to utilize its Weighted Average Cost of Capital to calculate the cost of capital on the difference between interim and permanent rates.

16.4.1 If the response to the above IR is not short term interest, please explain why Corix's proposed treatment is appropriate given the short term over which the interim versus permanent rate variance would be collected. Please reference other BCUC determinations regarding the interest applied on the difference between interim and permanent rates for other regulated utilities as part of this response.

Response:
Per prior directive from the BCUC, Corix is presently accruing interest charges for the benefit of rate payers on the negative balance in the RDDA based on its Weighted Average Cost of Capital. Had the Permanent Rates been in effect from the start of 2019, the difference between the Permanent Rates and the Interim Rates would have manifested through an increase or decrease in the negative RDDA balance. Therefore, the use of Weighted Average Cost of Capital represents the true cost that Corix will have incurred due to a shortfall in revenue, or conversely the true benefit that Corix will have received due to an excess of revenue.

17.0 Reference: INTERIM RATES AND TARIFF TERMS AND CONDITIONS
Exhibit B-4, BCUC IR 1.2
Tariff Terms and Conditions

In response to BCUC IR 1.2, Corix outlined the substantive differences between its revised terms and conditions and those of DGE LLP's:

> 2. Late Payment Charge. The DGE LLP tariff has a $15.00 threshold for issuing an overdue invoice with a late payment charge. The Corix tariff does not have a similar threshold. The Corix tariff also has an additional collection charge where "Customer's account is overdue and requires additional effort to collect." The collection charge is set out in the rate schedule. [*Emphasis added*]
>
> …
>
> 6. Charges on Termination. The Corix tariff states that if the Customer terminates the Customer Agreement, the Utility may charge the Customer the cost of all infrastructure associated with the provision of services to the Customer if the Utility determines that such charge is necessary to ensure other Customers on the system are not adversely impacted by Customer's termination of the Customer Agreement. The DGE LLP tariff does not contain a similar provision. [*Emphasis added*]

17.1 Please explain in detail what is meant by "additional effort" in reference to the additional collection charge. How does Corix determine when this charge is applied?

Response:
In this case, "additional effort" means any action undertaken by Corix, or a third party on Corix's behalf, to collect customer payments on overdue accounts following Corix's issuance of a "further bill" (as referenced in section 14 of the Terms and Conditions of Customer Service). Such action may include, without limitation: making telephone calls to a Customer; sending further bills or written communication to a Customer; or referring the matter to a third-party collection service. The collection charge applies automatically to any account that is overdue and any portion remains unpaid after Corix issues the second or further bill and takes further action to collect.

17.2 Please provide a breakdown and description of the costs comprising the $45.00 Collection Charge.

Response:
This charge was structured and is meant to recover the minimum cost incurred by Corix in respect of additional efforts as outlined in response to BCUC IR 17.1 above.

17.3 Please explain in detail what is meant by "adversely impacted" in reference to the charges on termination. How does Corix determine if other customers are adversely impacted?

Response:
Corix is proposing a 5-year rate levelization period whereby rates are determined based on forecasted annual revenue requirements, annual revenue and deferral account balances for each of the years during such levelization period. If one of the customers were to terminate service, then this would lead to a reduction in annual revenue over the remainder of that levelization period. This would adversely affect the remaining customers, as the levelized cost of service would now have to be recovered from the remaining customers, leading to an increase in their cost of service respectively. The termination charges recognize that the cost of infrastructure incurred to serve a customer will be recovered over a number of years through the use of levelization.

