



To: General Purposes Committee

Date: April 17, 2014

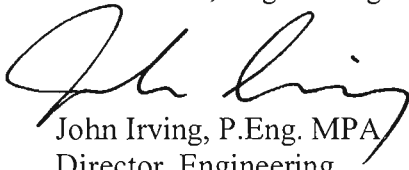
From: John Irving, P.Eng. MPA
Director, Engineering

File: 10-6600-10-03/2014-
Vol 01

Re: River Green District Energy Utility Service Area Bylaw No. 9134

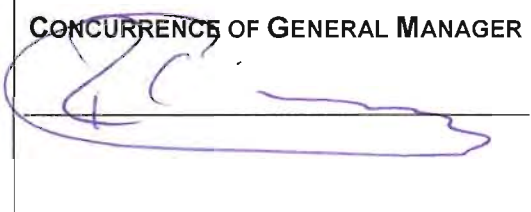


Staff Recommendation

The River Green District Energy Utility Service Area Bylaw No. 9134, presented in the “River Green District Energy Utility Service Area Bylaw No. 9134” report dated, April 17, 2014, from the Director, Engineering be introduced and given first, second and third reading.



John Irving, P.Eng. MPA
Director, Engineering
(604-276-4140)

Att. 1

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Finance Division	<input checked="" type="checkbox"/>	
Law	<input checked="" type="checkbox"/>	
Development Applications	<input checked="" type="checkbox"/>	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: 	APPROVED BY CAO 

Staff Report

Origin

As directed by Council in 2011, the City and Corix Utilities Inc. entered into a Memorandum of Understanding (MOU) to develop a district energy utility business and infrastructure plan to service the River Green development and the Richmond Olympic Oval area. For discussion purposes this has been referred to as the River Green District Energy Utility (RGDEU).

Based on the successful completion of Phase I (Due Diligence Phase) of the MOU, Council endorsed the following staff recommendations on July 22, 2013 to proceed to the Business & Infrastructure Agreement phase of the MOU:

“That

- 1. Staff be authorized to negotiate the business and infrastructure agreements with Corix Utilities Inc. for the River Green District Energy Utility under terms outlined in the memorandum of understanding between the City and Corix Utilities Inc, dated February 17, 2011;*
- 2. Staff be authorized to proceed with the preparation of the River Green District Energy Utility Phase 1 Service Area Bylaw based on the conceptual service area detailed in Attachment 4 to the staff report titled “River Green District Energy Utility”, dated June 27, 2013;*
- 3. Temporary and permanent energy centre site locations detailed in Attachment 4 to the staff report titled “River Green District Energy Utility”, dated June 27, 2013 be endorsed for the purposes of developing the Agreement and Bylaw under recommendations 1 and 2; and*
- 4. Staff be authorized to prepare a strategy to provide interim district energy services within City Centre Area but outside of the Phase 1 service area.”*

This report pertains to items #2 and #4 above. This opportunity directly aligns with Council’s Term Goals:

- 8.1. Continued implementation and significant progress towards achieving the City’s Sustainability Framework, and associated targets.
- 8.4. Review opportunities for increasing sustainable development requirements for all new developments, including consideration of increasing requirements for sustainable roof treatments (e.g. rooftop gardens, sola panels, etc.) and increasing energy security (e.g. use of local renewable energy sources, use of district energy systems, etc.).

Analysis

Development Activity

Phase 1 of the proposed RGDEU service area includes a range of mixed-use or multi-family residential buildings. Current developers include: Onni, Cressey, Intracorp, Amacon, Aspac and Polygon. Final occupancy for most projects is expected within the next 3+ years but the first phases of Polygon’s (Carrera) and Onni’s (Riva) projects have already begun construction, with

anticipated occupancy in the summer of 2015. Anticipated occupancy for the above projects is summarized in Table 1.

Table 1: Development Timing in RGDEU Service Area

	Anticipated Occupancy
Onni (Riva)	2015 (Summer)
Polygon (Carrera)	2015 (Summer)
Cressey (Cadence)	2016
Intracorp (River Park Place)	2016
Amacon (Tempo)	2016
Aspac (Parcel 9 & 12)	2016/2017

Proposed Bylaw and Service Area

Building on the Alexandra DEU Service Area Bylaw, a bylaw has been prepared for Phase 1 of the River Green DEU (Attachment 1). The Phase 1 service area defined in the bylaw includes all active developments in the Oval Village area as outlined above. As directed by Council, to consider interim DE services outside of the Phase 1 service area, an additional, non-contiguous site is also proposed to be included in the service area. Staff have been working with Polygon to provide heat and hot water services for their Carrera development located along Minoru Boulevard. As other developments emerge in the neighbourhood, staff will bring to Council options for expansion of the RGDEU service area boundary. To leverage economies of scale and realize the long-term social, economic and environmental benefits of the DEU, expansion to service future development is a key opportunity.

Benefits of scale relate to:

- Increasing distribution piping efficiency
- Balancing energy demand and load requirements across a broader customer base
- Maximizing potential for introducing waste heat as an energy source
- Facilitate fuel switching
- Increasing energy security and reliability of service
- Reducing greenhouse gas emissions

Proposed Rate Structure

The rate structure in the draft bylaw represents the blended rate that is equal to or lower than conventional energy costs (called the “business as usual” (BAU) costs that represent conventional baseboard and natural gas heating systems) for the same level of service. The BAU costs of energy for space heating and hot water heating are estimated to be between \$8.00 and \$9.00 per m²/yr (\$80-\$90 per MWh). Details on the BAU costs are provided in Attachment 2. For RGDEU, the rate structure will be refined once costs have been confirmed through the design and engineering phase. Staff will bring forward an amendment to the bylaw with a revised rate structure recommendation for Council’s consideration in early 2015. The rate in the bylaw is consistent with energy rate assumptions that were used for the purposes of business planning to determine the viability of DE in the River Green.

consistent with energy rate assumptions that were used for the purposes of business planning to determine the viability of DE in the River Green.

Staffing

The Chair of Lulu Island Energy Company will be considering additional staffing requirements as a result of the adoption of this bylaw. DEU in Richmond was established on the basis that all capital and operating costs will be recovered through revenues from user fees, making the DEUs financially self-sustaining over the long term. An estimated 0.3 - 0.5 FTE staff demand is anticipated to manage contracts and support implementation of RGDEU Phase 1 infrastructure. Due to ongoing growth and expansion of the Alexandra District Energy Utility (ADEU), implementation of DEU-ready buildings at the Building Permit stage, administration requirements to manage the establishment and management of Lulu Island Energy Company, and addressing business developing opportunities for DEU (e.g. Minoru Park new City facilities, City Centre north), the need for an additional staff member has been identified.

Stakeholder Consultation

Staff have been in contact and discussions with RGDEU developers and landowners throughout the due diligence and business and infrastructure agreements process with Corix. Staff also provide regular updates on RGDEU and ADEU through the Richmond Urban Development Institute (UDI) Liaison Committee. Meetings were held in January and February 2014 to review the draft Service Area Bylaw and Service Agreement with developers. The development community had a number of questions mostly related to the energy costs to end users and who will have the control over the setting customer rates. Other questions of concerns were identified are summarized in Table 1. Staff are confident that stakeholder concerns have been addressed in the proposed bylaw.

Table 1: Summary of Stakeholder Input

Question/Concern	Response
What will be the cost to the end users?	The cost to the customers will be less than or equal to conventional system energy costs based on the same level of service.
Who will have the control over up the rates?	Rates will be reviewed and determined by Council on yearly basis, consistent with current practice with ADEU.
The bylaw and servicing agreement requires that developers will be responsible to acquire easements from a third party if DE pipes cross properties. This should be the responsibility of the utility provider or City, not the developer.	The City modeled this provision on similar agreements currently used by other municipal DEU's and BC Hydro and Fortis. The City prefers that all servicing is provided through the fronting street, not across property lines. It may occur that pipes cross property lines and it is a good utility practice to ensure this provision is included in contracts. However, the City anticipates that it will be an extremely rare occurrence, if it occurs at all. A landowner would be required to obtain this easement through RZ or DP considerations no matter what the circumstances (similar to access rights for road, water, and sewer). Staff have changed the approach to indicate that the City would assume responsibility to acquire the easement but the developer assume the cost in response to developer concerns.

Question/Concern	Response
Can the City exclude properties west of the Oval as part of the Service Area Bylaw?	These lands were rezoned by the City and then sold some time ago. As the DEU was not planned at this time, the Title did not reflect DEU connection and DE-ready building requirements like recently approved buildings. However, in 2008, a Memorandum of Understanding was executed between the City and the landowner committing both parties to work together to assess the feasibility of a district energy utility for their developments. The landowner entered into the agreement based on the understanding that all developments in the area should have the same "level playing field" and connect to RGDEU. Since these lands have rezoning completed, we will not be able to connect them to RGDEU without their inclusion in the bylaw. Therefore, staff recommend maintaining these lands in the Service Area Bylaw.

Financial Impact

Adoption of the Bylaw and subsequent execution of the RGDEU agreements with Corix Utilities Services Ltd will commit the City to the development of the first phase of the DEU. A separate staff report presented options for Council to consider with respect to financial implications of entering into an agreement with Corix.

Conclusion

Establishment of the DEU's in the City represent one of the most significant advancements to date towards meeting the City's sustainability and GHG reduction goals. Staff recommend that the River Green District Energy Utility Bylaw No. 9134 be introduced and given first, second and third reading to facilitate the implementation of phase 1 of the RGDEU.



