

Meeting Date: April 4, 2023

Subject: 2023 Energy Revolving Fund Projects

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## **RECOMMENDATION**

That a new 2023 capital project for the CCRW LED Retrofit be created in the amount of \$65,525 funded from the Corporate Energy Reserve.

## **REPORT HIGHLIGHTS**

- In 2015, Council approved the establishment of a Corporate Energy Revolving Fund (CER Fund) to support projects that reduce the Town's energy usage and associated greenhouse gas (GHG) emissions.
- The CER Fund is self-sustaining, which means that any funds taken from it to pay for energy retrofit projects and initiatives at Town facilities are repaid with revenue from solar energy production, incentives received as a result of energy saving projects, and a portion of the annual, realized energy savings that resulted from funded projects.
- Annually, the Corporate Energy Team, made up of staff from Energy and Environment, Community and Corporate Facilities and the Project Management Office, provides recommendations to Council on opportunities to invest this fund on projects within Town facilities that would achieve further savings.
- Since 2015, the CER Fund has supported 17 energy retrofit projects saves over 915,000 equivalent kilowatt hours of energy and avoided energy costs of \$91,000 annually in Town buildings.
- The Corporate Energy Team is recommending the release of \$65,525 from the CER Fund (held by the Town as the Corporate Energy Reserve) to support a LED retrofit project at the Caledon Centre for Recreation and Wellness that would result in an estimated \$11,929 in annual energy cost savings and a simple payback of 5.49 years.

## **DISCUSSION**

Council approved the establishment of the Corporate Energy Revolving (CER) Fund in 2015 to implement energy retrofit projects in Town-owned facilities. The CER Fund reinvests funds from energy generation projects as well as part of the savings from energy saving projects to fund further projects that reduce operating costs and improve maintenance of Town facilities. It also means that the Town can meet its energy targets required under the Provincial Electricity Act without requiring further tax funding.

The Provincial Electricity Act requires public sector agencies to submit annual facility energy consumption and greenhouse gas (GHG) emissions data every year; and to have an updated five-year Energy Conservation and Demand Management Plan (ECDM) that outlines the goals, objectives and specific actions that the public agency will undertake to manage and reduce energy consumption and demand. The Town's Corporate Greenhouse Gas Reduction Framework serves as the Town's ECDM Plan with the objective of reducing the Town's corporate GHG emissions by 24% below 2017 levels by 2024, a goal that also contributes to the Resilient Caledon target of reaching net zero emissions by 2050.

Since 2015, the CER Fund has resulted in the implementation of 17 energy retrofit projects, that saves over 915,000 equivalent kilowatt hours (ekWh) of energy every year and avoid annual energy costs of \$91,000 in Town buildings. Previous CER Fund projects include LED lighting retrofits, efficiency improvements to ice rink controls and operations, and pool water heating saving projects.

#### CER Fund Model

The CER Fund is supported by three Town-owned ground-mounted solar microFIT projects that generates approximately \$25,000 in revenue annually; energy incentives received from programs such as the Save On Energy program (through the Independent Electricity Systems Operator) and the Enbridge Gas incentive programs for corporate energy saving projects; and 100% of annual energy operating savings from CER funded projects until the cost of the project has been recovered, then 25% subsequently.

A project funded through the CER Fund must meet the following criteria:

- Projects must save energy and money;
- Projects must be completed in the same calendar year of awarded funds;
- Projects must have a simple payback (i.e. does not include impacts of inflation, increase in cost of fuel etc.) of 10 years or less; and,
- Projects must support the Town's Corporate GHG Reduction Framework.

The CER Fund is managed through the internal Corporate Energy Team, comprised of staff from Energy and Environment, Community and Corporate Facilities and the Project Management Office. The Team is responsible for recognizing opportunities to achieve energy savings and embedding overall strategic energy management practices into Town operations to achieve the Town's corporate energy targets.

#### 2023 Proposed CER Fund Project

Staff recommend converting 280 light fixtures at the Caledon Centre for Recreation and Wellness (CCRW), the Town's highest energy consuming facility in 2022, to LEDs. Compared to fluorescent bulbs that are currently installed, LED lights are up to 80% more efficient. Unlike fluorescent lights, LED lights convert 95% of their energy into light and

only 5% is wasted as heat. LEDs also have a longer life meaning less need for replacement by Facilities staff.

As described in Table 1, it is estimated that this project will save 82,265 kWh of energy, \$11,929 annually in utility costs, and result in 2.3 tonnes of annual avoided carbon dioxide equivalent (CO<sub>2</sub>e). This is comparable to reducing gasoline consumption by 980 liters annually.

