

NO: R069

COUNCIL DATE: May 9, 2011

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## REGULAR COUNCIL

TO: **Mayor & Council**

DATE: **May 3, 2011**

FROM: **General Manager, Engineering**

FILE: **0970-11**

SUBJECT: **Surrey District Energy System Utility – Governance and Branding**

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## RECOMMENDATION

The Engineering Department recommends that Council:

1. Receive this report as information; and
2. Authorize staff to establish a District Energy Utility under the brand name of “Surrey City Energy” operating as a business unit within the Engineering Department all as generally described in this report.

## INTENT

The purpose of this report is to seek Council approval to establish a district energy utility as a business unit of the Engineering Department, operating under the name of Surrey City Energy, that will be responsible for the implementation and operation of district energy systems within the City and to advise Council about draft principles for the governance of the utility.

## BACKGROUND

District energy systems have been used historically in the core areas of several cities in Canada but fell out of favour over time. More recently, due to an increased focus on sustainability, the efficient use of energy and GHG reduction considerations, district energy systems are experiencing resurgence. These systems have a long history in Western Europe. Approximately half of all residential dwelling units in Sweden are served by district energy systems.

District energy (DE) systems are attracting significant attention in British Columbia as a result of increasing energy prices, a stronger focus on preserving electrical energy sources for higher grade demands such as commercial and industrial uses and a strong interest in reducing green house gas emissions.

DE systems use energy from a variety of sources to create hot water for circulation to connected buildings. The energy sources can include wastewater heat recovery, heat exchange from ground water, solar heat, biomass digestion, waste to energy facilities, electricity and natural gas. The energy is used to heat water that is then distributed to customers through a dedicated pipe

network. The heated water is then used directly to heat dwellings or other spaces through heat exchangers or is transferred to the local building heating/cooling system through a heat pump.

At its Regular meeting on May 17, 2010 Council considered Corporate Report R109; 2010, a copy of which is attached as Appendix I, that noted that DE systems could help the City meet the commitments set forth in the Surrey Economic Investment Action Plan and the Surrey Sustainability Charter with respect to energy security, energy efficiency, waste reduction and economic development.

At its Regular meeting on January 24, 2011 Council considered Corporate Report R013; 2011, a copy of which is attached as Appendix II, that authorized staff to establish a District Energy Utility for the purpose of designing, constructing and operating a district energy system in the City. As part of that report, staff committed to forward further reports to Council regarding the design, financial strategy, operating strategy, tendering and construction and other matters related to the implementation of a DE system in the City Centre area.

## DISCUSSION

### Governance Model

In accordance with the recommendations of Corporate Report R013; 2011 (Appendix II), Council authorized the establishment of the DE utility as a municipally-owned entity. This report addresses the utility's operational structure. Local examples of municipally-owned DE systems include the City of Vancouver's Southeast False Creek Neighbourhood Energy Utility and the City of North Vancouver's Lonsdale Energy Corporation. The operational structure for each of these two examples is described below:

1. The City of Vancouver has established a DE utility as a business unit within the City's Engineering Department.
2. The City of North Vancouver has established a DE corporation as a wholly-owned subsidiary of the City, referred to as the Lonsdale Energy Corporation. This is a similar model to the Surrey City Development Corporation. The LEC has its own Board of Directors and management and staff organization.

The following table summarizes the operational characteristics of each model.

<b>Operational Consideration</b>	<b>Wholly-owned Subsidiary</b>	<b>Business Unit</b>
Efficiency	Synergies with other City departments are limited	Synergies with other City departments
Flexibility and Control	City has "arm's-length" relationship with utility	City retains full control over operations
Staffing Requirements	A full complement of new staff is required	Existing City staff are able to manage the utility in the beginning and add new staff as required

**Recommended Course of Action:**

With respect to the start-up phase of the City of Surrey's District Energy Utility, staff is of the view that it should be a business unit within the Engineering Department at this time for the following reasons:

- City staff is very experienced with utilities operating as business units. The water, sanitary sewer, drainage, and solid waste management utilities are examples of utilities currently operating as business units within the Engineering Department;
- The utility operating as a business unit within the Engineering Department will generate greater synergies across City Departments. These synergies may not be possible if the utility were a wholly-owned "arm's-length" subsidiary of the City; and
- Given the small scale of the utility at start-up, it is anticipated that existing staff positions supported by one or two new positions will be sufficient to oversee the utility in its inaugural stages.

