

NO: R229

COUNCIL DATE: November 30, 2015

REGULAR COUNCIL

TO: **Mayor & Council**

DATE: **November 19, 2015**

FROM: **General Manager, Engineering**

FILE: **5500-20**

SUBJECT: **Amendments to District Energy System Bylaw**

RECOMMENDATION

The Engineering Department recommends that Council:

1. Approve amendments to the *District Energy System By-law, 2012, No. 17667* as documented in Appendix II to this report; and
2. Authorize the City Clerk to bring forward the necessary amendment Bylaws for the required readings.

INTENT

The purpose of this report is to obtain Council approval to amend *District Energy System By-law, 2012, No. 17667* to bring it up to date.

BACKGROUND

The *District Energy System By-law, 2012, No. 17667* (the “Bylaw”) provides authority for the establishment and operation of a district energy system to supply hot water heating to new and existing buildings in City Centre.

DISCUSSION

The proposed amendments to the Bylaw can be divided into two categories: housekeeping amendments and policy-related amendments.

Housekeeping Amendments

Housekeeping amendments are minor changes to the Bylaw to address minor inconsistencies that have been identified through the administration of the Bylaw since it was introduced in 2012. The proposed housekeeping amendments are described in Appendix I and the proposed wording for each amendment is detailed in Paragraphs 1 through 5 of Appendix II.

Policy-related Amendments

Policy-related amendments are more substantive than housekeeping amendments, as they are seeking to introduce a change in policy or a change in fees. There is one policy-related amendment proposed. This amendment is summarized below:

Section 7.7 Operation of Building Mechanical System

Owners of all customer buildings of the district energy utility area are required to operate and maintain the hot water distribution system used for heating within the building on an ongoing basis. This is a closed-loop system and, as such, the water needs to be treated to avoid water quality degradation over time that could damage their infrastructure and City-owned infrastructure. The Bylaw is clear that this is the responsibility of the owner, but the minimum water quality criteria are not specified. It is proposed that the Bylaw be amended to include minimum standards for treatment of water in the building mechanical system. The proposed minimum standards for the water in the building mechanical system are described below:

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

The proposed minimum standards are included in Paragraph 6 of Appendix II.

Legal Services Review

This report and the related Bylaw amendments have been reviewed by Legal Services.

SUSTAINABILITY CONSIDERATIONS

The implementation of a district energy system in the City Centre supports the Economic and Environmental Pillars of the City's Sustainability Charter under the following specific elements of the Charter:

- EC8: Energy security;
- EN1: Energy efficiency; and
- EN10: Integrated Community Energy Master Plans.

CONCLUSION

Based on the above discussion, it is recommended that Council:

- Approve amendments to the *District Energy System By-law, 2012, No. 17667* as documented in Appendix II to this report; and

- Authorize the City Clerk to bring forward the necessary amendment Bylaws for the required readings.

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

JA/JO/clr

Appendix I - Proposed Bylaw Amendments

Appendix II - Proposed Amendments to *District Energy System By-law, 2012, No. 17667*

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Proposed Housekeeping Amendments

Proposed Change	Issue	Resolution
<p>Section 1.2 - Definitions:</p> <p>1. Add “Building Area” to the definitions.</p>	<p>Amendment needed to improve clarity.</p>	<p>Add a new definition to Section 1.2 immediately following the definition for “building” as follows:</p> <p>“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;</p>
<p>2. Add the words “measured in watt-hours” and “as shown in Schedule C, Part 2” to the definition for “charge”.</p>	<p>Amendment needed to improve clarity.</p>	<p>Revise the definition of “charge” in Section 1.2 to read:</p> <p>"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;</p>
<p>3. Revise the definition for “heat energy” to improve clarity.</p>	<p>Amendment needed to improve clarity.</p>	<p>Revise the definition of “heat energy” in Section 1.2 to read:</p> <p>"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;</p>

Proposed Change	Issue	Resolution
4. Revise the definition for “levy” to improve clarity.	Amendment needed to improve clarity.	Revise the definition of “levy” in Section 1.2 to read: “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;
5. Revise the definition for “peak heat energy demand” to improve clarity.	Amendment needed to improve clarity.	Revise the definition of “peak heat energy demand” in Section 1.2 to read: "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;

**Proposed Amendments to
District Energy System By-law, 2012, No. 17667 (the "By-law")**

That the By-law be further amended as follows:

1. By adding a new definition to Section 1.2 immediately following the definition for "building" as follows:

"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;

2. By revising the definition of "charge" in Section 1.2 to read:

"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;

3. By revising the definition of "heat energy" in Section 1.2 to read:

"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;

4. By revising the definition of "levy" in Section 1.2 to read:

"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;

5. By revising the definition of "peak heat energy demand" in Section 1.2 to read:

"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;

6. By deleting the sentence "to the extent that the City does not need to clean any heat exchanger in the energy transfer station more often than once in each calendar year" from Section 7.7 and adding the following to Schedule B:

1. The water in the building mechanical system must be treated to ensure that the following minimum standards are met at all times:
 - (g) Maximum 30 parts per million chloride;
 - (h) Maximum 5% nitrate;
 - (i) PH Level between 9,5 and 10;
 - (j) Maximum 2 parts per million hardness;
 - (k) Maximum 1 part per million Iron; and
 - (l) 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.