B. PROJECT DESCRIPTION

18.0 Reference: AMENDMENTS TO APPLICATION
Exhibit B-3 (Amended Application), Cover Letter, p. 2; Exhibit B-1, pp. 32–33
Use of the Cleaver-Brooks Boiler

On page 2 of the Cover Letter to the Amended Application, Corix states the following:

> Corix now proposes to lay-up the Cleaver-Brooks natural gas boiler once the three condensing natural gas boilers are connected to the DGE district energy system. This amended proposal means the Cleaver-Brooks boiler would be disconnected from the district energy system and shut down until the next time it is required to provide system back-up and redundancy. Based on the buildout schedule, Corix is able to lay-up the boiler until 2029, which is when incremental capacity will be required to provide system back-up and redundancy for the three natural gas boilers proposed to be installed in 2019. In the base case Corix now forecasts the reconnection of the Cleaver-Brooks boiler in 2029 to provide system back-up and maintain a redundancy not less than 70%. It should be noted that prior to when the additional incremental capacity is required (anticipated to be 2029), Corix would assess several options for providing system back-up and redundancy. While the current base case incorporates the reconnection of the Cleaver-Brooks boiler in 2029, Corix will determine the appropriate course of action and seek the relevant approvals from the BCUC closer to that time.

18.1 Please discuss the likelihood that the Cleaver-Brooks boiler will be reconnected in 2029 versus the likelihood of Corix using another option for providing system back-up and redundancy at that time.

Response:
At this time Corix is unable to discuss the likelihood of reconnecting the Cleaver-Brooks boiler in 2029 versus the likelihood of using another option for providing system back-up and redundancy

at that time. Several factors will play into Corix's decision prior to when the additional incremental capacity is required. Each of these factors will be assessed at that time, including the buildout and load demand, available technology, legislation and government policies, and the potential impact to customer rates of the available options.

18.2 Please discuss if Corix explored disposing of the Cleaver-Brooks boiler at this time, and then assessing options for system back-up and redundancy when needed. Please discuss the merits and downsides of such an approach, including any proceeds Corix could expect to receive by disposing of the Cleaver-Brooks boiler at this time.

Response:
Corix purchased all assets of DGE for $1, including the Cleaver-Brooks boiler. Corix has evaluated many options in respect of this boiler and determined that at this time, the cost of removal and disposal would likely far exceed and any potential sale value of the asset and therefore disposition would likely lead to unnecessary cost burden to ratepayers.

18.3 Please discuss if having the Cleaver-Brooks boiler inactive for a period of 10 years will affect its future performance. Is there any degradation that could be expected to occur due to not being in use? Please discuss.

Response:
No. Corix will undertake the specific steps to properly lay-up the boiler in a manner that preserves its parts and associated equipment.

On page 2 of the Cover Letter to the Amended Application, Corix also states: "This change impacts the 2029 Operating costs due to staffing requirements associated with the use of the Cleaver-Brooks boiler, and has only a minimal impact to the 2029 capital costs (reconnection costs)."

18.4 Please further explain how the proposed change impacts the staffing requirements associated with the use of the Cleaver-Brooks boiler in 2029.

Response:
Pursuant to the Boiler, Pressure Vessels and Refrigeration Regulations (under the *Safety Standards Act*), a full time operator is required in an energy plant with a total boiler surface area greater than 150m^2. The combined surface area of the three hydro-therm condensing boilers (TEC1 boilers) is 28m^2 and therefore these boilers do not require a full time operator. The Cleaver-Brooks boiler has a total surface area of 162m^2. If the Cleaver-Brooks boiler is reconnected in 2029 this would result in increased staffing requirements in order to be compliant with the relevant regulations under the *Safety Standards Act*.

On pages 32 and 33 of the Application, Corix states that once Technical Safety BC (TSBC) approves the move from General Supervision to unmanned plant status, the Full Time Equivalent (FTE) allocation reduces to 0.50.

18.5 Please explain if, as a result of Corix's revised proposal to lay-up the Cleaver-Brooks natural gas boiler once the three condensing natural gas boilers are connected to the DGE system, Corix expects that the FTE allocation will be further reduced from the 0.50 allocation estimated in the Application. If yes, please explain by how much. If no, please explain why not.