Peter Russell
 Senior Manager, Sustainability and District Energy
 (604-276-4130)

PR:pr

- Att. 1: River Green District Energy Utility Bylaw No. 9134
- 2: District Energy Rate Structure and User Cost Assumptions



River Green District Energy Utility

WHEREAS the *Community Charter* empowers the municipality to provide any service that the Council considers necessary or desirable.

WHEREAS the City of Richmond (the “City”) wishes to establish a service for the purpose of providing energy for space and domestic water heating and, when available, space cooling, to multi-family, residential, commercial, institutional and industrial buildings located within the City’s municipal boundaries as more particularly detailed in Schedule A to this Bylaw.

NOW THEREFORE the Council of the City of Richmond enacts as follows:

1. **Name of Bylaw.** This Bylaw shall be known and cited for all purposes as “River Green District Energy Utility Bylaw No. 9134.”
2. **Defined terms.** All capitalized terms used in this Bylaw and the schedules hereto have the meanings given in Schedule B to this Bylaw.
3. **Establishment.** Council hereby authorizes the design, construction, installation, operation, maintenance, repair, and management of a district energy utility system for the generation, storage, transmission, and distribution of energy for the space heating and domestic water heating at any Designated Property within the Service Area, including potential for such district energy utility system to be expanded to include space cooling services.
4. **Ownership of DEU.** Ownership of the DEU, including any expansion or extension of the DEU, is to remain vested in the City or the Service Provider, and their respective successors and assigns, and is not to pass to any Owner, or other person who has an interest in a Designated Property, and, despite any attachment or annexation to a Designated Property or other real property, the Distribution System, Service Connections, Meter Sets and Heat Exchangers are not to become part of a Designated Property or other real property.
5. **Mandatory Use of DEU.** Subject to the Service Provider providing Services pursuant to this Bylaw, each Owner of a new building proposed for construction or under construction within the Service Area after the date of enactment of this Bylaw, for which the City's Building Regulation Bylaw requires submission of a building permit application or issuance of final inspection notice permitting occupancy, to any one of which the Owner, as at the date of enactment of this Bylaw, is not yet entitled, will connect to and utilise the DEU for internal space heating and domestic hot water, and when available, space cooling, in accordance with the terms and conditions of this Bylaw.
6. **Permissive Use of DEU.** An Owner of an existing building located either inside the Service Area, or located outside the Service Area but within the City of Richmond, may apply to the City Engineer to utilize the DEU, and if:

- (a) the City Engineer is of the opinion that the DEU is capable of servicing the building that is the subject of the application;
- (b) the City Engineer is of the opinion that servicing the building is necessary or desirable; and
- (c) the Owner enters into an agreement with the City, in form and substance satisfactory to the City Engineer and City Solicitor, undertaking, among other matters, to wholly or partially, in the City's sole discretion, fund the capital cost of extending the DEU outside the Service Area to the Owner's building in an amount and at a time determined by the City Engineer;

the City Engineer may approve the application, in which case the Owner must utilize the DEU in accordance with the terms and conditions of this Bylaw.

7. **General Terms and Conditions.** The Services shall be provided and used in accordance with the terms and conditions described in Schedule B to this Bylaw.
8. **Rates and Charges.** The rates and charges payable in respect of the Services shall be those described in Schedule D to this Bylaw, which shall be based on the cost of providing, maintaining and expanding the Services and which may be different for different Designated Properties based upon the use, capacity and consumption of those Designated Properties. Unless otherwise indicated or advised by the Service Provider, all rates, charges and fees payable under this Bylaw are payable to the Service Provider.
9. **Operation.** The City may operate the DEU and provide the Services directly, or through one or more other Service Providers.
10. **Access.** The City authorizes its officers and employees and the officers, employees, agents, servants, contractors and subcontractors of the Service Provider to enter onto any property or into any building applying for, connecting or connected to or using the Services or required to apply for connect to and use the Services to connect or disconnect the Services and to inspect and determine whether all regulations, prohibitions and requirements contained in this Bylaw and the General Terms and Conditions are being met, or for any other related purpose which the Service Provider requires.
11. **Security.** The City authorizes its officers and employees and the officers and employees of the Service Provider to require persons applying for, connecting or connected to or using the Services to provide security with respect to the Services in an amount determined by the City or the Service Provider, in accordance with the General Terms and Conditions.
12. **Discontinuance.** The City or the Service Provider may discontinue providing the Service to a person or property in accordance with and for the reasons specified in the General Terms and Conditions, including because of:
 - (a) unpaid fees or taxes in relation to the Services;

(b) failure to furnish required security; or

(c) non-compliance with the General Terms and Conditions or the provisions of this Bylaw.

13. **Notice of discontinuance.** The City or the Service Provider may discontinue providing the Service to a person or property upon providing not less than 48 (forty-eight) hours written notice outlining the reasons for the discontinuance, unless the discontinuance is for any one or more of those reasons specified in the General Terms and Conditions for which no notice of discontinuance is required.

14. **Headings and Table of Contents.** The division of this Bylaw and the General Terms and Conditions into sections and the insertion of any table of contents and headings are for convenience of reference only and shall not affect the construction or interpretation of the Bylaw or the General Terms and Conditions.

15. **Severability.** Each provision of this Bylaw is intended to be severable and if any provision is determined by a court of competent jurisdiction to be illegal or invalid or unenforceable for any reason whatsoever such provision shall be severed from this Bylaw and will not affect the legality, validity or enforceability of the remainder of or any other provision of this Bylaw.

16. **Schedules.** The following schedules are incorporated into and form part of this Bylaw:

- Schedule A - Boundaries of Service Area
- Schedule B - General Terms and Conditions
- Schedule C - Fees
- Schedule D - Rates and Charges

17. This Bylaw is cited as “**River Green District Energy Bylaw No. 9134.**”

FIRST READING

SECOND READING

THIRD READING

ADOPTED

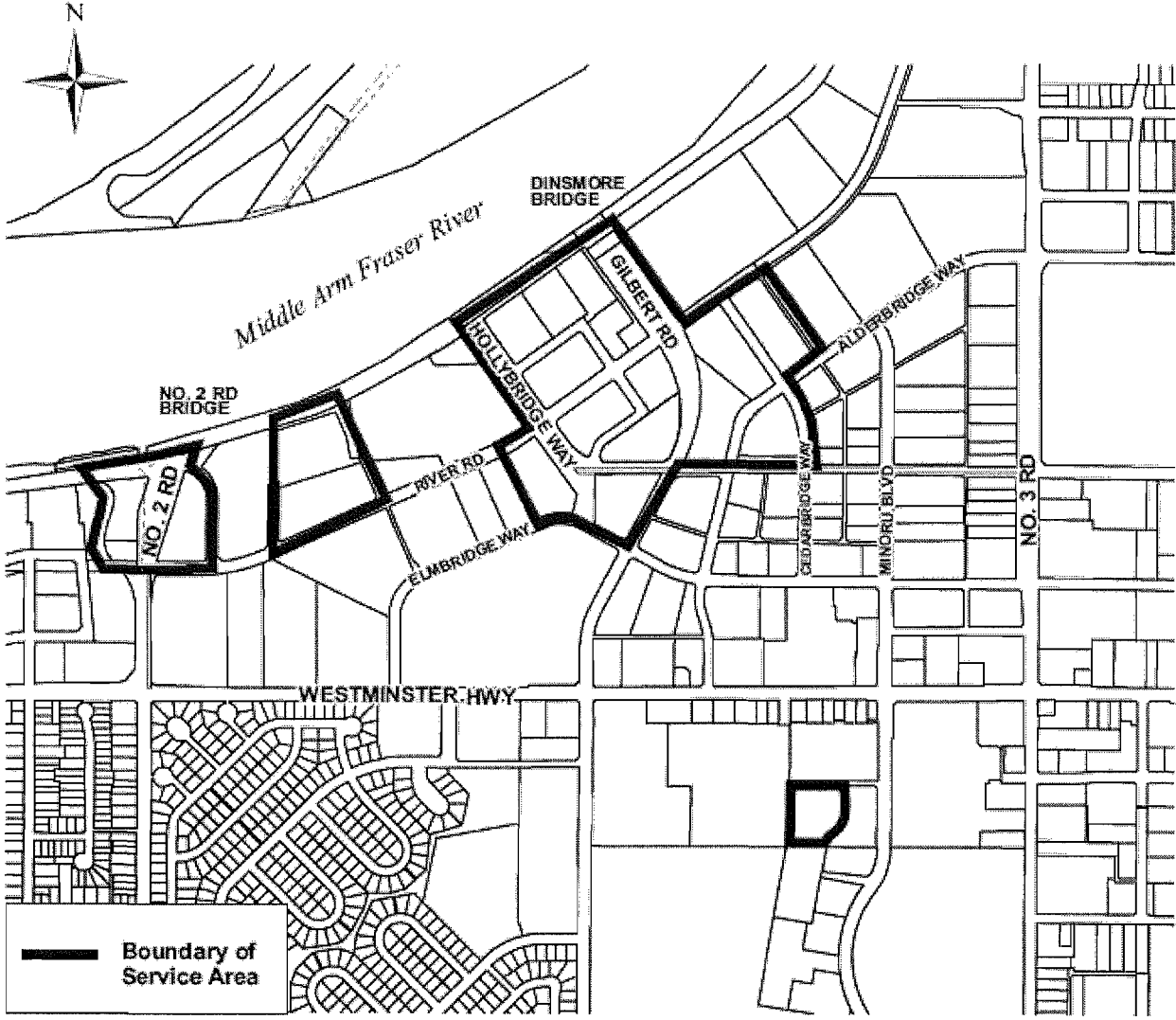


MAYOR

CORPORATE OFFICER

SCHEDULE A

Boundaries of Service Area



SCHEDULE B

GENERAL TERMS AND CONDITIONS

PART 1: INTERPRETATION

1.1 Definitions

Unless the context indicates otherwise, in this Bylaw and in the schedules referred to herein the following words have the following meanings:

