

REQUESTOR NAME: BC Sustainable Energy Association and Sierra Club BC
INFORMATION REQUEST ROUND NO: 1
TO: Corix
DATE: November 20, 2015
PROJECT NO: n/a
APPLICATION NAME: Corix Multi-Utility Services Inc. Application for a Certificate of Public Convenience and Necessity for Additional Capital and Amended Rates for UniverCity Neighbourhood Utility Service on Burnaby Mountain

1.0 Topic: Remedy Requested
Reference: Exhibit B-1, Application

On page 3, Corix states that “By filing this application, Corix applies for and seeks approval of the following:” and what follows are certain approvals under sections 45(i), 56, 60 and 61 of the Act regarding revenue requirements, rates, and accounting treatment. However, on page 8, Corix states that “By submitting this application to the BCUC, Corix applies for” two numbered items, the first of which is CPCN (not mentioned on page 3), and the second of which is comprised of rates items similar, but not identical, to the items listed on page 3. In particular, items 2.b.iv, 2.b.v, and 2.c.i on page 8 are different than the items on page 3.

1.1 Please confirm, or otherwise explain, that the list of requested approvals on page 8 is the current and complete list.

CORIX RESPONSE:

Page 8 provides the complete list of approvals sought.

1.2 Please provide a draft proposed order.

CORIX RESPONSE:

Please see Attachment One for the draft proposed order.

2.0 Topic: Deferral Account Recovery Period
Reference: Exhibit B-1, Application, p.25; Exhibit A-3, BCUC IR 9.1, 9.2

- 2.1 Further to Corix's response to BCUC IR 9.1 and 9.2, please set out the pros and cons to ratepayers of changing the deferral account recovery period from 20 years to 15 years.

CORIX RESPONSE:

Please see response to BCUC IR 9.4, also provided below.

Advantages:

- **Reduced financing costs:** A reduced recovery period results in lower overall costs to customers over time because the deferral account accrues financing charges on the debt and equity required to finance the balances from year to year.
- **Fairness between customers:** A reduced recovery period results in fewer costs being deferred to future periods and potentially being charged to different customers.

Disadvantages:

- **Rates:** A reduced recovery period results in higher rates to customer in the earlier years, although this is offset by lower financing costs in the long term.

3.0 Topic: Residents to be Served
Reference: Exhibit B-1, Application

"The NUS is currently serving the residential customers of Phase 3 and 4 of the UniverCity development. When the Phase 3 and 4 are fully developed, the NUS will provide services to the population estimated at 4,270 people. All residential customers are located within the originally identified geographic area." [p.38, underline added]

"At full build-out the community will be home to more than 8,000 residents and the development will consist of 4,600 units covering 3.6 million sq.ft. of gross floor area." [p.11, underline added]

- 3.1 Please explain the difference in the two estimates of future population. Are there phases beyond Phase 3 and Phase 4 before full build-out is achieved? Will not all of the residents at full build-out be served by the NUS?

CORIX RESPONSE:

The UniverCity development consists of four phases. Phases 1 and 2 were completed before the NUS development was approved. The NUS will only serve residents of Phases 3 and 4, therefore an estimated 4,270 people will be served by the NUS.

At the full build-out, the entire UniverCity community (Phases 1 through 4) will be home to an estimated 8,000 residents.

4.0 Topic: Energy Use Intensity

Reference: Exhibit B-1, Application, section 2.3.2, “Energy Loads and Annual Energy Demand”; Exhibit A-3, BCUC IR 13, 14

“Energy loads and annual energy demand is determined using the Energy Use Intensity (EUI). Typically feasibility studies use benchmarked EUIs that are adjusted to the requirements and conditions of the particular project.”

The EUIs used in the original studies were determined based on the development requirements to comply with the stringent energy efficiency requirements stipulated by the Trust. To date the actual operating data as well as design requirements from the building developers show that the originally estimated EUIs were aggressive and that the load requirements as well as annual energy demands are significantly higher than originally projected. It is important to note that the energy intensities vary by building and are significantly impacted by whether the units are owned versus rented.” [p.14, underline added]

- 4.1 Further to Corix’s response to BCUC IR 13 and 14, please explain what went wrong with the original EUI estimates and consequently the load forecast.

CORIX RESPONSE:

There are several potential reasons why the observed EUI values might be different from the 2011 CPCN forecast EUI values:

- The EUI values in the 2011 CPCN were estimates based on engineering criteria and these estimates may have been overly optimistic.
- Not all of the buildings that were constructed qualified for the density bonus, which implies these buildings were not constructed in accordance with the Trust’s guidelines designed to achieve the EUI values in the 2011 CPCN.
- Tenant behaviour may have a significant influence on energy use, however this is not something that was modeled.

