

NO: R150

COUNCIL DATE: July 9, 2018

REGULAR COUNCIL

TO: **Mayor & Council**

DATE: **July 5, 2018**

FROM: **General Manager, Engineering**

FILE: **5500-20**

SUBJECT: **Amendments to District Energy System Bylaw, 2012, No. 17667**

RECOMMENDATION

The Engineering Department recommends that Council:

1. Receive this report for information;
2. Approve amendments to the "*District Energy System By-law, 2012, No. 17667 Amendment Bylaw, 2018, No. 19587*" as documented in Appendix "I"; and
3. Authorize the City Clerk to bring forward the necessary amendment By-law for the required readings, attached as Appendix "II".

INTENT

The purpose of this report is to obtain Council approval to amend the *District Energy System By-law, 2012, No. 17667* (the "Bylaw") to allow for the City to recover costs directly from developers associated with the design, construction and installation of an energy transfer station and distribution system extension, infrastructure that is required to service their building only. These costs are currently being embedded in the City's thermal energy rates fixed capacity charge which presents an issue of fairness to Surrey City Energy Customers.

BACKGROUND

At the Regular Council meeting on December 16, 2013, Council adopted the recommendations of Corporate Report No. R246; 2013, attached as Appendix "III" to this report, that authorized District Energy Rate Setting Policy, No. H-53. The Policy forms the basis for the establishment and adjustment of Surrey City Energy's utility rates and includes a series of Rate Setting Principles that are to be observed by staff while developing and updating the rates.

The Policy is based on the following rates setting principles:

- Cost Recovery;
- Rate Competiveness;
- Return on Investment;
- Shortfall Recovery;
- Low-Carbon/Renewable Energy Targets; and
- Fairness.

Customer rates are based on a fixed capacity charge (the “Levy”), and a variable consumption charge (the “Charge”). The Levy is established in order to ensure a minimum level of revenue is collected to offset the utility’s fixed costs which are independent of annual energy consumption. Surrey City Energy’s fixed costs include the costs of financing capital infrastructure, non-fuel operations and maintenance costs and depreciation. The revenue collected from the Levy represents approximately 60% of the utility’s total revenue.

Surrey City Energy incurs financing costs on capital infrastructure that is required to meet forecast demand of current and future customers. This capital infrastructure includes the energy centres where heat is generated, the distribution piping system (“DPS”) which is how heat is distributed and the energy transfer stations (“ETS”) which is the point of delivery to the customer buildings. The energy centres and DPS are sized to meet the aggregate demand of the utility’s customer base with additional capacity to serve anticipated demand from future customers. The service connections into individual buildings and the ETS’ inside the buildings are sized for the specific demand of each individual customer’s building, which is determined during building design by the developer’s mechanical engineer.

Currently, the total cost of all capital infrastructure is paid for by Surrey City Energy and recovered through the Levy paid for by customers over time. The share of the total cost represented by each of the 3 major types of capital infrastructure is shown below in Figure 1.

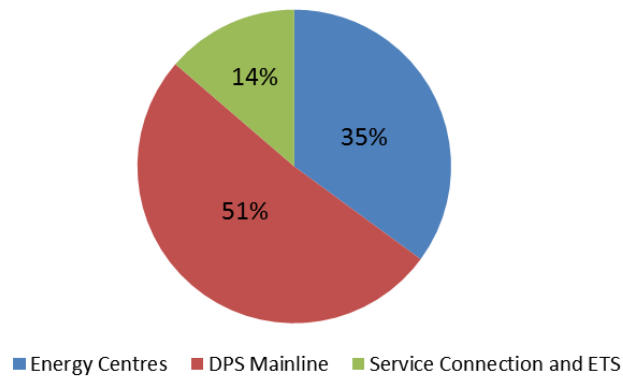


Figure 1 - Breakdown of Capital Infrastructure recovered by the Levy

DISCUSSION

Surrey City Energy has been in operation since 2015 and currently has 7 buildings connected to the network and 5 buildings currently under various stages of construction which has provided staff with a sufficient amount of operational data to determine trends in energy demand. Operational data has been collected over this period which suggests that actual measured demand in customer buildings tends to be significantly lower than the forecasted demand provided by mechanical engineers during design. While the scale of the discrepancy varies from building to building, the trend is consistent.

As the cost of the service connection and ETS is driven by the size of the customers’ demand, Surrey City Energy’s cost of construction is increased by factors that are outside of its control and of no benefit to Surrey City Energy as a whole. The result is that the Levy will need to be increased for Surrey City Energy to ensure that it is recovering its costs for infrastructure that is core to the proper functioning of the building. This presents an issue of fairness in regards to the transfer of cost from developers to rate payers for core building infrastructure.

In order to address this issue, staff are of the opinion that amendments should be made to the District Energy System Bylaw that stipulate fees be collected from the developer to allow Surrey City Energy to better control the costs of capital infrastructure, ensure cost recovery of current and future capital costs, and improve fairness to the customers base.

Comparison with Other City Utilities

Surrey City Energy is similar to other City utilities such as sewer, water and drainage in that it operates on a cost recovery basis. However, unlike the other City utilities, the City takes full responsibility for design and construction of the district energy service connection into the customer building. This is necessary for the City to retain sufficient control over the design parameters which affect how the system will operate.

In the case of the sewer and drainage utilities, developers are responsible for the design and construction of the service connection into the building as well as the necessary pumping and detention systems. The requirements of the water utility are that the developer provides the service connection into the building as well as all cross-connection control devices and metering equipment. These are all costs that are born by the developer and, therefore, excluded from the capital infrastructure costs that need to be recovered by the City through customer rates.

Comparison with Other District Energy Utilities

The rate structures of other local district energy utilities vary from place to place. Utilities in the City of Richmond and the City of North Vancouver are two examples where connection fees are collected to account for the costs associated with the service connection and ETS costs described above. The district energy utility in Richmond invoices the developer directly for all costs incurred by the utility in the design and construction of the service connection and ETS. In North Vancouver, developers are charged a connection fee (in \$/kW) that is based on the level of demand requested by the developer as well as a meter charge intended to offset the costs of the metering equipment and staff time in preparing the monthly bills. In addition, developers in North Vancouver are responsible for the cost of extra piping from the property limit to the ETS in cases where a mechanical room is remotely located.

Proposed Bylaw Amendments

In order to address the issues of cost recovery and fairness described above, staff propose that the Bylaw be amended to allow for the collection of additional fees from the developer to account for the costs to the City associated with the design, construction and installation of an ETS and distribution system extension.

Staff propose that these costs be quantified based on the amount of heating capacity requested by the developer in advance of building permit issuance in an amount equal to \$100/kilowatt of peak heat energy demand. This amount is being proposed based on the cost of design, construction and installation of the ETS and distribution system extension for an average Surrey City Energy customer. As an example, a residential high-rise building with a total floor area of 25,000 m² would require approximately 1,425 kilowatts of peak heat energy demand resulting in a total connection cost of \$142,000. In comparison, if the same building was not connecting to district energy and instead used an onsite natural gas boiler system, the cost to the developer would be in the order of \$500,000.

The proposed fee will be collected from developers in advance of the issuance of the full building permit. This will ensure that connection costs which are a factor of requested capacity are considered during the design process with the intent of minimizing the amount of capacity being requested by individual buildings.

Housekeeping Amendments

In addition to the recommended changes above, a number of housekeeping amendments are being recommended to ensure that the Bylaw is up to date and that the wording is consistent throughout the Bylaw. The proposed amendments to the Bylaw are attached as Appendix "I" to this report.

Grandfathering Policy

In order to provide the development industry with some time to incorporate the proposed amendments into their pro-formas, it is recommended that a grandfathering policy similar to that of the Development Cost Charge ("DCC") Bylaw be utilized. The effect will be that in-stream applications will have a period of one year from final adoption of the proposed Bylaw amendments to have their building permit applications issued in order to apply in advance of the proposed fee being implemented.

Industry Consultation

Staff presented the details of the proposed Bylaw amendments to the Development Advisory Committee on April 26, 2018. While there were no major objections to the imposition of connection costs to be recovered from the developer, there were a number of minor concerns expressed. These concerns are summarized below.