- (a) “**back-billing**” has the meaning given in Section 12.2 of these General Terms and Conditions;
- (b) “**building**” means any multi-family residential, commercial, institutional and industrial buildings, and includes new and existing buildings described in Sections 5 and 6 of the Bylaw;
- (c) “**building mechanical system**” means a DEU-compatible mechanical system, including an internal space heating and cooling and domestic water heating distribution system, for a building located on Designated Property that is to receive the Services;
- (d) “**Bylaw**” means the River Green District Energy Utility Bylaw No. 9134 to which these General Terms and Conditions are attached and form part of;
- (e) “**City Engineer**” means the individual appointed by Council from time to time to be the General Manager of the Engineering and Public Works Department of the City, or his or her designate;
- (f) “**City Solicitor**” means the individual appointed by Council from time to time to be the City Solicitor of the Law Division of the City, or his or her designate;
- (g) “**Cooling**” means the energy transferred from the DEU through the Distribution System for the purpose of lowering the ambient air temperature in a Designated Property;
- (h) “**Council**” means the Council of the City of Richmond;
- (i) “**Customer**” means an Owner of a Designated Property who is being provided with the Services or who has filed an application for Services with the Service Provider that has been approved by the Service Provider;
- (j) “**Delivery Point**” means the outlet of the Heat Exchanger;
- (k) “**Designated Property**” means the building(s) to which this Bylaw applies pursuant to Sections 5 and 6 of the Bylaw;
- (l) “**DEU**” means the district energy generation and utility system referred to in Section 3 of the Bylaw and consists collectively of the Distribution System, the material, machinery, equipment and fixtures forming part of the Energy exchange

system used for the purpose of heating or cooling the fluid that flows through the Distribution System and the Service Connections and all equipment including the pressure vessels, conduits, pipes, valves, lines, pumps, Heat Exchangers and Meter Sets together with all fluid, ancillary appliances and fittings necessary to provide Energy to Designated Properties in the Service Area and all additions thereto and replacements thereof as such system is expanded, reduced or modified from time to time;

- (m) **“Director, Building Approvals”** means the individual so appointed by Council from time to time, or his or her designate;
- (n) **“Distribution System”** means the system of fluid pipes, fittings and ancillary components used for distributing fluid for the purposes of providing Energy to Designated Properties in the Service Area including all additions thereto and replacements thereof and the system of fluid pipes connecting the Distribution System to the Service Connection including all additions thereto and replacements thereof;
- (o) **“Energy”** means heated fluid and cooled fluid;
- (p) **“General Terms & Conditions”** means these general terms and conditions as amended from time to time by the Council of the City of Richmond;
- (q) **“Gross Floor Area”** means the total area of all horizontal floors, measured to the outer building limits, including all uses and all areas giving access such as corridors, hallways, landings, foyers, staircases and stairwells, and includes enclosed balconies and mezzanines, enclosed porches or verandas, elevator shafts and accessory buildings, except those used for parking;
- (r) **“Heat Exchanger”** means the equipment including ventilation systems and electrical pumps installed at a Designated Property to transfer Energy from the DEU to the Designated Property;
- (s) **“Heating”** means the energy transferred for the purpose of raising the ambient air or domestic hot water temperature in a Designated Property;
- (t) **“Meter Set”** means an assembly of metering and ancillary equipment, including Heat Exchangers, that measure the amount of Energy consumed by a Customer;
- (u) **“Owner”** means a person who owns, occupies, or controls a parcel of real property with a building thereon, and includes a registered owner, an owner under agreement, an occupier of Crown land, a cooperative association incorporated or continued under the *Cooperative Association Act* of British Columbia, a strata corporation established or continued under the *Strata Property Act* of British Columbia and an owner of a freehold estate in a Strata Lot;
- (v) **“Person”** or **“person”** means any individual, corporation, limited-liability company, partnership, firm, joint venture, association, trust, or other entity or organization, including a government authority;

- (w) “**Rates**” means, collectively, the fixed monthly charges, capacity charges and volumetric charges specified in Schedule D (Rates and Charges) for Services, as amended from time to time;
- (x) “**Service Area**” means the area in the City of Richmond as delineated in the boundaries map attached as Schedule A hereto or such portions thereof as may be designated by the Council and such other areas as may be added from time to time by the Council;
- (y) “**Service Related Charges**” include, but are not limited to, the fees specified in Schedule C (Fees), the rates and charges specified in Schedule D (Rates and Charges), GST, PST and all other taxes applicable to the Services;
- (z) “**Services**” means the delivery of Energy from and through the DEU to a Delivery Point and through a Meter Set for use in a Designated Property, and any service provided in connection with the DEU, including but not limited to providing a Service Connection, re-activating existing Service Connections, transferring an existing account, changing the type of Services provided, or making alterations to existing Service Connections, Heat Exchangers or Meter Sets;
- (aa) “**Services Agreement**” has the meaning given in Section 3.1 of these General Terms and Conditions;
- (bb) “**Service Connection**” means that portion of the DEU extending from the Distribution System to the Delivery Point;
- (cc) “**Service Provider**” means such Person or Persons appointed, contracted or otherwise engaged by Council to operate, maintain and manage the DEU on behalf of the City, and to provide the Services to Customers in accordance with the terms and conditions of this Bylaw, including its successors, assigns, officers, employees, servants, agents and contractors; and
- (dd) “**Strata Lot**” has the meaning given in *Strata Property Act*.

PART 2: APPLICATION REQUIREMENTS

2.1 Application for Services

An Owner of a Designated Property that must utilize the DEU pursuant to Section 5 of the Bylaw, and an Owner of a Designated Property seeking the Services pursuant to Section 6 of the Bylaw, must apply to the Service Provider for the Services at least 120 days before the date the Owner requires the Services.

2.2 Required Documents

An Owner applying for Services may be required to sign an application form and a Services Agreement provided by the Service Provider.

2.3 Separate Properties

If an Owner is requesting Services from the Service Provider at more than one Designated Property, then the applicant will be considered a separate Customer for each Designated Property.

2.4 Required References

The Service Provider may require an applicant for Services to provide reference information and identification acceptable to the Service Provider.

2.5 Refusal of Application

The Service Provider may refuse to accept an application for Services for any of the reasons listed in Section 15 below (Discontinuance of Services and Refusal of Services).

PART 3: AGREEMENT TO PROVIDE SERVICE

3.1 Services Agreement

“Services Agreement” means an agreement between the Service Provider and a Customer for the provision of Services, whether such agreement is:

- (a) in the form of a written application of the Customer for Services that has been approved by the Service Provider and that is deemed to include the terms and conditions specified in this Bylaw; or
- (b) the Service Provider’s standard services agreement signed by the Customer.

3.2 Term

A Services Agreement between a Customer and the Service Provider will commence on the later of:

- (a) either the date the Customer’s application is approved by the Service Provider under Section 3.1(a) above; or
- (b) the date indicated in the Service Provider’s standard services agreement, or if none, the date that the standard services agreement is signed by the Customer,

and will continue until the Services Agreement is terminated either in accordance with the terms of the Services Agreement or the terms of this Bylaw.

3.3 Customer Status

An Owner becomes a Customer of the Service Provider on the earlier of:

- (a) the date that the term of the Services Agreement commences under Section 3.2 above; or
- (b) the date that the Service Provider commences the provision of Services to the Owner’s Designated Property.

3.4 No Assignment/Transfer

A Customer may not transfer or assign a Services Agreement without the written consent of the Service Provider.

PART 4: Connecting for services

4.1 Service Connection

Subject to Section 4.5 below, the Service Provider will serve each Designated Property with one Service Connection. Each Designated Property will be installed with its own Meter Set.

4.2 Installation of Service Connection by Service Provider

The Service Provider will:

- (a) together with the Director, Building Approvals, designate the location of the Heat Exchanger, Meter Set and Service Connection on the Designated Property and determine the amount of space that must be left unobstructed around them to ensure sufficient and safe access thereto;
- (b) supply and install the Heat Exchanger and Meter Set upon payment of the applicable installation fees set out in Schedule C (Fees) to this Bylaw; and
- (c) supply and install the Service Connection from the DEU to the Delivery Point on the Designated Property using the route which is the most suitable to the Service Provider upon payment of the applicable installation fees set out in Schedule C (Fees) to this Bylaw.

4.3 Installation of Service Connection by Customer

An Owner or Customer may make an application to the Service Provider requesting prior written approval for the Owner or Customer, at its sole cost and expense, to:

- (a) supply and install the Heat Exchanger and Meter Set; and/or
- (b) supply and install the Service Connection from the DEU to the Delivery Point on the Designated Property using the route which is the most suitable to the Service Provider,

and the Service Provider, may, in its sole discretion:

- (c) approve such application subject to the Service Provider being satisfied with the design, materials, equipment, location and installation of the Heat Exchanger, Meter Set and Service Connection; and
- (d) waive or reduce payment of the applicable installation fees set out in Schedule C (Fees) to this Bylaw.

4.4 Customer Requested Routing

If a Customer requests:

- (a) that its piping or Service Connection enter the Designated Property at a different point of entry or follow a different route from the point or route designated by the Service Provider; and/or
- (b) that the Heat Exchanger or Meter Set be installed at a different location from the location designated by the Service Provider,

then, provided that:

- (c) the Customer pays the Service Provider in advance for all additional costs as advised by the Service Provider to install the Heat Exchanger, Meter Set and Service Connection in accordance with the Customer's request; and
- (d) the Service Provider is satisfied that approving the Customer's request will not have an adverse effect on the operations of the DEU or create any other undesirable consequences, including but not limited to public health and safety concerns,

the Service Provider may accept the request. If the request is accepted, the Service Provider may either approve the requested routing or entry point or installation locations as originally requested or may, with the Customer's agreement, modify the requested routing or entry point or installation locations.