Response:
No. The district energy system, inclusive of plant, distribution and energy transfer stations, all still require routine and regular preventative and predictive maintenance. The forecasted 0.5 FTE is anticipated to cover the man-hours needed to preform such tasks associated with Corix's asset management program.

18.5.1 As part of the above response, please explain if any other costs are now expected to be lower as a result of the revised proposal, such as plant maintenance.

Response:
No further reductions are expected. The reduction of 0.5 FTE from 1.0 is all Corix expects to realize.

19.0 Reference: PROJECT DESCRIPTION
Exhibit B-4, BCUC IR 4.4
Current Configuration

In response to BCUC IR 4.4, Corix stated the following:

> As discussed in the response to 4.1 much of the existing biomass equipment is in a state of disrepair. As such, there is little or no value other than scrap value for this equipment. Corix has not pursued the option of disposing of this equipment.

19.1 Please provide an estimate of the (i) removal cost and the (ii) scrap value of the existing biomass equipment.

Response:
Corix estimates a minimum cost of approximately $1 million to remove and scrap the existing biomass equipment. Please note that due to anticipated expense, Corix has not undertaken or engaged with a third party professional to quantify this estimate and this is a preliminary, very high-level estimate based on similar plant removal experiences.

C. FINANCIAL MODELING AND INPUTS

20.0 Reference: PROJECT COST ASSUMPTIONS
Exhibit B-4, BCUC IR 6.6, 6.6.1; Exhibit B-1, p. 28
Exemptions

On page 28 of the Application, Corix lists five specific items which it states it has excluded from the project cost estimates.

In BCUC IR 6.6 and 6.6.1, Corix was asked to provide a detailed description of each of the five items, including an explanation of the types of hazardous materials that Corix might potentially encounter.

In response to BCUC IR 6.6 and 6.6.1, Corix stated: "The above items in relation to the scope of work being contemplated are unknowns and therefore Corix has not accounted for any costs in respect of these specific items."

20.1 Please explain why Corix is able to identify and classify these items but is not able to provide a qualitative description of the five items, as requested in BCUC IR 6.6 and 6.6.1.

Response:
Corix considered that these costs are outside of Corix's control, but that may occur during the course of construction. However, they are all unknowns. Through the course of detailed engineering design and during the progression of project execution, Corix will be better able to understand and provide a more detailed quantitative and qualitative analysis of each of these items.

20.1.1 As part of the above response, please provide descriptions of the five items to the best of Corix's ability to better clarify the nature of each of the five items listed on page 28 of the Application.

Response:
Each of these costs are described below:

i. **Geotechnical work** – These are costs related to unknown and unforeseen ground conditions that may impact or influence structural considerations.
ii. **Hazardous materials identification and remediation** – These are costs related to contaminated soils that may need to be specifically and safely dealt with in a manner consistent with processes defined under associated regulations.
iii. **Allowances for utility conflicts** – These are costs related to construction activities , such as earthworks activities, where unidentified utility infrastructure is unearthed during the course of excavation.
iv. **Cost premiums due to critical shortages of labour and/or materials** – These are costs incurred in relation to market conditions. If there is a large amount of similar type construction projects underway this can and could affect tender prices depending on whether or not specific trades and workforces are available to undertake the work.
v. **Changes to development schedule or scope** – These are costs related to developer based changes such as timing and densities (changes to zoning and siting).

20.1.2 Based on Corix's operational experience with DGE, please generally discuss the likelihood of issues being encountered related to each of the five items identified on page 28 of the Application.

Response:
Please see the table below.