Increased cost to developers

There was a concern raised that the proposed amendments would increase the cost for development within the context of increasing construction cost. There was also a question raised as to whether the City would consider covering the cost of a base level of service with the developer being responsible for the costs associated with additional requested capacity above the base level. While this would help address the issue of unnecessary excess capacity being requested, it would not address the fairness issue of the cost of core building services being transferred to rate payers. The Bylaw amendments as proposed would bring Surrey City Energy in line with other City utilities and district energy utilities more broadly, in regards to who is responsible for the cost of customer connection infrastructure.

Timing of Collection of Connection Costs

A question was raised as to whether the City would consider collecting the connection costs from the developer in advance of Occupancy Permit rather than in advance of the Building Permit in order to delay the impact on the financing of projects. Staff are of the opinion that this would make collection of the costs more difficult and it would reduce the immediacy of the price signal on the developer to minimize the amount of capacity being requested during the design process. Further, the proposed timing would coincide with the collection of Building Permit Fees and DCCs.

Grandfathering Policy

A concern was raised that the proposed implementation date, which at that time was that projects with approved Development Permits prior to adoption of the Bylaw amendment will be exempt, provided that they are issued a Building Permit within one year of the adoption of the proposed Bylaw amendments, would not provide enough time for developers of in-stream projects to adjust their pro-formas to account for the additional costs.

Staff reviewed the policy in relation to the grandfathering provided by the City's DCC Bylaw, which provides rate protection for in-stream applications provided that their building permit is issued within one year, and believe that it is fair and reasonable to adopt a similar approach to new proposed fee

Legal Services Review

Legal Services has reviewed the Bylaw amendments and have no concerns.

SUSTAINABILITY CONSIDERATIONS

The proposed Bylaw amendments support the Sustainability Charter 2.0 themes of Energy and Climate. Specifically, it supports the following Desired Outcomes ("DO") and Strategic Directions ("SD"):

- Energy and Climate DO 8: Neighborhood-scale district energy systems provide low-carbon energy in dense urban neighborhoods;
- Buildings and Sites SD 13: Continue to support low-carbon district energy networks; and
- Buildings and Sites SD 17: Better integrated community and corporate green building and infrastructure strategies.

CONCLUSION

The Engineering Department recommends that Council:

1. Receive this report for information;
2. Approve amendments to the "*District Energy System By-law, 2012, No. 17667 Amendment Bylaw, 2018, No. 19587*" as documented in Appendix "I"; and
3. Authorize the City Clerk to bring forward the necessary amendment By-law for the required readings, attached as Appendix "II".

Fraser Smith, P.Eng., MBA
General Manager, Engineering

FS/JA/JO/am/jma/ggg

Appendix "I" – Proposed Amendments to District Energy System Bylaw, 2012, No. 17667

Appendix "II" – District Energy System Bylaw, 2012, No. 17667, Amendment Bylaw, 2018, No. 19587

Appendix "III" – Corporate Report R246; 2013

APPENDIX "I"

CITY OF SURREY
BYLAW NO. 19587

A bylaw to amend the provisions of "District Energy System
By-law, 2012, No. 17667"

.....

The Council of the City of Surrey ENACTS AS FOLLOWS:

1. "District Energy System By-law, 2012, No. 17667", as amended, is hereby further amended as follows:
 - (a) In the Table of Contents, Schedules, insert a new line with the words "Schedule E – Connection Costs" immediately after "Schedule D – Application and Miscellaneous Fees".
 - (b) Section 1, Interpretation, Definitions is amended as follows:
 - i. The definition of "Building By-law" is deleted in its entirety and replaced with a new definition as follows:

""Building Bylaw" means 'Surrey Building Bylaw, 2012, No. 17850' as may be amended or replaced from time to time;"
 - ii. The definition of "early adopter" is deleted in its entirety.
 - (c) Section 2, Application of By-law is amended by deleting Section 2.5 Exemption for early adopters in its entirety.
 - (d) Section 4, Building Permit Requirements For Building Mechanical System is amended in sub-section 4.2(c) by deleting the words "excess demand fee" and replacing them with the words "connection costs".
 - (e) Section 8, Levies and Charges and Other Costs is amended by deleting Section 8.1 in its entirety and replacing it with a new Section 8.1 as follows:

"Connection Costs

- 8.1 Pursuant to section 4.2(c), a building permit applicant must pay the connection costs set out in Schedule E."

(f) Insert a new Schedule E, attached hereto and forming part of this bylaw, immediately after Schedule D.

2. This Bylaw shall be cited for all purposes as "District Energy System Bylaw, 2012, No. 17667, Amendment Bylaw, 2018, No. 19587".

PASSED FIRST READING on the th day of , 2018.

PASSED SECOND READING on the th day of , 2018.

PASSED THIRD READING on the th day of , 2018.

RECONSIDERED AND FINALLY ADOPTED, signed by the Mayor and Clerk, and sealed with the Corporate Seal on the th day of , 2018.

_____MAYOR

_____CLERK

SCHEDULE E

CONNECTION COSTS

1. The connection costs in Section 8.1 shall equal \$100/kilowatt of peak heat energy demand for the cost to the City associated with the design, construction and installation of an energy transfer station and distribution system extension.
2. The connection costs set out in this Schedule E shall not apply to:
 - (a) building permits that are in-stream on the effective date and which are issuable within one year of the effective date; and
 - (b) building permits on lands with a precursor application in-stream on the effective date and where the related building permit is issuable within one year of the effective date.
3. For the purposes of this Schedule E the following definitions shall apply:

"effective date" means the date on which this Schedule E comes into force, which is established as the date of final adoption of "District Energy System Bylaw, 2012, No. 17667, Amendment Bylaw, 2018, No. 19587".

"in-stream" means, in reference to an application, not determined, rejected or withdrawn and:

- (a) in the case of an application for building permit, one for which the application form has been completed, the application fee has been paid, and all required supporting documentation including all applicable architectural, structural, plumbing, electrical, mechanical and site drainage drawings necessary to make the application complete has been submitted and accepted by the City as a legitimate application;
- (b) in the case of a rezoning application, one for which the application form has been completed, the application fees have been paid and all required supporting documentation necessary to make the application complete has been submitted and accepted by the City as a legitimate application; and
- (c) in the case of an application for development permit, one for which the application form has been completed, the application fees have been paid and all required supporting documentation necessary to make the application complete has been submitted and accepted by the City as a legitimate application.

"issuable" means, in the case of a building permit, an application which meets the requirements of an in-stream application and for which:

- (a) Council has approved any applicable rezoning and/or development permit and/or development variance permit;
- (b) all required off-site legal encumbrances relating to engineering services have been registered at the Land Title Office on title to the subject property;
- (c) any plan, including a plan of subdivision, consolidation, or road dedication, that would affect the legal description of the subject property has been registered at the Land Title Office on title to the subject property;
- (d) all review comments arising from the building permit application review process have been addressed to the satisfaction of the City; and
- (e) all applicable fees and levies have been paid.

"precursor application" means, in relation to a building permit, that there is an:

- (a) in-stream development permit application and that the development authorized by the building permit is entirely within the area of land that is subject to the development permit application; or
- (b) in-stream rezoning application and that the development authorized by the building permit is entirely within the area of land that is subject to the rezoning application.

CITY OF SURREY



District Energy System By-law, 2012, No. 17667

DISTRICT ENERGY SYSTEM BY-LAW

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BY-LAW NO. 17667

A By-law to provide for the establishment
and operation of a district energy system

As amended by By-law No. 18391, 02/02/15; 18574, 12/14/15; 18603, 12/14/15; 18966, 12/19/16;
19413, 12/18/17

THIS IS A CONSOLIDATED BY-LAW PREPARED BY THE CITY OF SURREY FOR CONVENIENCE ONLY. THE CITY DOES NOT WARRANT THAT THE INFORMATION CONTAINED IN THIS CONSOLIDATION IS CURRENT. IT IS THE RESPONSIBILITY OF THE PERSON USING THIS CONSOLIDATION TO ENSURE THAT IT ACCURATELY REFLECTS CURRENT BY-LAW PROVISIONS.