**Branding of the Utility**

It will be important to establish a recognizable brand for the utility. Once the utility is established, having a recognized brand attached to the utility will aid in finding new customers and building their loyalty, enhance the City's image and increase the value of the utility to potential purchasers, should the City want to divest part of its asset in the future.

**Recommended Course of Action:**

It is recommended that the proposed district energy utility generally follow the naming convention that was established with the formation of the "Surrey City Development Corporation" and be named "Surrey City Energy". Staff will develop an appropriate logo and web presence for the utility.

**Steering Committee**

Staff has established a Steering Committee to oversee the implementation of Surrey City Energy. A supporting Advisory Committee will also be established to support the Steering Committee. These committees will meet regularly to:

- Confirm the efficacy of decisions regarding all factors related to the implementation and operation of the utility;
- review development opportunities for the utility;
- develop and evaluate solutions to external constraints (Social / Economic / Environmental) to the success of the utility;
- Develop and monitor performance benchmarks for the utility;
- Review business cases for future utility expansion;
- Develop principles for governance and rate setting for the utility; and
- Maximize internal synergies between Departments to ensure success of the utility.

The Steering Committee will be chaired by General Manager, Engineering and include the City Manager, the General Manager, Finance & Technology, the General Manager, Planning & Development and the City Solicitor,

### **Operating Principles**

It is important that a set of operating principles be established to guide decisions regarding the proposed DE utility.

Using the Sustainability Charter and its Social, Economic and Environmental Pillars as the guiding framework, staff is in the process of developing a set of governance and rate setting policies for the proposed utility. The initial drafts are listed in Appendix III and Appendix IV, respectively.

These principles once finalized will be used by the Steering Committee in the operation of the utility, establish rates, and define its scope of services. The policies will be forwarded to Council for approval once they are finalized.

### **Private Sector Opportunities**

A decision to establish the DE utility as a business unit within the Engineering Department does not preclude future private sector involvement. The City will retain the flexibility to transfer any part of the DE system to the private sector if such a future transfer is viewed as advantageous.

Staff is currently researching opportunities for private sector involvement including:

1) *Operating Contracts*

There are opportunities for the private sector to operate and maintain part or all the DE system on behalf of the utility. This is similar to the installation, monitoring, and maintenance contracts for water metering that the City has with CORIX Utilities Ltd.

2) *Thermal Energy Supply*

There are opportunities for the private sector to supply heat to the DE system. For example: private biomass plants, natural gas boilers, or waste-to-energy facilities.

3) *Deferred Servicing*

As the utility plans its distribution network there may be buildings that will be ready to connect before the utility is able to provide service to them. To address this circumstance, the private sector could provide developments with interim servicing through the provision of a temporary natural gas boiler until the district energy system reaches their frontage. Temporary boilers could be provided either as mobile units, to be relocated once the building is connected to the DES, or as permanent units that would be used as added peaking capacity and/or redundancy to the DE system.

4) *Building Distribution*

To facilitate the conversion or installation of hydronic systems in buildings, there are opportunities for the private sector to finance such installations through a (green) loan. The private sector could then recover the cost of their investment through a monthly fee collected through the energy rates.

## SUSTAINABILITY CONSIDERATIONS

The implementation of a District Energy System in the City will support the Economic and Environmental Pillars of the City's Sustainability Charter under the following specific elements of the Charter:

- 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 for City facilities; and
- EN10: Integrated Community Energy Master Plans: by developing an Integrated Community Energy Master Plan for the City Centre and by working with private property owners to promote upgrades and retrofits that increase building energy efficiency such as through the connection to a district energy system.

## CONCLUSION

Based on the above discussion, it is recommended that Council authorize staff to establish a District Energy Utility as a business unit of the Engineering Department, operating under the name of Surrey City Energy, as generally described in this report for the purpose of designing, constructing and operating a district energy system in the City.

Further reports complete with recommendations will be forwarded to Council as the process of policy development, design, tendering and construction and other matters related to the implementation of a DE system in the City evolve.