4.5 Additional Service Connections

A Customer may apply to the Service Provider for one or more additional Service Connections at a Designated Property, which additional Service Connections may be provided at the sole discretion of the Service Provider. If the Service Provider agrees to install the additional Service Connection, the Service Provider may charge the Customer, in addition to the service connection installation fee set out in Schedule C (Fees), the actual full cost (including overhead costs) for the Service Connection installation. The Service Provider will bill each additional Service Connection from a separate meter and account.

4.6 Site Preparation

Customers will be responsible for all necessary site preparation including but not limited to clearing building materials, construction waste, equipment, soil and gravel piles over the proposed service line route, to standards established by the Service Provider. The Service Provider may recover from Customers any additional costs associated with delays or site visits necessitated by inadequate or substandard site preparation.

4.7 Easement, Statutory Right of Way and Section 219 Covenant

- (a) An Owner of a Designated Property that is to receive Services under this Bylaw must sign and deliver to the Service Provider a Section 219 covenant and statutory right of way to be registered against title to the Designated Property in

favour of the City, in the form or forms supplied by the Service Provider, for the installation, operation, maintenances and related services on the Designated Property of all necessary facilities for supplying the Services to the Designated Property. Each such Section 219 covenant and statutory right of way will have priority over any other financial encumbrances registered against title to the Designated Property; and

- (b) If one or more privately-owned intervening properties are located between the Designated Property and the DEU, then the Customer will be responsible for all costs of obtaining licenses, statutory rights of way, easements, leases or other agreements, the form and content of which shall be as determined in the sole discretion of the City, for non-exclusive access to, on, over and under such properties in favour of the City, for the purposes of performing installation, operation, maintenances and related services on each intervening property of all necessary facilities for supplying the Services to the Designated Property.

4.8 Maintenance by Service Provider

Subject to Section 4.9 below, the Service Provider will maintain the Service Connection, Heat Exchanger and Meter Set.

4.9 Maintenance by Customer

Each Customer and Owner of Designated Property must maintain and repair the mechanical systems in all buildings on their Designated Properties, to the Delivery Points, including:

- (a) keeping the building mechanical systems free of foreign material so as to prevent fouling of the Heat Exchangers; and
- (b) treating all fluids in the building mechanical system sufficiently to prevent corrosion of the Heat Exchangers.

4.10 Service Calls

A Customer or Owner may apply to the Service Provider to temporarily interrupt service to a Designated Property by closing the appropriate valves or by such other means as the Service Provider may find appropriate.

4.11 Damage

The Customer must advise the Service Provider immediately of any damage to the Service Connection, Heat Exchanger or Meter Set.

4.12 No Obstruction

A Customer must not construct or allow to be constructed any permanent structure which, in the sole opinion of the Service Provider, obstructs access to a Service Connection, Heat Exchanger or Meter Set.

4.13 Removal of Service Connection

If the supply of Services to a Customer's Designated Property is discontinued or terminated for any reason then, the Service Provider may, but is not required to, remove the Service Connection from the Customer's Designated Property.

PART 5: HEAT EXCHANGERS, METER SETS AND METERING

5.1 Installation

In order to provide the Services and bill a Customer for Energy delivered, the Service Provider will install one or more Heat Exchangers and Meter Sets on a Customer's Designated Property. The technical specifications of all Heat Exchangers and Meter Sets will be determined by the Service Provider. Unless approved by the Service Provider, all Heat Exchangers and Meter Sets will be installed at locations chosen by the Service Provider.

5.2 Measurement

The quantity of Energy delivered to a Designated Property will be metered using apparatus approved by the Service Provider. The amount of Energy registered by the Meter Set during each billing period will be converted to megawatt hours and rounded to the nearest one-tenth of a megawatt hour.

5.3 Testing Meters

A Customer may apply to the Service Provider to test a Meter Set, and the Service Provider will notify such Customer of the date and time the test is to occur, and the Customer is entitled to be present for the test. If the testing indicates that:

- (a) the Meter Set is inaccurate in its measurement by 10% or more, then:
 - (i) the Customer is entitled to return of the meter testing fee paid pursuant to Section 8.1 (Fees for application) below;
 - (ii) the cost of removing, replacing and testing the Meter Set will be borne by the Service Provider subject to Section 17.4 (Responsibility for Heat Exchanger and Meter Set) below; and
 - (iii) the Service Provider will estimate the resulting billing overpayment or shortfall, and settle with the Customer accordingly, provided any such settlement will not extend beyond 12 months before the month in which the test takes place.

5.4 Defective Meter Set

If a Meter Set ceases to register, then the Service Provider will estimate the volume of Energy delivered to the Customer according to the procedures set out in Section 11.7 (Incorrect Register) below.

5.5 Protection of Equipment

The Customer must take reasonable care of and protect all Heat Exchangers, Meter Sets and related equipment on the Customer's Designated Property. The Customer's responsibility for expense, risk and liability with respect to all Heat Exchangers, Meter Sets and related equipment is set out in Section 17.4 (Responsibility for Heat Exchanger and Meter Set) below.

5.6 No Unauthorised Changes

No Heat Exchangers, Meter Sets or related equipment will be installed, connected, moved or disconnected except by the Service Provider's authorized employees, contractors or agents or by other Persons acting with the Service Provider's written permission.

5.7 Removal of Equipment

If the supply of Services to a Customer's Designated Property is discontinued or terminated for any reason then, the Service Provider may, but is not required to, remove the Heat Exchanger, Meter Set and related equipment from the Customer's Designated Property.

5.8 Customer Requested Alterations

A Customer may apply to the Service Provider to remove, relocate or alter a Meter Set, Heat Exchanger or related equipment servicing a Designated Property, which removal, relocation or alteration may be provided at the sole discretion of the Service Provider. If the Service Provider agrees to remove, relocate, or alter the Meter Set, Heat Exchanger or related equipment, then in addition to the provisions of section 9.4 (Basis of Fees):

- (a) the Service Provider will give the Customer an estimate of the cost; and
- (b) if any of the changes to the Heat Exchanger, Meter Set or related equipment require the Service Provider to incur ongoing incremental operating and maintenance costs, the Service Provider may recover these costs from the Customer through the billing process established by this Bylaw.

PART 6: DEU EXPANSIONS AND EXTENSIONS

6.1 Expansion and Extension

The City may make extensions and expansions of the DEU in accordance with system development requirements.

PART 7: ACCESS

7.1 Access to Designated Property

The Customer must provide free access to, and the Service Provider and its authorized officers, employees, agents, servants, contractors and subcontractors have the right of entry, at any reasonable time and except in the case of emergency, upon reasonable notice, onto a Customer's Designated Property, for the purpose of reading, testing, repairing or removing Service Connections, Meter Sets, Heat Exchangers and ancillary

equipment, turning Energy on or off, completing system leakage surveys, stopping leaks, examining pipes, connections, fittings and appliances and reviewing the use made of Energy delivered to the Customer, to inspect and determine whether all regulations, prohibitions and requirements contained in this Bylaw and in any Services Agreement are being met, or for any other related purpose which the Service Provider requires.

7.2 Access to Equipment

The Customer must at all reasonable times and except in the case of emergency, upon reasonable notice, provide clear access to the Service Provider's equipment including the equipment described in section 7.1 above.

PART 8: APPLICATION AND SERVICE CONNECTION INSTALLATION FEES

8.1 Fees for applications and installations

Each person who submits an application and/or requests any installation for purposes of receiving Services under this Bylaw must pay the applicable fees set out in Schedule C, Fees.

8.2 Waiver of Application Fee

The application fee will be waived by the Service Provider if Services to a Customer are reactivated after they were discontinued for any of the reasons described in Section 14.2 (Right to Restrict) below.

8.3 Reactivation Fees

If Services are terminated

- (a) for any of the reasons described in Section 15 (Discontinuance of Service and Refusal of Services) of this bylaw; or
- (b) to permit a Customer to make alterations to their Designated Property,
- (c) and the same Customer or the spouse, employee, contractor, agent or partner of the same Customer requests reactivation of Services to the Designated Property within 12 months of the date of Services termination, then the applicant for reactivation must pay the greater of:
 - (d) the costs the Service Provider incurs in de-activating and re-activating the Services; or
 - (e) the sum of the applicable minimum Rates and charges set out in Schedule D (Rates and Charges) which would have been paid by the Customer between the time of termination and the time of reactivation of Services.

8.4 Identifying Meter Sets

If a Customer requests the Service Provider to identify the Meter Set that serves the Customer's Designated Property after the Meter Set was installed, then the Customer will

pay to the Service Provider the costs the Service Provider incurs in re-identifying the Meter Set where:

- (a) the Meter Set is found to be properly identified; or
- (b) the Meter Set is found to be improperly identified as a result of Customer activity, including but not limited to:
 - (i) a change in the legal civic address of the Designated Property; or
 - (ii) renovating or partitioning the Designated Property.

PART 9: RATES, CHARGES, FEES AND OTHER COSTS

9.1 Rates Payable

Each Customer must pay to the Service Provider the applicable Rates for the Services as specified in Part 1 of Schedule D (Rates and Charges), as amended from time to time.

9.2 Excess demand fee

Pursuant to section 19.1(f), a building permit applicant must pay to the Service Provider the excess demand fee set out in Part 2 of Schedule D (Rates and Charges).