THE COUNCIL OF THE CITY OF SURREY, in public meeting assembled, ENACTS AS FOLLOWS:

**SECTION 1
INTERPRETATION**

Name of By-law

- 1.1 This By-law may be cited for all purposes as "District Energy System By-law, 2012, No. 17667".

Definitions

- 1.2 In this By-law:

"applicant" means an applicant for a building permit under section 4.2;

"building" means any structure used or intended for supporting or sheltering any use or occupancy either of a temporary or permanent nature;

"building area" means building area as defined by the total sum of all floor areas enclosed or partially enclosed by the exterior perimeter of a building or structure including without limitation stairways, elevator shafts, storage rooms, mechanical rooms and basements, and excluding areas for parking that are provided as an accessory use to the building or structure;

"Building By-law" means 'Surrey Building By-law, ~~2012:987~~, No. ~~9011~~ - 17850 as may be amended or replaced from time to time;

"Building Inspector" means the General Manager, Planning and Development, or his or her duly appointed representatives and assistants;

"building mechanical system" includes the internal space heat energy and domestic hot water distribution system for a building;

"charge" means a variable consumption fee based on the amount of heat energy measured in watt-hours used in, and recorded at the meter or estimated by the Collector under this Bylaw for, a designated property as shown in Schedule C, Part 2;

"City" means the City of Surrey;

"Collector" means the individual appointed by Council to be the Collector of Taxes or a person duly authorized to carry out the powers and duties of the Collector of Taxes;

"community energy centre" means an energy supply facility that provides heat energy in the form of hot water to designated buildings through the distribution system;

"Council" means the council of the City of Surrey;

"delivery point" means the outlet of the heat exchanger at a designated property;

"designated building" means a building to which this By-law applies by virtue of section 2.1 or 2.4;

"designated property" means a parcel of real property on which a designated building is situated;

"distribution system" means a thermal distribution network that links the community energy centre with the energy transfer station in each designated building, and that includes separate loops for the supply and return of heat energy in the form of hot water;

"distribution system extension" means that part of the distribution system that is situated on, over, under, or in a parcel of real property on which a designated building is situated or in a designated building;

"district energy system" means the district energy system referred to in section 3.1, and consists collectively of the community energy centre, distribution system and energy transfer station in each designated building, and all necessary appliances and equipment;

~~"early adopter" means an owner of a building that meets the criteria described in:
(a) section 2.1(a); or
(b) section 2.2(a) where the building has a floor area ratio of 2.5 or greater,
and who enters into a partnering agreement with the City within three years of the adoption date of this By-law regarding the owner's use of the district energy system;—~~

"energy transfer station" means equipment owned by the City and used to meter, for billing purposes, the amount of energy consumed in a designated building, and to transfer heat energy from the distribution system to the building mechanical system in a designated building, and includes pipes for the supply and return of hot water, valves, controls, meters, and separate heat exchangers for domestic hot water and space heating;

"entry points" mean two openings in an exterior wall of a designated building for the passage of the supply and return pipes connecting the distribution system extension and energy transfer station;

"floor area ratio" means the figure obtained when the area of all the floors of the buildings constructed or proposed to be constructed on a parcel is divided by the area of the parcel;

"future designated building" means a building described in section 2.2(a) or (b);

"General Manager, Engineering" means the General Manager, Engineering for the City and includes his or her duly appointed assistants and representatives;

"heat energy" means heat distributed or delivered by water including for space heating and/or, domestic hot water, and/or heat for ventilation make-up air and/or any other heating requirements;

"heat exchanger" means the equipment, including ventilation systems and electrical pumps, installed at a designated property transfer of energy from the district energy system to a designated property;

"levy" means a fixed capacity fee based on the design, and the estimated peak heat energy demand, approved or varied by the General Manager, Engineering under this Bylaw for a designated building as shown in Schedule C, Part 1;

"meter" means a thermal energy meter at an energy transfer station consisting of a water flow meter, temperature sensors, and associated electronics used to measure and record the heat energy supplied to the designated building which houses the energy transfer station;

"owner" means an owner of a parcel of real property including the registered owner of an estate in fee simple, the tenant for life under a registered life estate, the registered holder of the last registered agreement for sale, the holder or occupier of land held in the manner referred to in the definition of "Owner" in the Schedule to the *Community Charter*, S.B.C. 2003, c.26, and a strata corporation established or continued under the *Strata Property Act*, S.B.C. 1998, c.43.

"parcel" means any lot, block, or other area in which land is held or into which it is subdivided, but does not include a highway.

"peak heat energy demand" means the maximum amount of heat energy, measured in watts, estimated for a designated building and approved by the General Manager, Engineering in accordance with this Bylaw;

"points of delivery" mean the valves on the building side of the heat exchangers at an energy transfer station;

"registered professional" means an architect or engineer registered in the Province of British Columbia, as a member in good standing in the Architectural Institute of British Columbia or the Association of Professional Engineers and Geoscientists of British Columbia;

"service" means the delivery by the City to a designated building of heat energy by way of the district energy system; and

"Service Area A" means the geographic location or area for which the service is currently available from the City and is defined in Schedule A, Figure 1;

"Service Area B" means the geographic location or area for which the service will be available in the future from the City and is defined in Schedule A, Figure 1;

Application of and conflict with other by-laws

- 1.3 The requirements of this By-law are in addition to the requirements of the Building By-law and other City by-laws, except that in case of conflict between the Building By-law or other City by-laws and this By-law, this By-law will prevail.

Table of contents

- 1.4 The table of contents for this By-law is for convenient reference only, and is not for use in interpreting or enforcing this By-law.

Schedules

- 1.5 Schedules attached to this By-law form part of this By-law.

Severability

- 1.6 A decision by a court that any part of this By-law is illegal, void, or unenforceable severs that part from this By-law, and is not to affect the balance of this By-law.

SECTION 2 APPLICATION OF BY-LAW

Compulsory use of district energy system

2.1 Each owner in Service Area A of:

- (a) a new building with a floor area ratio equal to or greater than 1.0 proposed for construction or under construction for which the Building By-law requires submission of a building permit application and issuance of an occupancy permit to which the owner, as at the date of enactment of this By-law, is not yet entitled; or
- (b) an existing building with a floor area ratio equal to or greater than 1.0 where the estimated value of proposed alterations or alterations under construction which require submission under the Building By-law of a building permit application is more than \$400,000 and 50% of the building's latest assessed value according to the records of the British Columbia Assessment Authority,

must make use of the district energy system in accordance with the terms and conditions of this By-law.

Compulsory hydronic systems

2.2 Each owner in Service Area B of:

- (a) a new building with a floor area ratio equal to or greater than 1.0 proposed for construction or under construction for which the Building By-law requires submission of a building permit application and issuance of an occupancy permit to which the owner, as at the date of enactment of this By-law, is not yet entitled; or
- (b) an existing building with a floor area ratio equal to or greater than 1.0 where the estimated value of proposed alterations or alterations under construction which require submission under the Building By-law of a building permit application is more than \$400,000 and 50% of the building's latest assessed value according to the records of the British Columbia Assessment Authority,

must utilize hydronic systems that are compatible with the district energy system for all space heating and hot water heating, as described in the City's Design Criteria Manual / Energy Services Design Requirements, and in accordance with those terms and conditions of this By-law stated to be applicable to future designated buildings.

Compulsory hydronic systems where floor area ratio is less than 2.5

2.3 Where a building described in section 2.2(a) or (b) has a floor area ratio of less than 2.5, the owner will not be required to utilize hydronic systems for space heating within individual units, but hydronic systems will be required for all other space heating and hot water heating in the building.