- 4.1.1 Were the EUIs used in the original studies simply set at levels that would meet the Trust’s design requirements?

CORIX RESPONSE:

Yes the EUI’s were based on the Trust’s design guidelines.

- 4.1.2 Were the Trust’s design requirements expressed in terms of EUI, or some other criteria?

CORIX RESPONSE:

The Trust did not issue design requirements. The Trust issued design guidelines which provided developers with various options they may choose to pursue in order to meet the energy efficiency requirements required to receive a density bonus.

- 4.1.3 Did Corix or its consultants question whether the Trust's design requirements were realistic when the original load forecast was being done? If so, what was the outcome?

CORIX RESPONSE:

Corix considered the design guidelines to be a reasonable approach for encouraging the construction of energy efficient buildings, although as noted in the response to 4.1, the density bonus was optional.

- 4.1.4 Does the mention of "design requirements from the building developers" mean that the building developers were aware that the Trust's design requirements and the associated EUI estimate were unrealistic?

CORIX RESPONSE:

Corix cannot speak for the developers. Corix notes that some of the developers elected to construct buildings that met the Trust's guidelines and achieved a density bonus.

- 4.1.5 How do the observed EUIs compare with the design requirements from the building developers?

CORIX RESPONSE:

Corix is not privy to the building developer's design requirements.

- 4.2 Have the Trust's design requirements, as they may affect EUI, changed since the original studies, as a result of the actual operating experience?

CORIX RESPONSE:

Updated ASHRAE standards which buildings need to comply with as a part of the BC Building code now supersedes the UniverCity density bonus program and it is Corix's understanding that a new program may be implemented to incentivize developers.

- 4.3 On what type(s) of information (e.g., anecdotal, metering) is Corix able to conclude that EUIs are "significantly impacted by whether the units are owned versus rented"?

CORIX RESPONSE:

The information is anecdotal. Corix does not have any data to compare energy use in rented versus owned suites. Corix did not intend to definitively state that there is a measurable difference between energy use rates in rented versus owned suites.

- 4.3.1 Please confirm, or otherwise explain, that the rental units tend to have a higher EUI than the owned units.

CORIX RESPONSE:

Please see the response to 4.3. As the individual units are not metered (Corix meters energy at the building level) Corix has no data to determine this.

- 4.3.2 Please confirm, or otherwise explain, that the difference in EUI between rental and owned units is observed after taking into account differences between EUI by building.

CORIX RESPONSE:

EUIs for owned versus rented units are not known.

- 4.4 Does “the energy intensities vary by building” mean EUIs vary by building type (low-rise, high-rise), by design differences (e.g., window area, insulation type), by location (e.g., windy, sheltered), by ownership pattern (owner-occupied, rental)? What is Corix’s understanding of why EUIs vary by building?

CORIX RESPONSE:

EUI’s may be influenced by all of the parameters listed above in question 4.4. The industry uses an average for different types of buildings, including concrete and wooden structures. Based on an analysis of our metered data, to date none of the buildings of the same type have the same energy intensity profile.

5.0 Topic: Demand-Side Measures

Reference: Exhibit B-1, Application; Exhibit A-3, BCUC IR 16

- 5.1 Further to Corix’s response to BCUC IR 16, what if anything do the Trust’s requirements say about demand-side measures?

CORIX RESPONSE:

The SFU Community Trust land lease structure requires the developer entering into any lease agreement to:

- Connect to the DEU.
- Meet the provisions of Burnaby Zoning Bylaws for UniverCity Phase 3 and Phase 4, including the meeting and verification of the UniverCity Guidelines and Requirements; within this, the Green Building Requirements component has mandatory demand-side requirements.

The Demand Side Requirements as specified in Section 5.3 of the UniverCity Guidelines and Requirements are below:

5.3. Energy and Atmospheric Impacts

Intent: Reduce the use of non-renewable fossil fuel resources and decrease the impacts of greenhouse gas emissions.