9.3 Electrical pump costs

Where a Heat Exchanger installed on a Designated Property is operated by one or more electrical pumps, the Customer must pay all costs of electricity consumed by the electrical pumps for the proper operation of the Heat Exchanger.

9.4 Basis of Fees

- (a) The fees specified in Schedule C (Fees) shall be estimated fees based on the cost of providing, maintaining and expanding the Services and may be different for each Designated Property based upon the use, capacity and consumption of each Designated Property.
- (b) Where an Owner, Customer or other person is to have work done or Services received at cost, all fees payable shall be payable in advance before commencement of the work.
- (c) After completion of the work, the Service Provider will notify the Owner, Customer or other person of the actual cost.
- (d) If the actual cost is more than the estimated cost, the Owner, Customer or other person will be liable for and must pay the Service Provider the shortfall within 30 days after demand by the Service Provider.
- (e) If the actual cost is less than the estimated cost, the Service Provider will refund to the Owner, Customer or other person the excess, except that if the Customer owes any money under this Bylaw at that time, the Service Provider may apply the excess against such debt.

PART 10: SECURITY FOR PAYMENT OF BILLS**10.1 Security Deposit**

If a Customer cannot establish or maintain credit to the satisfaction of the Service Provider, then the Customer may be required to provide a security deposit in the form of cash or an equivalent form of security acceptable to the Service Provider, the amount of which shall not:

- (a) be less than \$50; and
- (b) be greater than an amount equal to the estimate of the total bill for the two highest consecutive months' consumption of Energy by the Customer.

10.2 Interest

The Service Provider will pay interest to a Customer on a security deposit at the rate and at the times specified in the Schedule C (Fees). Subject to Section 10.5 (Application of Deposit), if a security deposit in whole or in part is returned to the Customer for any reason, the Service Provider will credit any accrued interest to the Customer's account at that time. No interest is payable on:

- (a) any unclaimed deposit left with the Service Provider after the account, for which security was obtained, is closed; and
- (b) a deposit held by the Service Provider in a form other than cash.

10.3 Refund of Deposit

When the Customer pays the final bill, the Service Provider will refund any remaining cash security deposit plus any accrued interest to the Customer, or will cancel the equivalent form of security and provide evidence of such cancellation upon request by the Customer.

10.4 Unclaimed Refund

If the Service Provider is, despite reasonable efforts, unable to locate the Customer to whom a cash security deposit is repayable, and the cash security deposit remains unclaimed 10 years after the date on which it first became refundable, the deposit, together with any interest accrued thereon, will be forfeit and will become the absolute property of the Service Provider.

10.5 Application of Deposit

If a Customer's bill is not paid when due, the Service Provider may apply all or any part of the Customer's security deposit and any accrued interest thereon toward payment of the bill. Even if the Service Provider utilizes the security deposit, the Service Provider may, under Section 15 (Discontinuance of Services and Refusal of Services) below, discontinue Services to the Customer for failure to pay for Services on time.

10.6 Top-Up of Deposit

If a Customer's security deposit is utilized by the Service Provider for payment of an unpaid bill, the Customer must replenish the security deposit before the Service Provider will reconnect or continue providing Services to the Customer.

10.7 Failure to Provide Security Deposit

Failure to provide a security deposit acceptable to the Service Provider may, in the Service Provider's discretion, result in discontinuance or refusal of Services as set out under Section 15 (Discontinuance of Service and Refusal of Service).

PART 11: BILLING**11.1 Basis for Billing**

The Service Provider will bill the Customer in accordance with the Customer's Services Agreement and this Bylaw, for the amount of each fee, rate or charge that the Customer is responsible for paying for receipt of and in relation to the Services.

11.2 Form of Bill

Each bill sent to a Customer by the Service Provider for Services provided will include:

- (a) the amounts of any fees, rates and charges, costs and taxes thereon, that are due and payable to the Service Provider;
- (b) the date when the bill is due and payable;
- (c) acceptable places and methods of payment; and
- (d) the number of megawatt hours of heat energy supplied to the Heat Exchanger and Meter Set.

11.3 Meter Measurement

The Service Provider will measure the quantity of Energy delivered to a Customer using a Meter Set and the starting point for measuring delivered quantities during each billing period will be the finishing point of the preceding billing period.

11.4 Multiple Meters

For a Customer who has more than one Meter Set on their Designated Property, each Meter Set will be billed separately.

11.5 Estimates

If the Service Provider is not able to obtain a meter reading for any reason, the Service Provider may estimate the Customer's meter readings for billing purposes.

11.6 Estimated Final Reading

If a Services Agreement is terminated, the Service Provider may estimate the final meter reading for final billing.

11.7 Incorrect Register

If any Meter Set has failed to measure the delivered quantity of Energy correctly, then the Service Provider may estimate the meter reading for billing purposes, subject to Section 12 (Back-Billing).

11.8 Bills Frequency

The Service Provider may bill a Customer as often as the Service Provider considers necessary but generally will bill on a quarterly basis.

11.9 Bill Due Dates

The Customer must pay the bill for Services on or before the due date shown on each bill.

11.10 Adjustment for Partial Period

The Service Provider may pro rate the amount due from a Customer for a partial billing period, on a daily basis.

11.11 Historical Billing Information

Customers who request historical billing information may be charged the cost of processing and providing the information.

PART 12: BACK-BILLING**12.1 When Required**

The Service Provider may, in the circumstances specified herein, charge and demand, and the Service Provider may collect or receive, from Customers for the Services received, a greater or lesser compensation than that specified in bills to the Customers, provided that in the case of a minor adjustment to a Customer's bill, back-billing treatment may not be applied.

12.2 Definition

Back-billing means the re-billing by the Service Provider for Services rendered to a Customer on account of a discovery that the original billings are either too high (overbilled) or too low (under-billed). The discovery may be made by either the Customer or the Service Provider. The cause of the billing error may include any of the following non-exhaustive reasons or any combination thereof:

- (a) stopped meter;
- (b) metering equipment failure;
- (c) missing meter now found;
- (d) switched meters;
- (e) double metering;
- (f) incorrect meter connections;

- (g) incorrect use of any prescribed apparatus respecting the registration of a meter;
- (h) incorrect meter multiplier;
- (i) the application of an incorrect rate;
- (j) incorrect reading of meters or data processing; and
- (k) tampering, fraud, theft or any other criminal act.

12.3 Re-Billing Basis

Where metering or billing errors occur, the consumption and demand will be based upon the records of the Service Provider for the Customer, or the Customer's own records to the extent they are available and accurate, or if not available, reasonable and fair estimates may be made by the Service Provider. Such estimates will be on a consistent basis with Designated Properties and buildings of a similar kind, or according to the Services Agreement.

12.4 Tampering/Fraud

If there are reasonable grounds to believe that the Customer has tampered with or otherwise used the Service Provider's Services in an unauthorized way, or there is evidence of fraud, theft or other criminal acts, or if a reasonable Customer should have known of the under-billing and failed to promptly bring it to the attention of the Service Provider, then:

- (a) the extent of back-billing will be for the duration of the unauthorized use, subject to the applicable limitation period provided by law, and the provisions of Sections 12.7 (Under-Billing) to 12.10 (Changes in Occupancy), below, will not apply;
- (b) the Customer is liable for the direct administrative costs incurred by the Service Provider and the City in the investigation of any incident of tampering, including the direct costs of repair, or replacement of equipment; and
- (c) under-billing resulting from circumstances described above will bear interest computed at the rate and at the times specified in Schedule C (Fees) until the amount under-billed is paid in full.

12.5 Remediating Problem

In every case of under-billing or over-billing, the cause of the error will be remedied as soon as possible, and the Customer will be promptly notified of the error and of the effect upon the Customer's ongoing bill.

12.6 Over-billing

In every case of over-billing, the Service Provider will credit the Customer's account with all money incorrectly collected for the duration of the error, subject to the applicable limitation period provided by law. Simple interest on such over-billed amount, computed at the rate and at the times specified in Schedule C (Fees), will also be credited to the Customer's account.

12.7 Under-billing

Subject to Section 12.4 (Tampering/Fraud) above, in every case of under-billing the Service Provider will back-bill the Customer for the shorter of

- (a) the duration of the error;
- (b) six months; or
- (c) as set out in the Services Agreement between the Customer and the Service Provider, if any.

12.8 Terms of Repayment

Subject to Section 12.4 (Tampering/Fraud) above, in all cases of under-billing, the Service Provider will offer the Customer reasonable terms of repayment. If requested by the Customer, the repayment term will be equivalent in length to the back-billing period. The repayment will be interest free and in equal instalments corresponding to the normal billing cycle. However, delinquency in payment of such instalments will be subject to the usual late payment charges.

12.9 Disputed Back-bills

Subject to Section 12.4 (Tampering/Fraud), if a Customer disputes a portion of a back-billing due to under-billing based upon either consumption, demand or duration of the error, then the Service Provider will not threaten or cause the discontinuance of Services for the Customer's failure to pay that portion of the back-billing, unless there are no reasonable grounds for the Customer to dispute that portion of the back-billing. The undisputed portion of the bill will be paid by the Customer and the Service Provider may threaten or cause the discontinuance of Services if such undisputed portion of the bill is not paid.

12.10 Changes in Occupancy

Subject to Section 14.4 (Tampering/Fraud), where changes of occupancy have occurred, the Service Provider will make a reasonable attempt to locate the former Customer who has been under-billed or over-billed. If, after a period of one year, such Customer cannot be located, then the applicable under-billing or over-billing will be cancelled.

PART 13: LATE PAYMENT AND RETURNED CHEQUE CHARGES

13.1 Late Payment Charge

If the amount due for Services or any Service Related Charges on any bill has not been received in full by the Service Provider on or before the due date specified on the bill, and the unpaid balance is \$15 or more, then the Service Provider may include the late payment charge specified in Schedule C (Fees) in the next bill to the Customer.