Permissive use of district energy system

- 2.4 An owner of property located outside Service Area A and Service Area B but within the City may apply to the General Manager, Engineering to utilize the district energy system, if:
- (a) the General Manager, Engineering is of the opinion that the district energy system is capable of servicing the building that is the subject of the application;
 - (b) the General Manager, Engineering 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 General Manager, Engineering, undertaking, among other matters, to wholly or partially, in the City's sole discretion, fund the capital cost of extending the district energy system to the owner's property in an amount and at a time determined by the General Manager, Engineering,

the General Manager, Engineering may approve the application, in which case the owner must utilize the district energy system in accordance with the terms and conditions of this By-law.

Exemption for early adopters

~~2.5 Despite sections 2.1, 2.2 and 2.3, an early adopter will be exempt from those provisions of this By-law identified in the partnering agreement entered into between the early adopter and the City.~~

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SECTION 3 IMPLEMENTATION OF DISTRICT ENERGY SYSTEM

Authorization for district energy system

- 3.1 Council authorizes the design, construction, installation, maintenance, operation, repair, and management of a district energy system for the generation, storage, transmission, distribution and sale of heat energy to supply the entire heat energy demand for each designated building.

Ownership of district energy system

- 3.2 Ownership of the property comprising the district energy system will remain vested in the City, and is not to pass to any owner, or other person who has an interest in a designated building or designated property, and, despite any attachment or annexation to a designated building, the distribution system extension and energy transfer station are not to become part of the real property.

Role of the Collector and the General Manager, Engineering

- 3.3 For the purposes of this By-law, the Collector shall have charge of the levies, charges and fees and their collection and the General Manager, Engineering shall have charge and control of all properties and works in connection with the district energy system and of all connected engineering and mechanical work.

Authority for policies and criteria

- 3.4 The Collector and the General Manager, Engineering may establish or amend policies and criteria relating to the district energy system.

**SECTION 4
BUILDING PERMIT REQUIREMENTS
FOR BUILDING MECHANICAL SYSTEM**

Application to designated buildings and future designated buildings

- 4.1 All conditions of section 4 apply to designated buildings. All conditions of section 4 apply to future designated buildings with the exception of sections 4.2(c), 4.2(h) and 4.9(e).

Building permit application

- 4.2 A person who applies, under the Building By-law, for a permit 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 a designated building or future designated building;
 - (b) a certificate, 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,
 - (iv) annual average heat energy demand for space heating,
 - (v) annual average heat energy demand for domestic hot water, and
 - (vi) annual average heat energy demand for any uses other than space heating and domestic hot water;

- (c) a cheque in the amount of the ~~excess demand fee~~connection costs referred to in section 8.1;
- (d) the proposed location of the energy transfer station;
- (e) the proposed location of the distribution system extension;
- (f) the proposed location of the distribution system extension entry points;
- (g) the proposed schedule for installation or alteration of the building mechanical system;
- (h) the proposed commencement date for the delivery of heat energy by the City to the energy transfer station; and
- (i) such other information as the Building Inspector or General Manager, Engineering may require.

Submission of copy of application

- 4.3 The owner must submit a copy of the building permit application described in section 4.2 to the General Manager, Engineering.

Approval of estimated maximum heat energy demand

- 4.4 The estimated peak heat energy demand submitted under section 4.2(b) is subject to approval by the General Manager, Engineering.

Approval of locations

- 4.5 The proposed location of each of the:

- (a) energy transfer station, submitted under section 4.2(d);
- (b) distribution system extension, submitted under section 4.2(e); and
- (c) entry points, submitted under section 4.2(f),

is subject to approval by the Building Inspector and General Manager, Engineering.

Approval of alternate locations

- 4.6 If:

- (a) the location which the owner proposes for the energy transfer station, distribution system extension, or entry points would be acceptable to the Building Inspector and General Manager, Engineering except for increased costs the City would incur

to install the energy transfer station or distribution system extension in that location; and

- (b) before issuance of the building permit, the owner:
 - (i) pays the City the estimated increased costs calculated by the General Manager, Engineering, and
 - (ii) agrees to pay the City on demand any amount by which the actual increased costs calculated by the General Manager, Engineering exceed the estimated increased costs,

the Building Inspector and General Manager, Engineering may approve the alternate location.

Approval of schedule

- 4.7 The proposed schedule for installation or alteration of the building mechanical system is subject to approval by the General Manager, Engineering.

Design of building mechanical system

- 4.8 The design of the building mechanical system is subject to approval by the Building Inspector and General Manager, Engineering.

Design and technical requirements

- 4.9 The building mechanical system must comply with the following design and technical requirements:
 - (a) the City's Design Criteria Manual / Energy Services Design Requirements or as stipulated by the General Manager, Engineering;
 - (b) the Building By-law;
 - (c) the applicable edition of the BC Building Code;
 - (d) the design must not incorporate features that increase the difficulty of efficiently integrating the building mechanical system and energy utility system;
 - (e) the system must achieve a minimum water temperature drop across the heat exchanger interface with the energy utility system of at least 15°C between the energy utility system hot water supply and return pipes as recorded at the meter;

- (f) the space heating system must include a variable flow operation with variable speed pumps to minimize the pumping power requirements, and to achieve the minimum water temperature drop;
- (g) all control valves, being terminal units and zone valves, must be the 2-way modulating type or the on/off type for fan coil units;
- (h) the system must not include 3-way valves that allow flow to by-pass the heating elements; and
- (i) the system must require an energy utility supply temperature of no greater than 65°C when the outdoor ambient temperature is equal to or greater than 0°C.

Approval of building permit

4.10 The building permit is subject to approval by the:

- (a) Building Inspector under the Building By-law; and
- (b) Building Inspector and General Manager, Engineering under this By-law.

No work before permit issuance

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

SECTION 5 DESIGN AND INSTALLATION OR ALTERATION OF BUILDING MECHANICAL SYSTEM

Integration with district energy system

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

Prohibited components

5.2 A building mechanical system must utilize the district energy system for all the space heating and domestic hot water requirements for a designated building, and must not incorporate any heat production equipment including but not limited to boilers, furnaces, hot water heaters or make-up air heaters, except that:

- (a) an owner who is constructing a new building or altering an existing building may incorporate, as part of the building mechanical system, a solar system to generate heat energy or equipment to acquire waste heat energy from the refrigeration or cooling system of the building or of another building in the vicinity, for the purpose of supplementing the heat energy provided by the district energy system; and
- (b) a person who is altering an existing building may retain components otherwise prohibited under this section 5.2 to the extent permitted by the Building Inspector under the Building By-law or by the Building Inspector and General Manager, Engineering under this By-law.

Installation of valves

- 5.3 The City will install the valves on the building side of the heat exchangers at the energy transfer station.

Scheduling

- 5.4 An owner must:
- (a) ensure that installation of the building mechanical system proceeds in accordance with the schedule approved under section 4.7, and any changes to the schedule approved under this section 5.4; and
 - (b) advise the Building Inspector and General Manager, Engineering 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 Building Inspector and General Manager, Engineering.

Approval of installation or alteration of work

- 5.5 Completion of the installation or alteration of a building mechanical system in a designated building or future designated building is subject to approval by the Building Inspector and General Manager, Engineering under this By-law.

Adjustment of increased installation costs

- 5.6 Upon completion by the City of installation of the energy transfer station and distribution system extension or either of them in an alternate location under section 4.6:
- (a) after notice from the General Manager, Engineering of the amount by which the actual increased costs calculated by the General Manager, Engineering exceed the estimate, the owner referred to in section 4.6 must pay the City the difference; or
 - (b) the City must pay the owner the amount by which such actual increased costs are less than the estimate.

No occupancy permit

- 5.7 An owner is not entitled to issuance of an occupancy permit under the Building By-law for a designated building or a future designated building until the General Manager, Engineering has given approval under section 5.5, and, where applicable, the owner has paid the City any shortfall under section 5.6(a).

SECTION 6 ENTRY ONTO AND ACCESS TO REAL PROPERTY

Entry with respect to district energy system

- 6.1 The General Manager, Engineering, and other authorized employees, contractors or agents of the City, may enter onto real property at any reasonable time for the purpose of installation, maintenance, repair, or removal of a district energy system.

Entry with respect to building mechanical system

- 6.2 The General Manager, Engineering, and other authorized employees, contractors or agents of the City, may enter onto real property at any reasonable time to inspect the real property and appliances and equipment, including any building mechanical system, and to enforce this By-law.