**Table 1: 2023 Recommended Energy Revolving Fund Projects and CER Fund Repayment**

Site & Project	Recommended 2023 Fund Disbursement with non-recoverable HST	Estimated Annual Electricity Savings (kWh)	Estimated Annual GHG Savings (tCO <sub>2</sub> e)	Annual Energy Cost Savings & CER Fund Repayments	Simple Payback (years)
CCRW LED Retrofit	\$65,525	82,265	2.3	\$11,929	5.49

#### Update on 2022 approved CER Fund Projects

Staff Report 2022-0136 approved the release of \$53,845 to install drain water heat recovery (DWHR) systems to save energy from the pools at the Mayfield Recreation Complex and CCRW. Due to unforeseen circumstances, the sole supplier of a packaged DWHR system cancelled their contract with the Town resulting in delays and change of approach to completing the project.

Staff are able to continue with implementation of this project at CCRW, by working with contractors that can separately design, build and install a DWHR system (rather than a packaged system). The design is currently underway and installation is forecasted to be completed by Q3 of this year. Staff will continue to proceed with a measurement and verification study to verify the actual energy savings. An update to the CER Fund repayment terms will be provided in the next annual CER Fund Staff Report after the savings have been verified.

## **FINANCIAL IMPLICATIONS**

Funded by the Corporate Energy Reserve (CER Fund, #08-00-900-35012-000-25000), Staff recommend that a new 2023 capital project in the amount of \$65,525 be established for the LED retrofit at CCRW.

It is anticipated that the proposed LED retrofit at CCRW will be completed in 2023 if approved. The projected annual energy savings will be reduced from the utility budget line and will be shown as a contribution to the Corporate Energy Reserve in 2024.

After the capital cost of the project is repaid in full to the CER Fund reserve, 75% of utility savings will be used to reduce future operating budget, and 25% will continue as a

contribution to the CER to sustain the fund and enable the Town to invest in future energy saving projects.

**Table 2: Energy Reserve Repayment Terms**

Site & Project	GL Accounts of Projected Utility Savings	Recommended 2023 Fund Disbursement	Annual Energy Cost Savings & CER Fund Repayments	Fund Repayment Terms in years (Simple Payback)
CCRW LED Retrofit	01-08-465-73020-420-62216	\$65,525	\$11,929	5.49

**2022 CER Fund Adjustments**

Financial adjustments are required for 2022 CER Fund approved projects as described in this Staff Report. The DWHR project will not be proceeding at the Mayfield Recreation Complex (MRC) and it is recommended that the CER repayment terms are cancelled. An expenditure of \$4,987 was incurred prior to the project contract being cancelled and will be funded from the CER as previously approved, although it will not result in any energy savings.

Additionally, there are increased project costs required for the design, build and installation of a DWHR system at CCRW (\$17,328). Overall operating costs and energy savings will still be found. A monitoring and verification study will be undertaken to confirm the anticipated annual energy savings, and the repayment terms for this project will be updated once that information is available.

**Table 3: 2022 CER Fund Adjustments**

Site & Project	GL Accounts of Projected Utility Savings	Approved 2022 Fund Disbursement	Adjusted Disbursement	Impact on CER Fund	Adjusted Annual Energy Cost Savings & CER Fund Repayments	Adjusted Fund Repayment Terms in years (Simple Payback)
MRC DWHR (Natural Gas)	01-08-465-73020-460-62215	\$30,984	\$4,987	+ \$25,997	N/A	N/A
MRC DWHR (Water)	01-08-465-73020-460-62217				N/A	
CCRW DWHR (Natural Gas)	01-08-465-73020-420-62215	\$22,861	\$40,189	- \$17,328	\$1,599	6.6
CCRW DWHR (Water)	01-08-465-73020-420-62217				\$4,410	
Total:	N/A	\$53,845	\$45,176	+ \$8,669	N/A	N/A

The adjustments linked to the 2022 DWHR project, as described in Table 3, will result in a return of **\$8,669** to the CER Fund.

The current uncommitted balance in the Corporate Energy Reserve is \$149,612. With the 2023 disbursement and adjustments from 2022 projects from the CER Fund, the new balance will be **\$92,756** (\$149,612 + \$8,669 - \$65,525).

CER Fund Initial Balance \$149,612	+	2022 Adjustments \$8,669	-	2023 LED Project at CCRW \$65,525	=	<b>CER Fund New Balance \$92,756</b>
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### **COUNCIL WORK PLAN**

Connected Community – Develop a five-year Corporate Greenhouse Gas Reduction Framework including energy consumption in facilities, corporate fleet and fuel use, water conservation strategies in facilities and parks and waste diversion strategies.

### **ATTACHMENTS**

None.