Item	Exemptions	Likelihood (High/Medium/Low)	Comments
1	Geotechnical work	Low/Medium	Since the developer is contractually bound to provide and pay for civil services in relation to DPS installation Corix does not expect the risk to be very high although there may be circumstances where mechanical works are impacted by unforeseen geotechnical issues.
2	Hazardous materials identification and remediation	Low/Medium	It is already known that the lands the Dockside Green reside on are deemed to be contaminated. However, since the developer is contractually bound to provide and pay for civil services in relation to DPS installation Corix does not expect the risk to be very high although there may be circumstances where mechanical works are impacted by unforeseen issues.
3	Allowances for utility conflicts	Low	The developer is contractually bound to provide and pay for civil services in relation to DPS installation.
4	Cost premiums due to critical shortages of labour and / or materials	Medium	Corix has experienced increases in costs due to market demand on other utility construction projects, furthermore Corix does not have any influence or control over market conditions and therefore feels that this remains at a medium level risk.
5	Changes to development schedule or scope	High	While Corix remains in very close contact with developers it does not control the timing of when buildings are constructed. Based on recent observations in ongoing development delays, Corix deems this risk to remain at a high level.

21.0 Reference: PROJECT COST ASSUMPTIONS
Exhibit B-4, BCUC IR 6.10, 6.11; Exhibit B-3, Amended Table 11; Exhibit B-3-1, Confidential Financial Model, Capital Tab
2018 Development/Legal/Project Management Costs

In response to BCUC IR 6.10, Corix provided a breakdown of the 2018 Project Development/Legal/Project Management Costs and stated that the correct figure is $23,461:

Development/Legal/Project Management Costs	2018
Corix Staff Time & Travel Costs – D2 Building	419
FVB Energy Inc. – DGE Feasibility Study (Nov 2018 Invoice)	8,607
FVB Energy Inc. – DGE Feasibility Study (Oct 2018 Invoice)	8,840
Corix Staff Time – Assessing utility prior to acquisition	5,595
Total	**$23,461**

In response to BCUC IR 6.11, Corix provided breakdowns of Project Development/Legal/Project Management Costs, including a 2018 amount of $23,731:

Dev/Legal/PM	2018	2019	2020	2023	2026	2029	2032
Development Costs	17,866	49,000	--	--	--	--	--
Corix Project Man – CEP	5,865	76,500	--	--	--	1,900	--
Corix Project Man – DPS	--	4,600	2,000	23,700	10,800	13,200	13,700
Corix Project Man – ETS	--	18,400	18,700	79,500	42,200	67,100	47,500
Corix Project Man – TECE	--	6,900	--	--	--	--	--
Total	**23,731**	**155,400**	**20,700**	**103,200**	**53,000**	**82,200**	**61,200**

In the Amended Table 11 of the Amended Application, Corix shows 2018 Project Development/Legal/Project Management Costs of $23,731.

In the Capital Tab of the Amended Financial Model filed confidentially as Exhibit B-3-1, the 2018 Project Development/Legal/Project Management Costs are $23,731.

21.1 Please clarify Corix's response to BCUC IR 6.10 that the correct figure is $23,461.

Response:
The correct figure is $23,461. Please see the confidential financial model provided in response to BCUC IR 24.1.1 for the updates.

22.0 Reference: FIXED OPERATING COSTS
Exhibit B-4, BCUC IR 8.8, 8.9
Management/Administration and Overhead Charge

In response to BCUC IR 8.8, Corix provided the following breakdown of the Management/Administration and Overhead Charge:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Corporate	500	500	500	500	500	500	500	500	500	500	500	500	6,000
Legal													
- Internal	850	850	850	850	850	850	850	850	850	850	850	850	10,200
- External			3,500			3,500			3,500			3,500	14,000
Accounting	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	30,000
Regulatory	850	850	850	850	850	850	850	850	850	850	850	850	10,200
Human Resources	350	350	350	350	350	350	350	350	350	350	350	350	4,200
IT Support/Maintenance	450	450	450	450	450	450	450	450	450	450	450	450	5,400
CUI Management/Admin	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	30,000
	8,000	8,000	11,500	8,000	8,000	11,500	8,000	8,000	11,500	8,000	8,000	11,500	110,000

CUI	30,000
CII	80,000
Total	**110,000**

In response to BCUC IR 8.9, Corix provided the following breakdown of the Management/Administration and Overhead Charge for the University of British Columbia (UBC) Neighbourhood District Energy System (NDES):

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Legal													
Internal	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	18,000
External	1,750	1,750	1,750	1,750	1,750	1,750	1,750	1,750	1,750	1,750	1,750	1,750	21,000
Accounting	1,638	1,638	1,638	1,638	1,638	1,638	1,638	1,638	1,638	1,638	1,638	1,638	19,650
Regulatory													-
Reg	900	900	900	900	900	900	900	900	900	900	900	900	10,800
Acct Support	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	18,000
CUI Management/Admin													
Admin	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	16,800
Mgr	1,904	1,904	1,904	1,904	1,904	1,904	1,904	1,904	1,904	1,904	1,904	1,904	22,850
IT Support/Maintenan	650	650	650	650	650	650	650	650	650	650	650	650	7,800
Telephone	50	50	50	50	50	50	50	50	50	50	50	50	600
Vehicle Costs	650	650	650	650	650	650	650	650	650	650	650	650	7,800
	11,650	11,650	11,650	11,650	11,650	11,650	11,650	11,650	11,650	11,650	11,650	11,650	143,300

CUI	39,650
CII	103,650
Total	**143,300**

22.1 Please explain why the DGE costs include a "Corporate" expense of $500 per month and a "Human Resources" expense of $350 per month but there are no such expenses included in the UBC NDES' breakdown of overhead charges.

Response:
The Corporate and HR expenses shown in the DGE breakdown but not the NDES breakdown were costs that were previously applied and recovered as a unit rate applied to all rates used in each respective category listed under the NDES forecast. In an effort to be more transparent Corix is no longer applying the unit rate for Corporate and HR support services and is instead identifying the cost(s) forecast for each of these support services separately.

22.2 Please explain what the quarterly External Legal charge of $3,500 for DGE is related to.

Response:
As part of each building connection Corix registers both a statutory right of way and covenant against title, this also requires a legal land survey to be completed. Corix does not possess the legal or technical expertise or capabilities in-house for this part of the process and therefore outsources this work to experts. The $3,500 per quarter is a forecast of what Corix expects to incur on average for those services.

22.2.1 As part of the above response, please explain why UBC NDES experiences monthly External Legal charges while DGE is forecast to experience quarterly charges.

Response:
The reasoning for quarterly versus monthly was simply for ease of forecasting. Since the financial outcome is an annual based cost of service, the yielding result remains indifferent of this change.

23.0 Reference: DEBT AND EQUITY FINANCING
Exhibit B-4, BCUC IR 10.3, 10.4, 10.4.1; BCUC Generic Cost of Capital Stage 1 Decision, p. 101
Equity Risk Premium

In response to BCUC IR 10.3, Corix confirmed that all of its BCUC approved Stream B utilities (excluding DGE) have an approved equity risk premium of 75 basis points (bps).

In response to BCUC IR 10.4, Corix provided the following risk comparison of DGE LLP and CMUS DGE to the benchmark utility FortisBC Energy Inc. (FEI):

Risk Categories	DGE LLP BCUC GCOC Stage 2 Proceeding[2]	CMUS DGE 2019 Rev. Req. and Rates App.
Competition Risk	Low under the terms of the agreement with the developer, buildings within the DGE site are attached to the utility	Low No changes since GCOC Stage 2 proceeding
Customer Load Risk	High very small customer base even at full build-out, variation of load between buildings difficult to predict.	High Original buildout forecast anticipated the Dockside Green Community to be complete by 2014. The current buildout forecast has an updated completion timeline of 2032. Sensitivity analysis in Amended Tables 3 and 21 show delays to buildout schedule would have a significantly negative impact to Corix's recovery of costs.
Development Cost Risk	High new technology with appreciably higher risks than benchmark	Medium Proven technology being used for the proposed levelized rate period (2019-2023)
Operating Cost Risk	Medium relatively higher risk of operating small district energy system than benchmark	Low Proven technology being used and DGE's operations are now well understood.
Rate Design Risk	Low Similar to benchmark	Low No changes since GCOC Stage 2 proceeding
Regulatory Risk	Medium Evolving market	Medium No changes since GCOC Stage 2 proceeding

In response to BCUC IR 10.4.1, Corix stated the following:

> DGE is a relatively small utility when compared to other Corix district energy systems. The Dockside Green development has experienced very slow growth since 2009 and the pace of future development is uncertain. As such, the customer load risk as identified in the previous question, remains high. These factors, which remain unchanged with the change in ownership structure, result in added risk for DGE when compared to Corix's other district energy operations. For these reasons Corix is not proposing any change to

the equity risk premium of 100 bps.

23.1 Please fully explain Corix's rationale for re-classifying the development cost risk as "medium" as opposed to "low".

Response:
Corix classified the Development Cost Risk as "Medium" due to uncertainty towards the latter part of the buildout schedule. At this point Corix only knows that DGE would require additional capacity in 2029 if there are no further delays to the buildout schedule and the actual diversified demand is equal to the forecast. For modelling purposes, Corix has forecasted the use of natural gas indefinitely. However, there is no certainty surrounding the type of technology that would be used to provide this additional capacity if required in 2029. Considerations for the technology chosen at that time will have to include government legislation and policy, updated buildout schedule and load demand, available technology, the remaining life of the TEC1 boilers and the impact to customer rates for each option. Due to the levelized approach that was used to develop the proposed rates for DGE Corix feels it is important to consider risk over a longer period of time rather than just the short term.

23.1.1 As part of the above response, please explain why utilizing natural gas boilers for the DGE system would result in a "medium" development cost risk level.

Response:
Please see the response to 23.1 above.

23.2 Please clarify based on Corix's response to BCUC IR 10.4.1 if Corix places the greatest weight on the Customer Load Risk category when assessing the reasonableness of maintaining a 100 bps risk premium for DGE.

Response:
Corix has not assigned distinct weighting percentages to risk categories due to the high-level qualitative nature of the analysis.

Customer Load Risk was rated as "High" in the BCUC GCOC Stage 2 Proceeding and is considered to be "High" in this Application. However, Corix believes that the current Customer Load Risk exceeds the Customer Load Risk considered in the BCUC GCOC Stage 2 proceeding. This is due to significant delays in development and the present uncertainty in housing prices and the housing market in general.

23.2.1 If yes, please explain why this is appropriate and why a reduction in two of the six risk categories (i.e. Development Cost Risk and Operating Cost Risk) would not warrant a reduction in risk premium.

Response:
Please see the response to 23.2 above. While two of the six risk categories have seen a reduction in risk, Corix considers that this is offset by an increase in the customer load risk category. This is not readily apparent due to the limited categories for used for assessing risk in these information requests (high, medium, low). However, it should be noted that after almost 11 years, DGE has only connected 24% of it's total forecast gross floor area (GFA) at full buildout. This is a significant delay from the approved 2008 CPCN, which forecasted full buildout to be complete by 2014.

While an analysis of the risk factors in isolation might initially suggest a reduction in the risk premium, Corix considers that the risk premium should stay at 100 bps for the following two reasons:

(1) Based on the risk matrix provided in response to BCUC IR 23.3, Corix believes that DGE should attract a higher risk premium than other utilities like (i) Corix's Burnaby Mountain District Energy Utility (BMDEU) (75 bps); (ii) Corix's UBC Neighbourhood District Energy System (NDES) (75 bps); or (iii) River District Energy (75 bps). For example, these utilities have displayed lower customer load risk. The GFA for the completed parcels for River District Energy represents 35% of the total GFA at full buildout, despite River District Energy having a full buildout load more than 2.5 times that of DGE's and having started development several years after DGE began.[1] The response to BCUC IR 23.3 presents a similar customer base analysis for the UBC NDES and the BMDEU.