Work on entry

- 6.3 Without limiting the generality of sections 6.1 and 6.2, the General Manager, Engineering, and other authorized employees, contractors or agents of the City, for the purposes of those sections, may conduct investigations, expose pipes, calibrate instruments, and read and test meters.

Access to designated property

- 6.4 The owner of a designated property that is to receive the service must sign and deliver to the City a covenant and a statutory right of way to be registered against title to the designated property, in the format specified by the City, for the installation, operation and maintenance on the designated property of all necessary facilities for supplying the service to the designated property.

Access to intervening property

- 6.5 If one or more privately-owned intervening properties are located between the designated property and the district energy system, then the owner of the designated property will obtain, at the owner's sole cost, a registered easement and a statutory right of way in favour of the City, in a form specified by the City, for the installation, operation and

maintenance on each intervening property of all necessary facilities for supplying the service to the designated property.

**SECTION 7
OPERATION OF DISTRICT ENERGY SYSTEM
AND BUILDING MECHANICAL SYSTEM**

Operation of district energy system

7.1 The City will maintain, repair, and manage the district energy system including the energy transfer station in each designated building up to and including the points of delivery.

No obligation to provide service

- 7.2 Nothing in this By-law shall obligate the City to provide the service to any person when:
- (a) the cost of laying the mains to the premises of the person to provide the service would be excessive and create an additional burden upon the revenues of the district energy system, unless the person shall pay to the City the cost of laying the mains to the person's property and other associated works; or
 - (b) the capacity of the district energy system is insufficient to provide the service.

No guarantee of service

7.3 The City does not guarantee service, or any particular level of service, to any designated building.

City not liable for failure of the district energy system

7.4 The City will not be liable for the failure of the district energy system in consequence of any accident or damage to the district energy system, breakdown or malfunction of the district energy system, or any temporary stoppage from breaks, alterations or repairs, whether the failure arises from the negligence of any person in the employ of the City or any other person or through natural deterioration or obsolescence of the district energy system, or otherwise.

City's ability to change operating conditions without liability

7.5 The City reserves the right at any and all times, without notice, to change operating conditions of the service, for the purposes of making repairs, extensions, alterations or improvements, or for any other reason, and neither the City, its officers, employees, contractors or agents shall incur any liability of any kind whatever by reason of the cessation in whole or in part of the district energy system or changes in operating conditions.

Tampering with district energy system

- 7.6 A person must not tamper, interfere with, damage, or destroy any part of the district energy system.

Operation of building mechanical system

- 7.7 An owner of a designated property must maintain and repair the building mechanical system to the points of delivery including:
- (a) keeping the building mechanical system free of foreign material so as to prevent fouling of the heat exchangers at the energy transfer station; and
 - (b) treating water in the building mechanical system sufficiently to prevent corrosion of the heat exchangers at the energy transfer station, and in accordance with the minimum criteria set out in Schedule B,

Damage to district energy system components

- 7.8 An owner of a designated property must advise the City immediately of any damage to the energy transfer system or distribution system extension.

No obstruction

- 7.9 An owner of a designated property must not construct any structure, which in the sole opinion of the General Manager, Engineering, obstructs access to a distribution system extension, energy transfer station, or any part of the district energy system above ground or underground.

Protection of equipment

- 7.10 An owner of a designated property must take reasonable care of and protect all equipment installed by the City on the owner's designated property.

No unauthorized changes

- 7.11 No equipment such as heat exchangers, meter-sets or related equipment will be installed, connected, moved or disconnected except by the City's authorized employees, contractors or agents or by other persons acting with the City's written permission.

Application for service

- 7.12 An owner of a designated property must apply to the General Manager, Engineering to commence service to a designated building at least 120 days before the earlier of:
- (a) the date the owner requires service; and
 - (b) the date of issuance of any occupancy permit for occupancy of the building.

Meter test

- 7.13 When an owner of a designated property notifies the General Manager, Engineering, in writing, that a past charge for service is excessive the General Manager, Engineering will arrange to have the meter tested at the expense of the owner.

Payment of meter testing fee

- 7.14 Before the City conducts the test outlined in section 7.13, the owner of the designated property requesting the test must pay the fee set out in Schedule D.

Accuracy of meter

- 7.15 A meter will be considered to be accurate unless the meter testing result indicates that the percentage accuracy of the meter is less than 95% or greater than 105%.

Meter found to be not accurate

- 7.16 If the test outlined in section 7.13 shows that the meter is not accurate, the meter testing fee will be refunded to the owner, the meter will be replaced or repaired by the City, and the excess charge for service will be refunded to the owner.

Meter found to be accurate

- 7.17 If the test outlined in section 7.13 shows that the meter is accurate, the meter testing fee will be retained by the City, no refunds or adjustments will be made in favour of the owner and the meter will not be replaced or repaired by the City.

Service calls

- 7.18 An owner of a designated property may apply to the General Manager, Engineering to temporarily interrupt service to a designated building by closing the appropriate valves or by such other means as the General Manager, Engineering may find appropriate.

Changes to energy transfer station or distribution system extension

7.19 An owner of a designated property may apply to the General Manager, Engineering to remove, relocate, or alter the energy transfer station or distribution system extension servicing a designated building.

Cost of changes to energy transfer station or distribution system extension

7.20 If the General Manager, Engineering agrees to remove, relocate, or alter the energy transfer station or distribution system extension referred to in section 7.19:

- (a) the General Manager, Engineering will give the owner an estimate of the cost;
- (b) the owner must pay the City the amount of the estimate before commencement of the work;
- (c) after completion of the work, the General Manager, Engineering will notify the owner of the actual cost;
- (d) if the actual cost is more than the estimated cost, the owner must pay the City the shortfall within 30 days after demand by the City; and
- (e) if the actual cost is less than the estimated cost, the City must pay the owner the excess except that if the owner owes the City money under this By-law at that time, the City may apply the excess against such debt.

Removal of equipment

7.21 If the supply of the service to an owner's designated building is discontinued or terminated for any reason then the City may, but is not required to, removed the energy transfer station and related equipment from the designated property.

SECTION 8 LEVIES AND CHARGES AND OTHER COSTS

~~Excess demand fee~~ Connection Costs

8.1 Pursuant to section 4.2(c), a building permit applicant must pay the connection costs set out in Schedule E~~the City the excess demand fee set out in Schedule C.~~

Imposition of levy

8.2 From and after the earlier of the date the owner of a designated building requires service, as indicated in the application referred to in section 7.12(a), and the date of issuance of

any occupancy permit for occupancy of the building, the owner must pay the City the levy set out in Schedule C.

Imposition of charge

8.3 From and after the date upon which service to a designated building begins, the owner of the designated property must pay the City the charge set out in Schedule C.

Billing for levy or charge

8.4 The Collector will send a bill for the amount of each levy or charge to each owner according to the frequency set out in Schedule C, and the bill will include:

- (a) the date when payment of the amount of each levy or charge is due and payable;
- (b) the number of megawatt hours of heat energy supplied to the energy transfer station; and
- (c) the number of megawatt hours of heat energy returned from the energy transfer station.

Payment of levy or charge

8.5 The owner of a designated property must pay the City the amount of each levy or charge on or before the due date set out in each bill referred to in section 8.4.

Amount added for late payment

8.6 Council hereby imposes a penalty or loss of discount of an amount equal to 5% of any levy or charge that remains unpaid after the date it is due under this By-law.

Insertion in tax roll

8.7 The Collector may insert each levy or charge in the real-property tax roll of the designated property.

Adjustment for partial period

8.8 The Collector may pro rate the amount of a levy or charge for a partial billing period on a daily basis.

Non-registering meter

8.9 If a meter for a designated building fails to register accurately the consumption of heat energy, the Collector will estimate the consumption, and render a bill based on the average previous consumption adjusted to take into account seasonal variations, changes in occupancy, or other factors which, in the opinion of the Collector or the General

Manager, Engineering, may affect the consumption of heat energy in the designated building.