Required Practices:

- 5.3.1 All buildings shall be designed to meet the BC Building Code (December 20, 2013), as demonstrated by successfully meeting ASHRAE 90.1-2010 or the National Energy Code of Canada for Buildings 2011 (NECB 2011). Buildings designed without a common corridor shall endeavor to meet or exceed EnerGuide for New Homes 80.
- 5.3.2 All buildings shall be connected to the existing District Energy System (DES) as per the specifications provided by the SFU Community Trust and the operating utility partner.
- 5.3.3 Hydronic Heating and domestic hot water, and make-up air units specified in the building shall be designed for and connected to the existing DES.
- 5.3.4 A Commissioning Agent shall perform Fundamental Building Systems Commissioning for all mechanical and heating systems and a request for commissioning documentation in all contract documents shall be required.
- 5.3.5 Wall performance in Part 3 buildings of predominantly concrete construction shall improve wall performance to R-15 overall, accounting for all thermal bridging.
- 5.3.6 All windows shall be specified with argon and warm edge spacers.
- 5.3.7 Roof insulation in buildings with wood-frame roof joists (typically wood frame construction), shall be a minimum R-37 to minimize losses and increase performance.
- 5.3.8 Only Energy Star rated dishwashers and refrigerators shall be installed, and Energy Star rated front-loading horizontal axis washing machines shall be installed if included as part of a base appliance package or as an optional appliance package.
- 5.3.9 Compact Fluorescents shall be specified for all exterior lighting affixed to the building and pedestrian scale site lighting, and common area interior lighting (hallways, lobbies, parkades, exit stairs).
- 5.3.10 Compact Fluorescents shall be specified for 100% of all fixtures in suites.
- 5.3.11 No gas fireplaces shall be specified. Should electric fireplaces be specified at the developer's discretion, they shall be heat source rated fireplaces connected to a room thermostat with automatic ignition and shall replace any other heat source within the specified heating area capacity of the fireplace (usually the room of installation).
- 5.3.12 No air conditioning shall be specified in residential units unless provided through a high energy efficiency space heating/ cooling mechanical system or alternate, approved by the Trust, with examples of approved systems being geothermal, water loop heat pump with condensing boiler, and radiant hydronic.

5.3.13 *Rough-in for solar hot water shall be provided for all buildings with centralised hot water distribution.*

5.3.14 *All building design concepts shall be subject to a pre-design energy utilization consultation with BC Hydro and Terasen Gas, or their approved agents (if available at time of preliminary conceptual design).*

5.2 Has Corix considered an inclining block rate as a way to reduce load? If so, what were the results? If not, why not?

CORIX RESPONSE:

Corix has not considered instituting inclining block rates at UniverCity. Energy is metered and billed at the building level. Under this arrangement individual tenants are typically allocated a portion of the energy bill based on suite floor area. Given these circumstances it is not clear what the implications on energy consumption would be if inclining block rates were instituted.

5.3 Please describe where metering occurs within the NUS, indicating whether the metering is or could be used for billing purposes. Are the energy transfer stations the last place where there is metering; do any of the units have metering?

CORIX RESPONSE:

See response to 5.2.

**6.0 Topic: Low Carbon Energy System
Reference: Exhibit B-1, Application**

“It should be noted that this CPCN relates only to the temporary natural gas energy system that is a precursor to a permanent low carbon energy system that will ultimately provide the energy needs of the community. The low carbon energy system will be the subject of a future CPCN application to the Commission.” [p.1]

6.1 What is the current status of the permanent low carbon energy system? How soon does Corix anticipate implementing it? What needs to happen before Corix is in a position to apply for a CPCN for the permanent low carbon energy system?

CORIX RESPONSE:

The permanent low carbon energy plant is expected to be in operation in 2018 / 2019. Corix is working with Simon Fraser University (SFU) on implementing a larger scale low carbon energy plant that would serve both SFU and the UniverCity residents. This combined project is subject to final approvals by the province of BC in 2016. Should the approval not be granted for the combined project, Corix will continue with the implementation of a smaller scale low carbon energy plant which will serve UniverCity residents only. The expected timing for the implementation of either the larger or the smaller plant is the same.

7.0 Topic: Consultation

Reference: Exhibit B-1, Application, section 3, Consultation

- 7.1 Has Corix conducted consultation, with ratepayers or more generally, regarding the present application? If so, please provide the results. If not, why not?

CORIX RESPONSE:

Corix provides regular updates on the status of NUS developments to its customers through both written materials and periodic meetings. Customers were notified of this CPCN application.

- 7.2 What is Corix's response to the comments on behalf of the owners, Strata Plan EPS1458, Exhibit C-3-1, regarding NUS rates?

CORIX RESPONSE:

Corix did not receive any information requests from Strata Plan EPS1458 as part of the registered intervener process. However, Corix looks forward to discussing its plans for developing the NUS and addressing any questions and concerns that customers may have at the upcoming Streamlined Review Process in December.