(2) The historical equity risk premium for DGE LLP could arguably have been set to be higher than 100 bps as evidenced by the ultimate fate of the operations of the biomass plant and the financial fate of DGE LLP, which resulted in long-term debt of $4,843,001 which had to be addressed prior to the sale of the assets. Corix considers that the proposed equity risk premium of 100 bps would be more reflective of the current risk profile of DGE than it was in the past.

23.2.2 If no, please explain the weighting that Corix has applied to the six risk categories when determining that 100 bps is still a reasonable risk premium for DGE.

Response:
Please see the response to 23.2 above.

On page 101 of the BCUC Generic Cost of Capital (GCOC) Stage 1 decision (GCOC Stage 1 Decision), the BCUC stated the following:

> …the small size factor should be further considered in the Stage 2 proceeding, but only as one of the many business and financial risks small utilities or projects are exposed to. Utilities are encouraged to use other methodologies or approaches to justify their risk differential in relation to the benchmark…
>
> …The Panel notes that the Commission developed a risk matrix that has been used in various small TES utilities proceedings to evaluate overall risk of a given project. The "size" factor is one of the risk factors included in the matrix. The Panel recommends that the small utilities use this risk matrix attached as Appendix B to Order G-1-13 of the TELUS Garden Decision in the Stage 2 proceeding and for future projects to justify their case for the appropriate capital structure and risk premium over and above the benchmark ROE. For convenience, the risk matrix is attached in Appendix E of this decision.

23.3 Please complete the risk matrix referenced in the above preamble (and attached as Appendix E to the GCOC Stage 1 Decision) for DGE. Please include FEI, River District Energy, Corix BMDEU and Corix UBC NDES in the matrix. Please also provide each of the aforementioned utilities' risk premium (excluding the benchmark utility FEI).

Response:
Please see the risk matrix included in the attached non-confidential Microsoft Excel Document.

[1] River District Energy LP 2019-2023 Rates Application, p. 4.

24.0 Reference: FINANCIAL MODELING AND INPUTS
Exhibit B-4, BCUC IR 13.4, 15.2; Exhibit B-3, Amended Tables 17, 19
RDDA

In response to BCUC IR 13.4, Corix provided the following table:

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
(i) Opening Balance	(1,000,000)	(962,996)	(801,848)	(643,334)	(475,176)	(289,765)	(160,696)	(87,451)	(14,093)	15,002	(2,245)	(33,536)
(ii) Annual Additions	(15,225)	(54,181)	(44,835)	(34,700)	(23,731)	(13,975)	(7,698)	(3,150)	-	-	(1,110)	(1,040)
(iii) Annual Changes	52,228	215,330	203,349	202,858	209,142	143,044	80,944	76,508	29,095	(17,247)	(30,182)	34,577
(iv) Closing Balance	(962,996)	(801,848)	(643,334)	(475,176)	(289,765)	(160,696)	(87,451)	(14,093)	15,002	(2,245)	(33,536)	-

Amended Table 17 of the Application shows the energy costs and the revenue requirement for years' 2019 through 2023:

Amended Table 17: Revenue Requirements (Nominal $)

REVENUE REQUIREMENT	2019	2020	2021	2022	2023
Operating Costs	321,300	275,706	281,220	286,845	292,581
Natural Gas Cost	88,223	99,486	111,946	116,617	184,542
Electricity Cost	14,384	14,636	14,928	15,227	15,532
Total Energy Costs	**102,607**	**114,122**	**126,874**	**131,844**	**200,073**
Depreciation	1,240	34,111	35,721	35,721	35,721
Interest on Debt	8,585	24,849	24,708	23,750	30,052
Return on Equity/O&M Markup	20,910	16,126	16,574	22,852	37,449
Income Tax	0	0	0	0	0
Total Capital Related Costs	**30,735**	**75,087**	**77,003**	**82,323**	**103,223**
Revenue Requirement	**454,643**	**464,914**	**485,097**	**501,011**	**595,878**