Variation in matters affecting levy

8.10 With respect to a designated building:

- (a) the owner must give the General Manager, Engineering written notice at least 30 days in advance of any variation in use, occupancy, building alteration, or other matter that may affect the amount of the levy, and must include in the notice the date the owner anticipates such variation to take effect;
- (b) the owner may apply to the General Manager, Engineering to vary the estimated peak heat energy demand; or
- (c) the General Manager, Engineering may notify the owner that the General Manager, Engineering is varying the estimated peak heat energy demand,

and, if the General Manager, Engineering is of the opinion that, as a result of any such variation, the amount of the levy for the designated building should increase or decrease, the General Manager, Engineering may order such increase or decrease to take effect on a date specified by the General Manager, Engineering after taking into account the incremental costs to the City as a consequence of the variation.

Calculation of City's costs

8.11 Calculation of the costs or estimated costs the City incurs or expects to incur under this By-law will include, without duplication, amounts spent by the City using its own work force or engaging an independent contractor for gross wages, employee fringe benefits, materials, equipment rentals at rates paid by the City or set by the City for its own equipment, and fees and other charges payable to an independent contractor, plus an amount equal to 20% of those costs to cover the City's overhead and administrative expenses.

Back-billing

8.12 On discovery that service provided in the past by the City has not been billed yet to a designated property, the City may bill the cost associated to the owner of the designated property, providing details and, on submission of the bill to the owner, the amount billed will be due.

Historical billing information

8.13 An owner who requests historical billing information may be charged the cost of processing and providing the information. The cost will be charged based on the actual hours of work performed by the City in retrieving and preparing the information.

**SECTION 9
APPLICATIONS AND FEES**

Form of application

- 9.1 Each person who submits an application under this By-law must use the form of application prescribed by the General Manager, Engineering, Building Inspector, or Collector, as the case may be.

Fee for application

- 9.2 Each person who submits an application under this By-law must pay the applicable fee set out in Schedule D.

Returned cheques

- 9.3 If a person's cheque is returned to the City, that person must pay to the City on demand the amount set out in Schedule D.

**SECTION 10
OFFENCES AND PENALTIES
AND ENFORCEMENT**

Termination of service for failure to pay

- 10.1 Without limiting the City's other rights or remedies under this By-law, if an owner of designated property fails to pay to the City any levy, charge, fee, or cost for more than 30 days after the due date:
- (a) the Collector may serve notice upon the owner; and
 - (b) such notice will:
 - (i) set out the amount owing,
 - (ii) demand payment of that amount within 10 days from the date of such notice,
 - (iii) notify the owner that failure to pay that amount within such 10 days will result in the City ceasing service to the owner's building, and
 - (iv) notify the owner that the City will not restore such service until the owner has paid to the City the amount owing together with any additional costs incurred by the City in connection with such cessation and restoration of service.

Notice of violation

10.2 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 By-law; or
- (b) carry out any work or do anything to bring a building mechanical system into conformity with this By-law,

within the time specified in such notice.

Service of notice

10.3 An inspector or official of the City, or a By-law Enforcement Officer, may serve a notice under this By-law:

- (a) by mailing it by registered post to an owner at the address of the owner shown on the real property assessment roll prepared pursuant to the *Assessment Act*;
- (b) by handing it to the owner or other person who is the addressee of the notice; or
- (c) if the notice refers to real property, by posting it on the real property.

Offences under By-law

10.4 A person who:

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

is guilty of an offence against this By-law, and liable to the penalties imposed under this Section 10.

Fine for offence

- 10.5 Every person who commits an offence against this By-law 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 7.11 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 this By-law is liable to a fine of not less than \$500.00 for each offence.

Fine for continuing offence

- 10.6 Every person who commits an offence of a continuing nature against this By-law is liable to a fine for each day such offence continues.

Termination of service for failure to comply

- 10.7 Without limiting the City's other rights or remedies under this By-law, the City may enforce compliance with the requirements of this By-law against the owner by discontinuing the service to the designated building.

SECTION 11 LIMITATIONS ON LIABILITY

Responsibility before and after delivery point

- 11.1 An owner of a designated property is responsible for all expense, risk and liability for:
- (a) the use or presence of energy being delivered from the district energy system to the owner's property before it passes the delivery point;
 - (b) the use or presence of energy being returned from an owner's property to the district energy system after it passes the delivery point; and
 - (c) the City-owned facilities serving the owner's 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 owner or a person for whom the owner is responsible.

Responsibility after delivery point

- 11.2 The owner of a designated property is responsible for all expense, risk and liability with respect to the use or presence of energy being delivered to the owner's property after it passes the delivery point.

Responsibility for energy transfer station

- 11.3 The owner of a designated property is responsible for all expense, risk and liability with respect to all energy transfer station related equipment at the owner's property unless any loss or damage is:
 - (a) directly attributable to the negligence of the City, its employees, contractors or agents; or
 - (b) caused by or resulting from a defect in the equipment, and the owner must prove that negligence or defect.

For greater certainty and without limiting the generality of the foregoing, the owner is responsible for all expense, risk and liability arising from any measures required to be taken by the City to ensure that the energy transfer station related equipment on the owner's property are adequately protected, as well as any updates or alterations to the distribution system extension on the owner's property necessitated by changes to the grading or elevation of the owner's property or obstructions placed on such distribution system extension.

Owner indemnification

- 11.4 The owner of a designated property will indemnify and hold harmless the City and its elected and appointed officials, employees, contractors and agents from all claims, loss, damage, costs or injury (including death) suffered by the owner or any person claiming by or through the owner or any third party caused by or resulting from the use of energy by the owner or the presence of energy in the owner's property, or from the owner or owner's employees, contractors or agents damaging the City's facilities.

**SECTION 12
ENACTMENT**

Force and effect

- 12. This By-law will come into force and take effect on the date of its enactment.

READ A FIRST TIME on the 11th day of June, 2012.

READ A SECOND TIME on the 11th day of June, 2012.

READ A THIRD TIME on the 11th day of June, 2012.

RECONSIDERED AND FINALLY ADOPTED, signed by the Mayor and Clerk, and sealed with the Corporate Seal on the 25th day of June, 2012.

MAYOR

CLERK

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SCHEDULE A

Figure 1 – SERVICE AREA A & SERVICE AREA B



Produced by GIS Section: May 31, 2012, CS/AWB



**DISTRICT ENERGY SERVICE AREA
(SERVICE AREA A & SERVICE AREA B)**

**ENGINEERING
DEPARTMENT**

The data provided is compiled from various sources and IS NOT warranted as to its accuracy or sufficiency by the City of Surrey. This information is provided for information and convenience purposes only. Lot sizes, Legal descriptions and encumbrances must be confirmed at the Land Title Office.

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CORPORATE REPORTS\Eng-Utilities\
AW-DistrictEnergyServiceAreaFig1.mxd

SCHEDULE B

STANDARDS FOR TREATING WATER IN THE BUILDING MECHANICAL SYSTEM

Inserted by By-law No. 18603, 12/14/15

1. The water in the building mechanical system must be treated to ensure that the following minimum standards are met at all times:

Maximum 30 parts per million chloride;
Maximum 5% nitrate;
PH Level between 9.5 and 10;
Maximum 2 parts per million hardness;
Maximum 1 part per million Iron; and
Total bacteria count \leq 100 cfu/ml (colony forming units per millilitre).

2. Testing and reporting of the water quality may be required by the General Manager, Engineering.

Schedule C - Charges

Part 1 – Levy

	Levy
<u>Class 1</u> Residential and mixed-use buildings where the non-residential portion of the building does not exceed 20% of the building area.	\$0.0179 per square metre of the building area per day
<u>Class 2</u> Any building where the non-residential portion of the building exceeds 20% of the building area.	\$0.2569 per kilowatt of peak heat energy demand per day

Part 2 –Charge

Charge	\$52.96 per megawatt-hour of heat energy
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SCHEDULE D
APPLICATION AND MISCELLANEOUS FEES

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SCHEDULE E

CONNECTION COSTS

1. The connection costs in Section 8.1 shall equal \$100/kilowatt of peak heat energy demand for the cost to the City associated with the design, construction and installation of an energy transfer station and distribution system extension.
2. The connection costs set out in this Schedule E shall not apply to:
 - (a) building permits that are in-stream on the effective date and which are issuable within one year of the effective date; and
 - (b) building permits on lands with a precursor application in-stream on the effective date and where the related building permit is issuable within one year of the effective date.
3. For the purposes of this Schedule E the following definitions shall apply:

“effective date” means the date on which this Schedule E comes into force, which is established as the date of final adoption of "District Energy System By-law, 2012, No. 17667, Amending Bylaw, 2018, No. _____".