13.2 Returned Cheque Charge

If a cheque received by the Service Provider from a Customer in payment of a bill is not honoured by the Customer's financial institution for any reason other than clerical error, then the Service Provider may include a charge specified in Schedule C (Fees) in the next

bill to the Customer for processing the returned cheque, whether or not the Service has been disconnected in accordance with the provisions of the Bylaw and these General Terms and Conditions.

13.3 Collection as Taxes

Any amount due from a Customer to the Service Provider for Services or any Service Related Charges that remains unpaid by December 31 of the year in which the amount became due, will be added to the property taxes for the Designated Property in question and collected in the same manner and with the same remedies as property taxes.

PART 14: INTERRUPTION OF SERVICE

14.1 Regular Supply

The Service Provider will use its reasonable efforts to provide the constant delivery of Energy and the maintenance of unvaried temperatures.

14.2 Right to Restrict

The Service Provider may require any of its Customers, at all times or between specified hours, to discontinue, interrupt or reduce to a specified degree or quantity, the use of Energy for any of the following purposes or reasons:

- (a) in the event of a temporary or permanent shortage of Energy, whether actual or believed to exist or anticipated by the Service Provider;
- (b) in the event of a breakdown or failure of the DEU;
- (c) to comply with any legal requirements;
- (d) to make repairs or improvements to any part of the DEU;
- (e) in the event of fire, flood, explosion or other emergency to safeguard Persons or property against the possibility of injury or damage; or
- (f) for any other reason that the Service Provider considers necessary.

14.3 Notice

The Service Provider will, to the extent practicable, give notice of any service limitations under Section 14.2 (Right to Restrict) to its Customers by:

- (a) newspaper, radio or television announcement; or
- (b) in accordance with Section 21.1 (Service of Notices).

14.4 Failure to Comply

If, in the opinion of the Service Provider, a Customer has failed to comply with any requirement under Section 14.2 (Right to Restrict), then the Service Provider may, after providing notice to the Customer in the manner specified in Section 21.1 (Service of Notices), discontinue Services to the Customer.

PART 15: DISCONTINUANCE OF SERVICES AND REFUSAL OF SERVICES**15.1 Discontinuance With Notice and Refusal Without Notice**

Subject to applicable federal, provincial, and local government laws, statutes, regulations, bylaws, orders and policies, the Service Provider may discontinue Services to a Customer with at least 48 hours written notice to the Customer, or may refuse Services for any of the following reasons:

- (a) the Customer has failed to pay the bill for Services and/or Service Related Charges on or before the due date;
- (b) the Customer or applicant has failed to furnish adequate security for billings by the specified date;
- (c) the Customer or applicant has failed to pay the bill for Services and/or Service Related Charges in respect of another Designated Property on or before the due date;
- (d) the Customer or applicant occupies the Designated Property with another occupant who has failed to pay the bill for Services and/or Service Related Charges or furnish adequate security in respect of another Designated Property which was occupied by that occupant and the Customer at the same time;
- (e) the Customer or applicant is in receivership or bankruptcy, or operating under the protection of any insolvency legislation and has failed to pay any outstanding bills for Services and/or Service Related Charges;
- (f) the Customer has failed to apply for Services;
- (g) the Customer has failed to ensure that there is an adequate supply to the Designated Property of electricity required to operate the Heat Exchanger electrical pumps, whether by failure to pay utility bills or otherwise howsoever, with the result that electricity to the Designated Property has been reduced or interrupted and the proper operation all Heat Exchangers have been negatively affected; or
- (h) land or a portion thereof on which the Service Provider's facilities are, or are proposed to be, located contains contamination which the Service Provider, acting reasonably, determines has adversely affected or has the potential to adversely affect the Service Provider's facilities, or the health or safety of its workers or which may cause the Service Provider to assume liability for cleanup and other costs associated with the contamination. For the purposes of this Section, "contamination" means the presence in the soil, sediment or groundwater of special waste or another substance in quantities or concentrations exceeding criteria, standards or conditions established by the British Columbia Ministry of Water, Land and Air Protection or as prescribed by present and future laws, rules, regulations and orders of any other legislative body, governmental agency or duly constituted authority now or hereafter having jurisdiction over the environment.

15.2 Discontinuance or Refusal Without Notice

Subject to applicable federal, provincial and local government laws, statutes, regulations, bylaws, orders and policies, the Service Provider may discontinue without notice or refuse the supply of Energy or Services to a Customer for any of the following reasons:

- (a) the Customer or applicant has failed to provide reference information and identification acceptable to the Service Provider, when applying for Services or at any subsequent time on request by the Service Provider;
- (b) the Customer has defective pipe, appliances, mechanical systems or Energy fittings in the Designated Property;
- (c) the Customer uses Energy in such a manner as in the Service Provider's opinion:
 - (d) may lead to a dangerous situation; or
 - (e) may cause undue or abnormal fluctuations in the temperature of Energy in the DEU;
- (f) the Customer fails to make modifications or additions to the Customer's equipment which have been required by the Service Provider to prevent the danger or to control the undue or abnormal fluctuations described under paragraph (c);
- (g) the Customer breaches any of the terms and conditions upon which Services are provided to the Customer by the Service Provider;
- (h) the Customer fraudulently misrepresents to the Service Provider its use of Energy or the volume delivered;
- (i) the Customer vacates the Designated Property that is receiving the Services; or
- (j) the Customer stops consuming Energy at the Designated Property.

PART 16: TERMINATION OF SERVICE AGREEMENT

16.1 Termination by the Service Provider

Subject to applicable federal, provincial and local government laws, statutes, regulations, bylaws, orders and policies, the Service Provider may terminate a Services Agreement by giving the Customer at least 48 hours written notice if Services are discontinued under Section 15 (Discontinuance of Services and Refusal of Services).

16.2 Continuing Obligation

The Customer is responsible for, and must pay for, all Energy delivered to the Customer's Designated Property until the Services Agreement is terminated and is responsible for all damage to and loss of Heat Exchangers, Meter Sets or other equipment of the Service Provider on the Designated Property.

16.3 Effect of Termination

Termination of a Services Agreement does not release the Customer from any obligations under the Services Agreement which expressly or by their nature survive the termination of the Services Agreement;

16.4 Sealing Service Connection

After the termination of Services to a Designated Property and after a reasonable period of time during which a new Customer has not applied for Services at the Designated Property, the Service Provider may seal off the Service Connection to the Designated Property.

PART 17: LIMITATIONS ON LIABILITY

17.1 Responsibility for Delivery of Energy

The Service Provider, and the City if the City is not the Service Provider, and their respective elected officials, directors, officers, employees, servants, contractors, representatives and agents are not responsible or liable for any loss, damage, costs or injury (including death) incurred by any Customer or any Person claiming by or through the Customer caused by or resulting from, directly or indirectly, any discontinuance, suspension or interruption of, or failure or defect in the supply or delivery or transportation of, or refusal to supply, deliver or transport Energy, or provide Services, unless the loss, damage, costs or injury (including death) is directly attributable to the gross negligence or wilful misconduct of the Service Provider or the City if the City is not the Service Provider, and their respective elected officials, directors, officers, employees, servants, contractors, representatives and agents provided, however, that the Service Provider and the City if the City is not the Service Provider, and their respective elected officials, directors, officers, employees, servants, contractors, representatives and agents are not responsible or liable for any loss of profit, loss of revenues, or other economic loss even if the loss is directly attributable to the gross negligence or wilful misconduct of the Service Provider or the City if the City is not the Service Provider, or their respective elected officials, directors, officers, employees, servants, contractors, representatives and agents.

17.2 Responsibility Before and After Delivery Point

The Customer is responsible for all expense, risk and liability for:

- (a) the use or presence of Energy, being delivered from the DEU to a Customer's Designated Property, before it passes the Delivery Point in the Customer's Designated Property;
- (b) the use or presence of Energy, being returned from a Customer's Designated Property to the DEU, after it passes the Delivery Point in the Customer's Designated Property; and
- (c) the Service Provider-owned and City-owned facilities serving the Customer's Designated Property,

if any loss or damage caused by or resulting from failure to meet that responsibility is caused, or contributed to, by the act or omission of the Customer or a Person for whom the Customer is responsible.

17.3 Responsibility After Delivery Point

The Customer is responsible for all expense, risk and liability with respect to the use or presence of Energy being delivered to the Customer's Designated Property after it passes the Delivery Point.

17.4 Responsibility for Heat Exchanger and Meter Set

The Customer is responsible for all expense, risk and liability with respect to all Heat Exchangers, Meter Sets or related equipment at the Customer's Designated Property unless any loss or damage is:

- (a) directly attributable to the negligence of the Service Provider, its employees, contractors or agents; or
- (b) caused by or resulting from a defect in the equipment. The Customer must prove that negligence or defect.

For greater certainty and without limiting the generality of the foregoing, the Customer is responsible for all expense, risk and liability arising from any measures required to be taken by the Service Provider to ensure that the Heat Exchangers, Meter Sets or related equipment on the Customer's Designated Property are adequately protected, as well as any updates or alterations to the Service Connection(s) on the Customer's Designated Property necessitated by changes to the grading or elevation of the Customer's Designated Property or obstructions placed on such Service Connection(s).

17.5 Customer Indemnification

The Customer will indemnify and hold harmless the Service Provider, and the City if the City is not the Service Provider, and their respective employees, contractors and agents from all claims, loss, damage, costs or injury (including death) suffered by the Customer or any Person claiming by or through the Customer or any third party caused by or resulting from the use of Energy by the Customer or the presence of Energy in the Customer's Designated Property, or from the Customer or Customer's employees, contractors or agents damaging the Service Provider's or the City's facilities.