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General Manager, Engineering

VL/JA/brb

- Appendix I - Corporate Report R109; 2010
- Appendix II - Corporate Report R013; 2011
- Appendix III - Draft Surrey City Energy Governance Principles
- Appendix IV - Draft Surrey City Energy Rate Setting Principles



# CITY POLICY

No.

REFERENCE:

APPROVED BY:

CITY COUNCIL

REGULAR COUNCIL MINUTES

DATE:

HISTORY:

**TITLE: SURREY CITY ENERGY GOVERNANCE PRINCIPLES**

Surrey City Energy is a district energy utility that seeks to distribute thermal energy for heating and cooling of interior spaces and/or to provide domestic hot water to buildings in a discrete geographical district using a central heating/cooling source and a closed-loop pipe configuration with a carrier fluid to transfer heat energy between locations.

Surrey City Energy will replace individual furnaces and boilers in buildings and will attempt to achieve significant energy efficiency improvements over conventional methods of heating and cooling individual buildings. Surrey City Energy (SCE) will consider the use of a wide range of energy sources.

To maximize its attractiveness to prospective customers, SCE will seek to apply the following Governance Principles which are based on the vision provided by the Surrey Sustainability Charter:

1. In support of the Economic Pillar of the Sustainability Charter, *EC1: Corporate Economic Sustainability*, the utility will seek to ensure that it remains financially sustainable and its cost are competitive with other thermal energy options for its customers.
2. SCE, in support of the Economic Pillar of the Sustainability Charter, *EC3: Sustainable Infrastructure Management and Replacement* will seek to:
  - a. Design its infrastructure such that it is reliable and that its environmental impact and long-term maintenance costs are minimized; and
  - b. Establish financial plans and related reserves to ensure adequate long-term funding for the maintenance and replacement of its infrastructure.
3. SCE, in support of the Economic Pillar of the Sustainability Charter, *EC8: Energy Security*, will seek to:
  - a. Promote the use of low-impact, renewable energy sources;
  - b. Minimize energy requirements;
  - c. Reduce reliance on fossil fuels; and
  - d. Promote community clean energy solutions.

4. SCE, in support of the Environment Pillar of the Sustainability Charter, *EN11: Surrey's Commitment to the Climate Change Action Plan* will seek to minimize green house gas (GHG) emissions.

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# CITY POLICY

No.

REFERENCE:

APPROVED BY:

CITY COUNCIL

REGULAR COUNCIL MINUTES

DATE:

HISTORY:

**TITLE: SURREY CITY ENERGY RATE SETTING PRINCIPLES**

Surrey City Energy (SCE) is a district energy utility that seeks to distribute thermal energy for heating and cooling of interior spaces and/or to provide domestic hot water to buildings in a discrete geographical district using a central heating/cooling source and a closed-loop pipe configuration with a carrier fluid to transfer heat energy between locations.

Surrey City Energy will replace individual furnaces and boilers in buildings and will attempt to achieve significant energy efficiency improvements over conventional methods of heating and cooling individual buildings. Surrey City Energy (SCE) will consider the use of a wide range of energy sources.

To maximize its attractiveness to prospective customers, SCE will seek to apply the following Rate Setting Principles which are based on Surrey City Energy's Governance Principles:

1. SCE will establish energy rates by by-law, which will be reviewed at a minimum on an annual basis.
2. SCE will establish energy rates that provide for full cost recovery of capital, operating, maintenance and management costs based on interest rates that are current at the time that capital investments are made.
3. The annual operating budget for SCE shall include, but will not be limited to, the following:
  - a. All operating costs, including staff time and administrative materials;
  - b. All debt servicing costs;
  - c. All necessary taxes;
  - d. A contribution to a reserve fund to ensure adequate long-term funding for the maintenance and replacement of its infrastructure;
  - e. A contribution to a rate stabilization fund to ensure that the utility will be financially affordable for its customers; and
  - f. Any other cost considered reasonable by the Surrey City Energy's Steering Committee and approved by Council.
4. SCE will establish rates that equitably apportion costs to the customers it serves.

This policy is subject to any specific provisions of the Local Government Act, or other relevant legislation or Union agreement.