“in-stream” means, in reference to an application, not determined, rejected or withdrawn and:

- (a) in the case of an application for building permit, one for which the application form has been completed, the application fee has been paid, and all required supporting documentation including all applicable architectural, structural, plumbing, electrical, mechanical and site drainage drawings necessary to make the application complete has been submitted and accepted by the City as a legitimate application;
- (b) in the case of a rezoning application, one for which the application form has been completed, the application fees have been paid and all required supporting documentation necessary to make the application complete has been submitted and accepted by the City as a legitimate application; and
- (c) in the case of an application for development permit, one for which the application form has been completed, the application fees have been paid and all required supporting documentation necessary to make the application complete has been submitted and accepted by the City as a legitimate application.

“issuable” means, in the case of a building permit, an application which meets the requirements of an in-stream application and for which:

- (a) Council has approved any applicable rezoning and/or development permit

and/or development variance permit;

- (b) all required off-site legal encumbrances relating to engineering services have been registered at the Land Title Office on title to the subject property;
- (c) any plan, including a plan of subdivision, consolidation, or road dedication, that would affect the legal description of the subject property has been registered at the Land Title Office on title to the subject property;
- (d) all review comments arising from the building permit application review process have been addressed to the satisfaction of the City; and
- (e) all applicable fees and levies have been paid.

“precursor application” means, in relation to a building permit, that there is an:

- (a) in-stream development permit application and that the development authorized by the building permit is entirely within the area of land that is subject to the development permit application; or
- (~~a~~)(b) in-stream rezoning application and that the development authorized by the building permit is entirely within the area of land that is subject to the rezoning application.



CORPORATE REPORT

NO: R246

COUNCIL DATE: December 16, 2013

REGULAR COUNCIL

TO: Mayor & Council

DATE: December 12, 2013

FROM: General Manager, Engineering
General Manager, Finance & Technology

PROJECT FILE: 5511-104

SUBJECT: District Energy System Utility (Surrey City Energy) – Policy on Utility Rate
Setting and Regulation

RECOMMENDATION

The Engineering Department recommends that Council:

1. Receive this report as information; and
2. Approve, for use in setting the rates and the rate structure for Surrey City Energy (SCE), the policy attached to this report as Appendix B, which is titled "District Energy (DE) Rate-setting Policy" (the "Policy");
3. Authorize staff to proceed with a public Request for Expressions of Interest for the purpose of establishing the Expert External Rate-Review Panel (the "Panel") as generally described in this report; and
4. Approve the Terms of Reference that are attached to this report as Schedule 1 of Appendix B in relation to the Panel and its function.

INTENT

The purpose of this report is to obtain approval of the principles and a related methodology that are proposed as the means to regulate the rates and the rate structure that will be used by SCE, the City's City Centre District Energy utility, in relation to its business operations.

BACKGROUND

At its Regular meeting on January 24, 2011 Council adopted the recommendations of Corporate Report No. R013;2011, that authorized staff to establish a DE Utility for the purpose of designing, constructing and operating a DE system in Surrey City Centre. As part of that report, staff committed to forward further reports to Council, complete with recommendations regarding the design, financial strategy, operating strategy, tendering process, construction and other matters related to the implementation of the DE system in the City Centre area.

At its Regular meeting on May 3, 2011, Council adopted the recommendations of Corporate Report No. R069;2012, that authorized staff to establish a District Energy Utility under the brand name of Surrey City Energy(SCE) operating as a business unit within the Engineering Department.

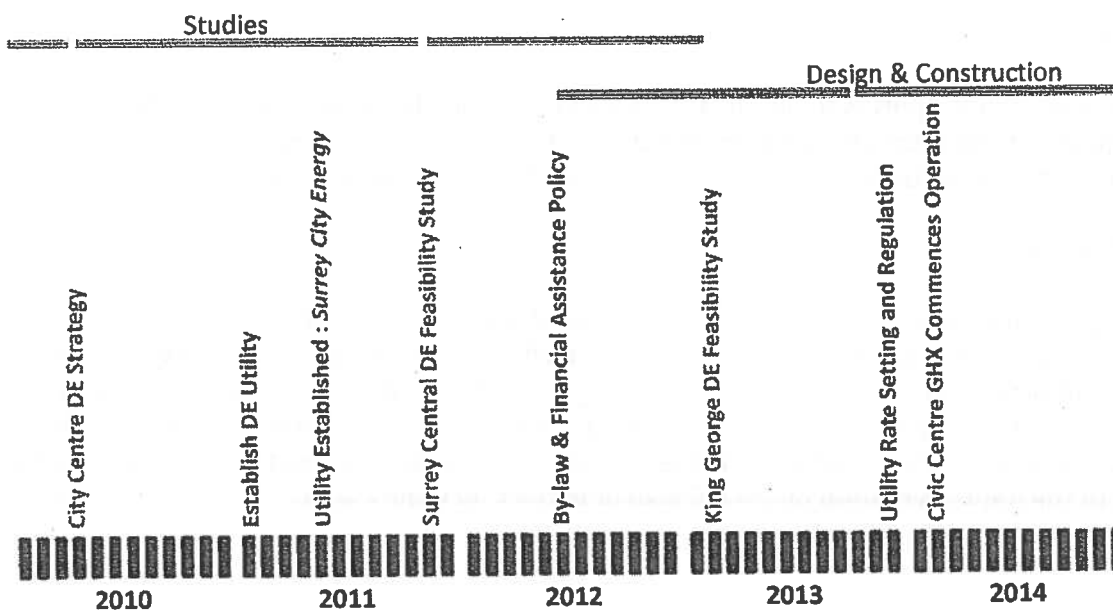
At its Regular meeting on June 7, 2012, Council adopted the recommendations of Corporate Report No. R123;2012 that resulted in the adoption of the District Energy System By-law, 2012, No. 17667. This By-law established the DE requirements for new development in each of two distinct areas within Surrey City Centre, being Service Area A and Service Area B, respectively. A copy of this report is attached this report as Appendix A.

The boundary of Service Area A encompasses those lands within the City Centre that are designated for high density development with a Floor Area Ratio (FAR) greater than 3.5. Each new development within Service Area A with a build-out FAR equal to or greater than 1.0 is required to incorporate in its design domestic hot water, make-up air units, and in-suite hydronic heating that is connectable to the DE system prior to occupancy of the development.

Service Area B primarily includes land designated for low to medium density development at an FAR less than 3.5. Each new development in Service Area B with a build-out FAR greater than 1.0 and less than 2.5 will be required to incorporate in its design domestic hot water and make-up air units that are connectable to a DE system. Each development in this area with a build FAR equal to or greater than 2.5 will be required to install a hydronic heating system in addition to domestic hot water and make-up air units in such a manner as to be fully compatible for connection to the DE system when it is available.

Staff has been working with a committee (the "Committee") comprised of representatives of the Urban Development Institute and representatives of developers who have active development applications in each Service Area within the Surrey City Centre area. The Committee is identifying and addressing concerns related to the implementation of the City's DE system in the City Centre.

The following graph is a timeline of activities that have taken place, are taking place or are planned in relation to the implementation of the DE system in City Centre.



DISCUSSION

The meetings of the Committee have been a valuable opportunity to exchange information regarding the implementation of the DE system in City Centre and to work collaboratively to address concerns. One of the primary concerns expressed by the Committee relates to how the rates and rate structure will be established and regulated. This report relates to this specific concern.