PART 18: OFFENCES UNDER BYLAW

18.1 Offence

A person who:

- (a) violates any provision of this Bylaw, or does any act or thing which violates any provision of this Bylaw, or suffers or allows any other person to do any act or thing which violates any provision of this Bylaw;
- (b) neglects to do or refrains from doing anything required to be done by any provision of this Bylaw; or

- (c) fails to comply, or suffers or allows any other person to fail to comply, with an order, direction, or notice given under any provision of this Bylaw,

is guilty of an offence against this Bylaw and liable to the penalties imposed under this Section.

18.2 Fine for offence

Every person who commits an offence against the Bylaw and these General Terms and Conditions is punishable on conviction by a fine of not less than \$250.00 and not more than \$10,000.00 for each offence, except that:

- (a) a person who commits an offence under section 4.9 that results in fouling of the Heat Exchangers is liable to a fine of not less than \$2000.00 for each offence; and
- (b) a person who fails to comply, or suffers or allows any other person to fail to comply, with an order, direction, or notice given under any provision of the Bylaw and these General Terms and Conditions is liable to a fine of not less than \$500.00 for each offence.

18.3 Fine for continuing offence

Each day that an offence continues is a separate offence.

18.4 Tampering with DEU

A person must not tamper, interfere with, damage, or destroy any part of the DEU.

PART 19: BUILDING PERMIT REQUIREMENTS FOR DEU COMPATIBLE BUILDING MECHANICAL SYSTEMS

19.1 Building Permit Application

A person who applies, under the Building Regulation Bylaw, for a permit that is to authorize the installation or alteration of a building mechanical system must include in, or submit with, the application:

- (a) an acknowledgment signed by the Owner that the building is located on a Designated Property;
- (b) a duly signed section 219 covenant and a statutory right of way in accordance with section 4.7, to be registered against title to the Designated Property prior to building permit being issued;
- (c) mechanical and other plans and documentation as the City Engineer may require, signed or certified by the registered professional responsible for design of the building mechanical system;
- (d) a certificate signed by the Service Provider, acting as the City's agent for this limited purpose, that the specifications, design, mechanical and other plans relating to the building mechanical system are compatible with the DEU;

- (e) an energy modelling report, signed by the registered professional who is responsible for design of the building mechanical system, estimating the:
 - (i) peak heat energy demand for space heating;
 - (ii) peak heat energy demand for domestic hot water;
 - (iii) combined peak heat energy demand for any uses other than space heating and domestic hot water; and
 - (iv) hour by hour consumption of energy;
- (f) a cheque in the amount of:
 - (i) the excess demand fee as specified in Part 2 of Schedule D; and
 - (ii) the service connection installation fee, as specified in Schedule C (Fees); and
 - (iii) building permit application DEU review fee, as specified in Schedule C (Fees). For certainty, the building permit application DEU review fee shall, notwithstanding section 9.4, be a fixed fee and not an estimated fee;
- (g) the proposed location of the Heat Exchanger and Meter Set, certified by the Service Provider as approved;
- (h) the proposed location of Distribution System components in or on the Designated Property, certified by the Service Provider as approved;
- (i) the proposed location of the Delivery Points, certified by the Service Provider as approved;
- (j) the proposed schedule for installation or alteration of the building mechanical system;
- (k) the proposed commencement date for the delivery of Energy by the Service Provider to the Heat Exchanger and Meter Set; and
- (l) such other information as the Service Provider or City Engineer may require.

19.2 Submission of copy of application

An applicant must submit a copy of the building permit application to the City Engineer.

19.3 Approval of Energy modelling report

The report submitted under section 19.1(e) is subject to approval by the City Engineer.

19.4 Approval of Locations - General

The location of each of the:

- (a) Heat Exchanger and Meter Set, submitted under section 19.1(g);
- (b) Distribution System components in or on the Designated Property, submitted under section 19.1(h); and
- (c) Delivery Points, submitted under section 19.1(i);

is subject to approval by the Director, Building Approvals and City Engineer.

19.5 Approval of schedule

The proposed schedule for installation or alteration of the building mechanical system is subject to approval by the City Engineer.

19.6 Design of building mechanical system

The design of the building mechanical system is subject to approval by the City Engineer following certification by the Service Provider under section 19.1(d).

19.7 Approval of building permit

The building permit is subject to approval by the:

- (a) Director, Building Approvals under the Building Regulation Bylaw; and
- (b) Director, Building Approvals and City Engineer under the Bylaw and these General Terms and Conditions.

19.8 No work before permit issuance

A person must not begin to install or alter a building mechanical system until the Director, Building Approvals has issued the building permit.

19.9 Signed Services Agreement required

No building permit for a building mechanical system will be issued until a Services Agreement has been signed relating to the Designated Property.

PART 20: DESIGN AND INSTALLATION OR ALTERATION OF BUILDING MECHANICAL SYSTEM

20.1 Integration with DEU

The design and installation or alteration of the building mechanical system must integrate the building mechanical system and DEU in a manner that enables the building mechanical system to derive the most benefit possible from the DEU and the DEU to operate at peak efficiency.

20.2 Prohibited components and primary source

A building mechanical system must utilize the DEU for not less than 100%, or such other lesser quantity as approved by the City Engineer, of all the annual space heating and domestic water heating requirements, and when available, space cooling requirements, for a building on a Designated Property as determined in the energy modelling report

required under section 19.1(e). An Owner must not itself perform, provide, install or realize, nor allow any other Person to perform, provide, install or realize any other system to provide primary domestic hot water and Heating to any building on the Designated Property, and must not allow or consent to any other Person supplying or distributing primary domestic hot water and Heating to any building on the Designated Property, except that:

- (a) a person who is altering an existing building may retain components otherwise prohibited under this section 20.2 to the extent permitted by the Director, Building Approvals under the Building Regulation By-law or by the Director, Building Approvals and City Engineer under this By-law;
- (b) unless pre-approved in writing by the City Engineer, in-suite gas fireplaces are not permitted; and
- (c) unless pre-approved in writing by the City Engineer, gas make-up air units are not permitted.

20.3 Scheduling

An applicant must:

- (a) ensure that installation of the building mechanical system proceeds in accordance with the schedule approved under section 19.5, and any changes to the schedule approved under this section 20.3; and
- (b) advise the Director, Building Approvals and City Engineer within 24 hours of any proposed changes to the schedule for installation or alteration of the building mechanical system, which proposed changes are subject to approval by the Director, Building Approvals and City Engineer.

20.4 Service Provider's scheduling

To the extent the City Engineer and Service Provider consider it necessary, convenient, or financially prudent, the Service Provider will co-ordinate its schedule for construction of any Distribution System components, Heat Exchangers and Meter Sets for a Designated Property with the applicant's schedule for installation or alteration of the building mechanical system.

20.5 Approval of installation or alteration of work

Completion of the installation or alteration of a building mechanical system is subject to approval by the Director, Building Approvals and City Engineer under this Bylaw.

20.6 No occupancy allowed

An Owner is not entitled to final building inspection allowing occupancy under the Building Regulation Bylaw for a building on a Designated Property until the City Engineer has given approval under section 20.5, and the Owner has paid the Service Provider all applicable fees and charges in accordance with section 9.4.

PART 21: MISCELLANEOUS AND GENERAL PROVISIONS**21.1 Service of Notices**

All written notices to be given under this Bylaw may be:

- (a) sent via registered mail to the Customer's billing address or the to address of the Owner shown on the assessment roll prepared pursuant to the Assessment Act;
- (b) if the notice refers to real property, by posting it on the real property;
- (c) delivered by hand to the addressee thereof;
- (d) sent by facsimile or e-mail to the addressee thereof,

and any such notice given as aforesaid will be deemed to have been given, in the case of delivery by hand, when delivered, in the case of facsimile transmission or e-mail, when a legible facsimile or e-mail is received by the recipient if received before 5:00 p.m. on a day other than a Saturday, Sunday or statutory holiday in the Province of British Columbia or Canada (a “**business day**”), or on the next business day if such facsimile or e-mail is received on a day which is not a business day or after 5:00 p.m. on a business day, in the case of delivery by registered mail, , on the date received, and in the case of posting on property, at the time of posting. In the event of discontinuance of postal service due to strike, lockout, labour disturbance or otherwise, notices shall be delivered by hand or facsimile transmission or e-mail.

21.2 Notice of Violation

An inspector or official of the City, or a by-law enforcement officer, may give notice to any person ordering or directing that person to:

- (a) discontinue or refrain from proceeding with any work or doing anything that contravenes this Bylaw; or
- (b) carry out any work or do anything to bring a building mechanical system into conformity with this Bylaw,

within the time specified in such notice.

21.3 Unauthorised Sale, Supply or Use

Unless authorized in writing by the Service Provider, a Customer will not sell or supply the Energy supplied to it by the Service Provider to other Persons or use the Energy supplied to it by the Service Provider for any purpose other than as specified in the Services Agreement and this Bylaw.

21.4 Taxes

The rates and charges specified in the applicable Schedules hereto do not include any local, provincial or federal taxes, assessments or levies imposed by any competent taxing authorities which the Service Provider may be lawfully authorized or required to add to its normal levies, rates and charges or to collect from or charge to the Customer.

21.5 Conflicting Terms and Conditions

Where anything in this Bylaw conflicts with the provisions of another bylaw adopted by the City or conflicts with special terms or conditions specified under a Services Agreement, then the terms or conditions specified under this Bylaw govern.

21.6 Authority of Agents of the Service Provider

No employee, contractor or agent of the Service Provider has authority to make any promise, agreement or representation not incorporated in this Bylaw or in a Services Agreement, and any such unauthorized promise, agreement or representation is not binding on the Service Provider.