Amended Table 19 shows the total revenue billed and the recovery of the revenue shortfall for years' 2019 through 2023:

Amended Table 19: Statement of Earnings

EARNINGS ($)	2019	2020	2021	2022	2023
Basic Charge Revenue	136,706	147,443	155,365	160,026	252,760
Variable Energy Charge Revenue	102,607	114,122	126,874	131,844	200,073
Total Revenue Billed	239,313	261,565	282,239	291,870	452,834
Recovery of Revenue Shortfall	215,330	203,349	202,858	209,142	143,044

In response to BCUC IR 15.2, Corix stated the following:

> Due to the difficulty in forecasting the use of a reconciliation account, and the use of the

RDDA to offset significant increases to customer rates, the financial model's energy costs impacts the RDDA. Should the BCUC approve Corix's proposal for a reconciliation account for energy costs, there will be no impact to the RDDA or levelized rate due to the difference between forecast and actual energy costs being captured in the reconciliation account.

24.1 Please confirm, or explain otherwise, that if the requested treatment of the variable energy costs and the reconciliation account is approved, both the Energy Costs component of the revenue requirement (e.g. $102,607 for 2019) and the Variable Energy Charge Revenue component of the total revenue billed (e.g. $102,607 for 2019) would be removed from the calculation of the Recovery of Revenue Shortfall amount and thus excluded from being added to (or subtracted from) the RDDA.

Response:
Confirmed.

24.1.1 If confirmed, please confirm and provide the associated supporting calculations, or explain otherwise, that the net impact on the Recovery of Revenue Shortfall amount and thus the net impact on the addition/subtraction to/from the RDDA would be zero (i.e. unchanged) from the amounts provided in line item (iii) of Corix's response to BCUC IR 13.4.

Response:
Confirmed. Please see the updated confidential model that was submitted regarding this information request. Rows highlighted in yellow on the "Forecast" tab have been updated to remove Total Energy Costs and the Variable Energy Charge Revenue from the calculations for the RDDA.

24.1.2 If not confirmed, please provide a revised table in the same format as was provided in response to BCUC IR 13.4 and provide all supporting calculations.

Response:
See response to 24.1.1 above.

25.0 Reference: FINANCIAL MODELING AND INPUTS
Exhibit B-4, BCUC IR 14.4
Bill Impact Analysis

In response to BCUC IR 14.4, Corix calculated the annual bill impact for BC Hydro and FEI customers given a set of scenarios.

25.1 Please provide the bill impact in dollars for a Corix customer, if the scenario were to occur where all of the following were to occur at the same time: (i) BC Hydro electricity rates increase by five percent; (ii) FEI gas rates increase by five percent; and (iii) the Basic Charge increases by three percent). What would the final impact be on the bill of a Corix customer?

Response:
In the financial model, Corix had utilized the BCUC approved 2019 rates for BC Hydro and FEI as the starting point for forecasts. These rates were then increased annually beginning in 2020 using the forecast methods described in Section 5.3.4 of the Application (the electricity rate escalator has since been revised to 2%). In order to respond to this IR, Corix has assumed the bill impact is focused on the rate change from 2019 rates to 2020 rates and the remainder of the proposed 5-year rate levelization period.

The following table provides the bill impact based on the scenario provided. This information is based on a customer with a 1,000 square foot residential suite and annual consumption of 5,882 kWh. This information is provided in detail in the "Bill Impact" tab of the confidential Excel file provided with the response to BCUC IR No. 25.1. The changes to the inputs are highlighted on the "Inputs" tab.

Year	Total Bill Impact (%)	Total Bill Impact ($)
2019	3.27%	$23
2020	2.83%	$20
2021	3.63%	$27
2022	3.22%	$24
2023	0.50%	$4