With a view to providing the development community and future customers with an understanding of how the rates will be established and charged, staff has developed a draft policy titled "District Energy Rate-Setting Policy", a copy of which is attached as Appendix B to this report. The following sections of this report discuss the substantive elements of the proposed Policy.

1. Cost Recovery

The cost-of-service model is a well-accepted accounting structure for energy utilities operating in a regulated environment. Rates charged to customers of SCE will be calculated such that all costs-of-service associated with financing, operating, and administering the delivery of thermal energy by way of SCE are fully recovered.

A 30-year financial pro-forma has been developed for the purpose of rate setting. The pro-forma projects out over a 30-year period the forecasted revenue requirements necessary to fund the costs of the system. The pro-forma will be updated on an annual basis to reflect actual conditions in each year of operation.

2. Rate Stability

Although capital intensive, DE systems allow for a variety of fuel sources to be used in the delivery of energy and offer long-term price stability that is not available to customers of single source conventional heating systems. There is expected to be much less variability in the year-to-year SCE rates in comparison to conventional systems.

In the short term, as the DE system is maturing, SCE rates will not necessarily fully cover the debt servicing and operating costs of the system; however, the rate structure will allow for the recapturing of the early years deficits while remaining competitive with the costs that customers would incur if they were using other thermal energy options that are available in the market, such as electricity and natural gas.

This rate-setting approach is commonly used by privately-owned utilities regulated by the British Columbia Utilities Commission (BCUC), including FortisBC. This approach has also been applied to the SFU UniverCity District Energy system and River District Energy located in southeast Vancouver as well as the City of Vancouver's DE utility that services Southeast False Creek. This approach ensures that the DE infrastructure financing costs are more equitably distributed between the initial customers of the system and those that connect in later years.

3. Accountability/Transparency

BCUC is a regulatory agency that was established by the Province for the purpose of administering the Utilities Commission Act (the "Act"). BCUC's mandate includes regulation of the sale of energy by BC "public utilities". Two examples of "public utilities" that are regulated by BCUC are FortisBC and BC Hydro. The Act explicitly states that a "public utility" does not include a municipality or regional district in respect of services provided by the municipality or regional district within its own boundaries.

SCE has been established as a municipally-owned utility and, as such, is exempt from the regulatory oversight of BCUC. Similar to the City's water, sewer, drainage and solid waste utilities, Council is tasked with the responsibility of regulating the sale of energy services by SCE and ensuring that the public interest is served.

While the City is exempt from the regulatory oversight of BCUC, there is merit in establishing an external rate review panel to assist Council in the oversight of SCE's rates. The City of Vancouver has established such a panel as part of the DE utility that services development in the Southeast False Creek community. The formation and operation of such a panel is discussed in more detail in the following section.

Expert External Rate-Review Panel

It is proposed that the Panel be made up of 4 members appointed by Council, with one member being appointed as the Chair. The Panel members would have expertise in the context of the Panel's responsibilities. The Panel would be tasked with providing objective, expert advice to the City regarding the rates that should be charged by SCE in relation to a set of Council-approved rate-setting principles for SCE. A draft Terms of Reference for the Panel is attached to this report as Schedule 1 of Appendix B.

4. Low-Carbon/Renewable Energy Targets

One of the fundamental benefits of a DE system lies in its ability to reduce emissions of GHG's by replacing consumption of fossil fuels with renewable, low-carbon fuel sources on a neighborhood-scale. Upfront infrastructure costs of DE systems are high and a significant customer demand is required to support the related necessary investments. The typical approach to implementing DE systems is to commence the development of the system using low-cost conventional natural gas combustion equipment until a sufficient level of customer demand has been achieved to support the large scale investment that is needed to introduce alternative renewable energy sources.

Privately-owned utilities regulated by BCUC are allowed a set rate of return on their investment equity, which is commensurate with the level of assessed risk associated with the related investment. For DE utilities in BC this is typically in the range of 9% to 10% of the equity portion of the total financing.

The SCE rate structure will seek to include a similar level of return on investment, which will allow for some reserves to be established over time for equipment replacement and unexpected occurrences. These reserves will also be used to fund low-carbon, renewable energy generation capacity. In this way, SCE will be re-investing energy expenditures into the local economy while reducing GHG emissions. The rate of return on the City's investment in the DE system will be no less than the City's cost of borrowing to finance the development of the DE system and no more than the rate of return that is established for the private utilities that are regulated by the BCUC.

5. Rate Competitiveness

The BC Hydro electricity rate for residential electricity service (i.e., based on 50% of the energy being drawn at the step 1 electricity rate and 50% at the step 2 rate) is considered to be a suitable benchmark against which SCE rates should be compared. This statement is based on the observation that most high-rise residential dwelling units not serviced by DE are generally provided with heating service by electricity. SCE's objective will be for its rates to not exceed this benchmark. To provide certainty for the utility and its initial customers it is recommended that SCE rates be set to this benchmark for the first three years of operations. This is also consistent with a number of private utilities that are regulated by BCUC which have set their initial energy rates for service based on this benchmark. It is also recommended that the Panel regularly review opportunities to continue this rate assurance.

SCE energy rates over time will likely become less than the BC Hydro benchmark, as the efficiencies of the DE system are realized. These efficiencies primarily relate to economies of scale and, in the longer term, the flexibility that DE systems have in relation to changing energy sources over time. This divergence will depend on a number of factors including, among others, the rate at which buildings connect to the DE system and the rate of increase for the BC Hydro benchmark.

While the BC Hydro rate is a suitable benchmark based on equivalence of service and customer understanding, rate comparisons will not be limited to BC Hydro. SCE rates will also be compared against the long-term capital and operating costs of natural gas as well as other lower mainland DE systems.

6. Fairness

SCE rates will be structured such that the rates charged to different types of users (i.e., residential, retail commercial, office, institutional, etc.) are fair and equitable. All customers of the utility should be subject to rates that reflect the cost of the level of service that is provided to the user type and at no point should rates charged to one user type act to subsidize the rates of another user type.

Next steps

Subject to adoption of the recommendations of this report, a Request for Expressions of Interest will be structured and advertised for the purpose of selecting suitable candidates to serve on the Panel. This REOI will be based on the attached draft Terms of Reference. Staff will undertake a process to evaluate the responses including appropriate interviews and in due course will recommend to Council individuals who are considered appropriate to appoint to the Panel. This process should be completed by the spring of 2014.

Following the appointment of the Panel, staff will present information to the Panel with a view to the Panel overseeing the establishment of the initial utility rate structure for SCE. This will ultimately result in a further report to Council on the results of the Panel's work.

Legal Services Review

This report and the proposed Policy, which is attached as Appendix B, have been reviewed by Legal Services.

SUSTAINABILITY CONSIDERATIONS


The implementation of a DE system in the City Centre supports the Economic and Environmental Pillars of the City's Sustainability Charter under the following specific action items:

- *EC8: Energy security by promoting the use of low-impact, renewable energy sources and promoting community energy solutions;*
- *EN1: Energy efficiency by incorporating alternative energy systems such as geo-exchange and solar heating systems as potential heat sources; and*
- *EN10: Integrated Community Energy Master Plans by developing an Integrated Community Energy Master Plan for the City Centre and by working with property owners to promote and increase building energy efficiency through implementation of a DE system.*


CONCLUSION

Based on the above discussion, the Engineering Department recommends that Council:

1. Approve, for use in setting the rates and the rate structure for Surrey City Energy (SCE), the policy attached to this report as Appendix B, which is titled "District Energy (DE) Rate-setting Policy" (the "Policy");
2. Authorize staff to proceed with a public Request for Expressions of Interest for the purpose of establishing the Expert External Rate-Review Panel (the "Panel") as generally described in this report; and
3. Approve the Terms of Reference that are attached to this report as Schedule 1 of Appendix B in relation to the Panel and its function.



Vivienne Wilke, CGA
General Manager,
Finance & Technology



Vincent Lalonde, P.Eng.
General Manager, Engineering

JA/JO/brb

Appendix A - Corporate Report R123;2012
Appendix B - Draft District Energy Rate Setting Policy

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Note: R246; 2013 Appendices available upon request