21.7 Additions, Alterations and Amendments

This Bylaw and its Schedules may be added to, cancelled, altered or amended by Council from time to time.

SCHEDULE C**Fees**

Bylaw Section	General Terms and Conditions Section	Application	Fee
6		Application for voluntary use of energy utility system	BY ESTIMATE
	4.1	Service Connection Installation Fee	BY ESTIMATE
	4.4	Customer requested routing	BY ESTIMATE
	4.9	Service call during Service Provider's normal business hours	\$150.00
	4.9	Service call outside Service Provider's normal business hours	\$400.00
	5.3	Application for meter test	\$400.00
	5.8	Application to remove, relocate, or alter energy transfer station or distribution system extension servicing	\$400.00
	8.3	Reactivation fee	BY ESTIMATE
	8.4	Re-identification of Meter Set	BY ESTIMATE
	9.2	Application for service to Designated Property	No charge
	10.2 & 12.6 & 12.4(c)	Interest on security deposit and over-billed amounts and under-billed amounts	Bank of Canada prime rate minus 2% per annum payable monthly
	13.1	Late Payment Charge	\$100.00
	13.2	Cheque returned to the Service Provider	\$100.00
	19.1	Building permit application DEU review fee charged in addition to building permit application fee under Building Regulation Bylaw.	2% of the Building Permit fee

SCHEDULE D

Rates and Charges

PART 1 - RATES FOR SERVICES

The following charges, as amended from time to time, will constitute the Rates for Services:

- (a) capacity charge - a monthly charge of \$0.07 per square foot of gross floor area; and
- (b) volumetric charge – a monthly charge of \$0.00 per megawatt hour of Energy returned from the Heat Exchanger and Meter Set at the Designated Property.

PART 2 - EXCESS DEMAND FEE

Excess demand fee of \$0.14 for each watt per square foot of the aggregate of the estimated peak heat energy demand referred to in section 19.1(e) (i), (ii), and (iii) that exceeds 6 watts per square foot.

District Energy Rate Structure and User Cost Assumptions

DEU's in Richmond includes master metering for each building. The DEU service provider would read the meters and send a monthly or quarterly bill to the strata council or property management company, which in turn would distribute the charge to individual unit owners based on unit square footage (unit entitlement). This charge would likely be embedded in the general strata fee. This is the same method that is currently used for Alexandra DEU energy billing.

It is possible to provide individual unit metering, but the cost can exceed \$5,000 per unit. For this reason, unit level metering has not been pursued. Regardless of cost, there is also more limited value in providing individual metering for heat energy from a DEU system in a multi-tenant building for the following reasons:

- Once the DEU is constructed, there is almost no marginal cost to providing additional heating to a building, the capital and operating cost recovery needs remain the same month to month through high demand periods in winter and low demand in the spring and fall. Therefore there is little opportunity or need to vary the rate with demand.
- Space heating is a more general commodity within a building than other energy demands. Heat is transferred between units and common spaces and is never fully contained at the supply point. Measurements in existing multi-family buildings in Vancouver have shown that as much as 70% of the total heating requirements in a building can be supplied from the common spaces through air flow to the individual units. Individual metering then becomes a less meaningful measure of individual benefit.
- A given multi-family building will almost always have a uniform insulation and heating system design and this will be the most significant factor that determines the energy usage for heating throughout the building's life. Occupant behaviour is a factor as well, but the primary opportunity to create energy savings is with the design and construction of the building. Master metering of the building provides equity between buildings and recognises the benefits of more efficient building designs.

Establishing "Business as Usual" Customer Rates

In the absence of this DEU proposal and Council's DE-Ready Building requirements at rezoning, typical multi-unit residential buildings would be built with electrical baseboard heaters for in-suite heating, gas fired make-up air units for common space heating and gas fired boilers for hot water heating. This is referred to as a Business as Usual (BAU) scenario as is the basis for comparing DEU costs with conventional utility, energy and maintenance costs. The BAU cost that the end user would have to pay would consist of utility bills, strata maintenance fees which would include energy plant operation and maintenance, commodity costs for hot water heating and common space heating (e.g. electricity and natural gas), and unit purchase price which would include a cost for the energy plant (see below).

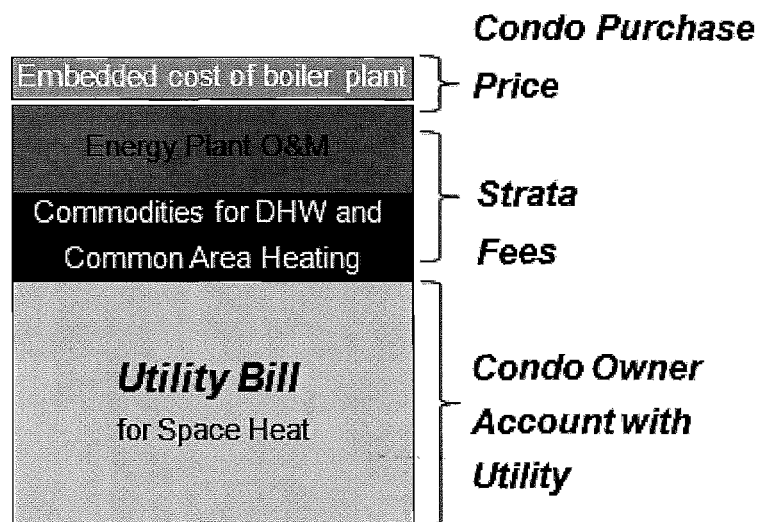
The capital and operating costs for BAU heating systems have historically been lower than any other available technology, however for many reasons electrical heating systems are becoming less attractive and are not considered to be a sustainable energy system because:

- Electricity rates are likely to rise dramatically in BC, as much as 33% in the next four years.
- Peak electricity demand in BC is currently met with imported fossil fuel generated power, which increases greenhouse gas emissions and reliance on a depleting resource. This is one of the key reasons for the existence of BC Hydro's Power Smart program which is designed to reduce electrical demand wherever possible.
- Electricity is high grade power that is most effectively applied to high grade uses (i.e. lighting, appliances). Heating and cooling requires only low grade power that can be more efficiently supplied by district energy systems with renewable energy sources such as sewer heat recovery.

**Business as Usual Cost for
Energy = \$80-90/MWh**
(today's costs)

*User pays more than just utility
bill for supply of thermal energy*

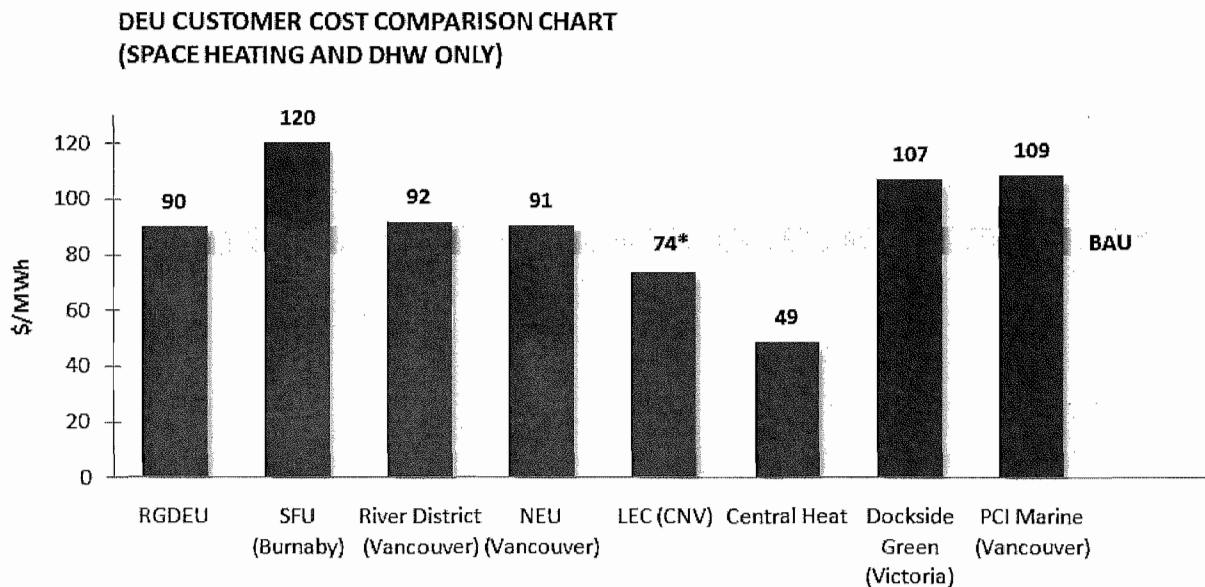
*Std industry cost for comparing
DEU to conventional systems.*



The BAU cost to the consumer for space heating and hot water heating in a multi-unit residential building has been estimated to be between \$80 - \$90/MWh annually, based on the independent studies performed by Compass Resource Management, Associated Engineering and Pacific Institute for Climate Solutions. This number equates to \$8.00 – \$9.00 per m2 annually. Actual consumers in multi-unit residential buildings will experience a range of costs depending on the building condition, amenities and fuel costs.

DEU cost to the customer necessary to support the proposed business case is between \$88 and \$90 per m2 annually, which is the same as the BAU cost of \$8.00 – \$9.00 per m2 annually. The business plan for DEUs in Richmond, consistent with the City’s approach to ADEU, assumes an annual rate adjustment of 4% calculated as a 2% increase above the estimated 2% CPI.

A comparison of RGDEU and other DEUs in the region is included below, highlighting RGDEU’s competitiveness with other DEU’s as it relates to customer rates.



* As of July 2014.