Attachment One:

Please find following, a draft proposed order.

DRAFT

IN THE MATTER OF
the *Utilities Commission Act*, RSBC 1996, Chapter 473

and

Corix Multi-Utility Services Inc.
Application for a Certificate of Public Convenience and Necessity for Additional Capital and
Amended Rates for UniverCity Neighbourhood Utility Service on Burnaby Mountain

BEFORE:

December 16, 2015

O R D E R

WHEREAS:

- A. On November 26, 2010, Corix Multi-Utility Services Inc. (Corix) filed an Application for a Certificate of Public Convenience and Necessity (CPCN) under sections 45 and 46 of the *Utilities Commission Act* (UCA) to construct and operate an alternative energy-based district energy system for the UniverCity residential community on Burnaby Mountain. Corix also sought approval under sections 56, 60, and 61 of the UCA for a deemed capital structure, return on equity, long term debt financing costs, a levelized rate structure and a revenue deficiency deferral account;
- B. On May 6, 2011, by Order C-7-11, the British Columbia Utilities Commission (Commission) granted a CPCN to Corix to construct and operate the initial phase of the Neighbourhood Utility Service (NUS) district energy utility at UniverCity using temporary natural gas central energy plants;
- C. On March 2, 2015, the Commission issued Order G-27-15 approving the Thermal Energy Systems Regulatory Framework Guidelines (TES Guidelines). The TES Guidelines require Stream B TES utilities, to file a CPCN in cases where the ratio of the sum of additional capital expenditures and planned capital expenditures compared to the approved capital in the original CPCN exceeds 1.0.
- D. On October 7, 2015, Corix filed an application for a CPCN for additional capital and amended rates for UniverCity NUS on Burnaby Mountain (Application), requesting approval under sections 45(i), 56, 60 and 61 of the UCA for expenditures to replace and expand the capacity of the existing temporary natural gas facilities (Project) with a larger capacity boiler, on the basis that when combined with expenditures on the NUS to date, the replacement triggers the requirement to file a CPCN under the TES Guidelines. As part of the Application, Corix also requested approval of amended levelized rates;
- E. Corix estimates the total cumulative capital costs of the Project for 2015-2020 to be approximately \$2,946,620 in nominal dollars. The Project relates only to the temporary natural gas energy system that is a precursor to a permanent low carbon energy system that will ultimately provide the energy needs of the UniverCity community. The low carbon energy system will be the subject of a future CPCN application to the Commission; and
- F. On October 23, 2015, by Order G-173-15 the Commission determined that a Streamlined Review Process was suitable for the review of the Application, set a preliminary Regulatory Timetable, and on December 16, the Streamlined Review Process took place.

DRAFT

NOW THEREFORE the Commission orders as follows:

1. A Certificate of Public Convenience and Necessity under Section 45 of the UCA is granted to Corix for the construction and operation for the expansion to the approved temporary natural gas UniverCity NUS at UniverCity, Burnaby, BC.
2. Approval is granted under Sections 45(9), 56, 60 and 61 of the UCA for the proposed revenue requirements, rate design and rates set out in the Application as follows:
 - a. the rate base as provided in Section 2.5.6 of the Application;
 - b. the revenue requirement as provided in Section 2.5.8 of the Application and consistent with the recent Commission decision in the Phase 2 Generic Cost of Capital proceeding applicable to small thermal energy utilities:
 - i. a deemed capital structure of 57.5 percent debt and 42.5 percent equity;
 - ii. long term debt financing costs estimated at 3.75 percent;
 - iii. a return on equity of 9.5 percent, which is based on the current low risk benchmark equity return plus 75 basis points to account for additional risk related to the development of the small scale energy utility;
 - iv. operating costs as set out in Section 2.5.4 of the Application; and
 - v. an 11-year levelized rate structure with an overall 15-year plan compared to the originally approved 20-year plan, as set out in Section 2.5.9 of the Application; and
 - c. the accounting treatment of the following:
 - i. An updated revenue deferral account which is used to record those portions of revenue requirements which are not recovered in the early stages of development, with the goal of complete recovery of the funds over the 15-year rate levelization period, as set out in Section 2.5.10 of the Application; and
 - ii. The rate design as set out in Section 2.5.11 of the Application.

DATED at the City of Vancouver, in the Province of British Columbia, this _____ day of _____, _____.

BY ORDER

Original Signed By: