



# Staff Report to Council - for Information

**Title:** EcoSystems Energy Savings and Performance Verification Report  
- Year 3

**From:** Edward Henley, Director of Corporate Services

**Date:** December 7, 2023

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## Report Purpose:

This report is for information.

## Report Summary:

This report provides a summary of reporting for the Energy Savings and Performance Verification that EcoSystems Energy Services Inc. was under contract to provide for 3 years.

## Background:

In 2016, EcoSystems Energy Services Inc. (EcoSystems) was awarded the Request for Proposal to provide integrated energy performance contracting services to the County of Bruce.

Part of the project approval was for EcoSystems to monitor the project to ensure that performance guarantees were met for 3 years after completion. The 1st year of the Monitor and Verification (M & V) period was April 1, 2019 - March 31, 2020, 2nd year April 1, 2020 - March 31, 2021, 3rd year April 1, 2021 - March 31, 2022. There was a delay in final reporting due to a correction to energy consumption and payment through Enbridge which took months to receive.

A Reference Year was established in order to determine savings for the preliminary design. The Reference Year was determined by examining five parameters:

- Energy consumption
- Utility rates
- Operational conditions
- Influence of temperature on energy consumption
- Duration Energy savings will be initially forecasted then tracked using the five parameters above.

EcoSystems guaranteed savings of \$240,670 annually for the first 3 years.

The following chart indicates Year 1, 2 & 3 (M & V) results which indicates a payout to the County of \$6,900 plus tax for obtaining 97% of target in year 3.

Year	Guaranteed Projected Savings (\$)	Savings (\$)	% Met	Difference (\$)
Year 1	240,670	231,565	96	-9,105
Year 2	240,670	227,117	94	-13,553
Year 3	240,670	233,770	97	-6,900

The Energy Savings and Performance Verification Report Yr. 3 attachment identifies performance in detail for each of the (4) four buildings involved in the project:

- Inland Hub
- Bruce County Museum and Cultural Centre
- Gateway Haven
- Brucelea Haven

Comments from EcoSystem's Frederick Leonard, P.Eng., Knowledge Sharing Manager, regarding project conclusion:

## **BRUCE COUNTY ENERGY PERFORMANCE CONTRACT PROJECT SUMMARY**

### **OVERVIEW**

"In 2015, Bruce County initiated a project aimed at reducing energy and water consumption, upgrading capital energy-related equipment, improving building operations and maintenance, saving costs, and enhancing the staff and stakeholder environment through upgrading of the physical infrastructure of the County facilities.

The project was financed through an energy performance contract that aimed to achieve significant long-term cost savings, maintain consistent and reasonable levels of occupant comfort and building functionality, and capture additional benefits that may directly result from energy-related services and capital improvements.

### **RESOURCE CONSERVATION MEASURES**

The project implemented several resource conservation measures (RCMs) including controls upgrades and optimization, heating network optimization, replacement of water source heat pumps, LED lighting retrofit, humidification retrofit, low-flow water fixtures, chiller replacement, and an electric vehicle charging station.

## **SAVINGS**

The measures implemented through the project helped save over \$690,000 in utility costs during the first three years of Performance monitoring. Part of the cost to implement the project was also offset by avoided asset renewal and financial incentives through various programs, which represent hundreds of thousands of dollars.

## **ENERGY CONSUMPTION**

The project resulted in significant reductions in energy and water consumption over a three-year period:

- Electricity: Saved 3,785,561 kWh (28% reduction)
- Natural Gas: Saved 496,483 m<sup>3</sup> (25% reduction)
- Water: Saved 906 m<sup>3</sup> (8% reduction)
- Total Energy: Saved 32,440 GJ (26% reduction)
- CO<sub>2</sub>: Reduced by 952 tons (25% reduction)

## **CONCLUSION**

The project successfully achieved its goals of reducing energy and water consumption, upgrading capital energy-related equipment, improving building operations and maintenance, saving costs, and enhancing the staff and stakeholder environment. By undertaking such a deep energy retrofit, Bruce County has demonstrated its commitment as a corporate citizen towards the decarbonization necessary to tackle climate change. The reduction in energy consumption not only leads to cost savings but also contributes to a decrease in greenhouse gas emissions. This aligns with global efforts to mitigate the impacts of climate change and promotes sustainable practices within the community.

Indeed, while the results achieved by Bruce County are significant, the journey towards energy efficiency and sustainability is ongoing. It's crucial to continue monitoring resource consumption to address any drift in performance, which can arise from additional loads added to the building, evolving usage and needs, and staff rotation. This continuous effort will ensure that the county maintains its commitment to environmental stewardship and remains at the forefront of sustainable practices”.

## **Financial/Staffing/Legal/IT Considerations:**

The project was financed with a 10-year debenture at a cost of \$250,000 per year. The debenture was used to purchase and install new equipment. The equipment is expected to have a life span longer than 10 years and the efficiencies and savings should continue after the loan is paid off.

There are no financial, staffing, legal or IT considerations associated with this report.

**Interdepartmental Consultation:**

The (M & V) report Year 3 was shared with Senior Management Team.

**Link to Strategic Goals and Objectives:**

Environment and Climate Change - Build capacity to adapt to and mitigate the impacts of climate change

**Link to Departmental Plan Goals and Objectives, if any:**

None

**Report Author:**

Jennifer Smith, Purchasing Manager

**Departmental Approval:**

Edward Henley, Director of Corporate Services

**Approved for Submission:**

Derrick Thomson, Chief Administrative Officer