

Report to Council



Date: 9/28/2015
File: 1825-03
To: City Manager
From: Energy Specialist, Building Services
Subject: Rutland Arena Heat Recovery Project

Recommendation:

THAT Council receives, for information, the report from the Energy Specialist Building Services, dated September 28, 2015, with respect to the proposed FortisBC - Capital Service Agreement and Community Energy Leadership Program - Funding Agreement.

AND THAT Council authorizes the Manager of Building Services to execute the FortisBC Capital Services and Community Energy leadership Program funding agreements regarding capital incentive funding for the Rutland Arena Heat Recovery Project.

Purpose:

To advise Council on the elements of the proposed capital funding agreements from FortisBC (attachment 1) and the Community Energy Leadership Program (attachment 2), the benefits for the City to implement all the Energy Conservation Measures and update the status of the Rutland Arena Heat Recovery project. The additional funding provided by FortisBC and CELP will support the scope increase, without increasing the City's financial contribution.

Background:

In 2014, Council approved \$100,000 in funding for a Domestic Hot Water Heat Recovery project for Rutland Twin Arenas. The project was estimated to save \$16,000 in operational cost through reduced energy consumption of 1,320 GJ annually and pay for itself in 6 years. Since that time, FortisBC approached the City of Kelowna suggesting that the Rutland Twin Arenas may be an ideal place for significant energy savings as part of their Commercial Custom Design Program. The program included funding for an energy study to identify Energy Conservation Measures (ECM's), as well as incentives towards the implementation of those measures. A comprehensive Energy Study was conducted by SES consulting to evaluate the potential for energy savings throughout the facility. The study was then passed along to FortisBC for review and analysis. The report outlined 4 ECM's that have a simple payback of 6 years. The equipment upgrades are expected to have a service life of 20 - 25 years.

FortisBC Capital Incentive Funding

FortisBC has approved funding for all of the measures proposed in the Energy Study, which include:

1. ECM 1 - Replacement of the existing boiler that provides hot water for the zamboni with a new high efficiency condensing boiler,
2. ECM 2 - Optimization of the controls for the roof top units (RTU's) that provide heating and cooling to the dressing rooms and offices,
3. ECM 3 - Replacement of the existing dehumidification system with a low temperature, high efficiency system, that can utilize recovered heat from the ice plant, and,
4. ECM 4 - Ice plant heat recovery.

Fortis has agreed, upon successful implementation of each measure, to provide funding up to \$106,849. The funding for each measure is as follows:

1. ECM 1 - Condensing Boiler - \$5,619
2. ECM 2 - RTU Optimization - \$15,581
3. ECM 3 - Dehumidification System - \$48,463
4. ECM 4 - Ice Plant Heat Recovery - \$37,186

In parallel to the FortisBC Custom Design Program, the City responded to a call for Expressions of Interest from the BC Ministry of Energy and Mines for Energy Efficiency projects. The Community Energy Leadership Program (CELP) is a component of the Ministry of Energy and Mines Innovative Clean Energy (ICE) Fund, designed to support local government's energy, economic, environmental and greenhouse gas reduction priorities and advance British Columbia's clean energy sector.

The Domestic Hot Water recovery project for Rutland Twin Arenas was identified as the best fit corporately for this funding opportunity based on the application criteria and project timelines detailed in the submission requirements.

Ninety Four (94) expressions of Interest were received by the Ministry of Energy and Mines. Fifty Three (53) were invited to submit formal applications for review. The City's application was shortlisted for a detailed review and was ultimately successful being awarded funding of \$45,000 for the heat recovery project.

Benefits for Kelowna:

Successful implementation of all of the Energy Conservation Measures (ECM's) will significantly reduce operating costs for the Rutland Twin Arenas, reduce the carbon footprint for the City of Kelowna, and extend the useful life of this facility. Annual savings are estimated to be \$49,000, with associated energy savings of approximately 3,900 GJ, which is 27% of the current annual energy consumption for this facility. This will reduce the City of Kelowna's carbon footprint by 204 tonnes CO₂e (carbon dioxide equivalent) per year.

City Obligations:

To secure the available funding provided by the CELP and FortisBC, The City will need to increase the scope of the Domestic Hot Water Heat Recovery project to include the installation of the condensing boiler and RTU optimization controls, as well as the design portion for the future replacement of the dehumidification system using heat recovery. The additional funding provided by Fortis and CELP will support the scope increase, without increasing the City's financial contribution

Financial/Budgetary Considerations:

The addition of the dehumidification system replacement will require additional funding, and has been submitted for approval in the 2016 budget.

Internal Circulation:

Divisional Director, Civic Operations
Director, Financial Services
Manager, Building Services

Considerations not applicable to this report:

Existing Policy:

Legal/Statutory Authority:

Legal/Statutory Procedural Requirements:

Personnel Implications:

External Agency/Public Comments:

Communications Comments:

Alternate Recommendation:

Submitted by:

B. Tollefson, Energy Specialist, Building Services

Approved for inclusion:



J. Creron, Divisional Director, Civic Operations

Attachments:

- Attachment 1: FortisBC - Capital Incentive Letter
- Attachment 2: Community Energy Leadership Program - Contribution Agreement

cc: Divisional Director, Civic Operations
Director, Financial Services