

The Corporation of the City of Kawartha Lakes
Council Report

Report Number WM2017-004

Date: September 26, 2017
Time: 2:00 p.m.
Place: Council Chambers

Ward Community Identifier: All

Subject: Landfill Gas Generator Status

Author Name and Title: Heather Dzurko, Supervisor, Waste Management Operations

Recommendation(s):

RESOLVED THAT Report WM2017-004, **Landfill Gas Generator Status**, be received;

THAT the Waste Management and Water and Wastewater Divisions of Public Works equally share the operating costs for the landfill gas generator;

THAT savings in hydro be used to offset hydro costs within the Water and Wastewater user budget;

THAT future capital works for the generator and its appurtenances be budgeted for within the tax levy capital program.

Department Head: _____

Financial/Legal/HR/Other: _____

Chief Administrative Officer: _____

Background:

At the Council Meeting of August 14, 2014, Council adopted the following resolution:

RESOLVED THAT Report WM2012-008, "*Lindsay Ops Landfill Gas Electricity Generation Project Update*", be received, and that upon condition of the Ministry of the Environment extending the deadline for funding for the *Electricity Generation Project* at Lindsay Ops Landfill to August 31, 2013;

THAT the City of Kawartha Lakes purchase an electrical generator from Glenridge Gas Utilization Inc. (GGUI) for the said price of \$350,000.00 or less, with terms of sale to be negotiated between the Director of Public Works, the Manager of Purchasing and GGUI;

THAT upon successful negotiation for the electrical generator, the Clerk and the Mayor be authorized to execute an agreement for the purchase with GGUI;

THAT when the electrical generator has been purchased, a Request for Tender be issued for the supply and installation of the associated infrastructure to the generator;

THAT staff investigate the applicability of the Hydro Feed In Tariff program versus the Net Metering Program versus the Load Displacement Program and implement the program most economically beneficial to the City; and

THAT Council approve a new Capital project for the scope of work known as the Phase II component of this project, being the generator and associated costs.

CR2012-904

Following this report to Council the Waste Management Division was able to receive required extensions to the MOE funding and steps were taken to execute the landfill gas phase II project. Several additional updates were provided to Council during execution of the capital project including reports on the following dates: September 10, 2013, October 22, 2013, August 12, 2014 and May 12, 2015.

The generator was commissioned in October 2015 and has been in operation since that time. This report is to provide an update on the landfill gas generator project and associated budget.

Rationale:

The landfill gas generator operated consistently over the 2016 period offsetting 72% of the total KWH used at the Lindsay Water Pollution Control Plant (WPCP) and landfill site. Additionally, in 2016 the facility was responsible for a reduction in methane emissions of 6834 tonnes in equivalent CO₂ and a significant reduction in reliance on other forms of electricity production. This is a positive initiative that Council and staff can be proud of as it is offsetting much of the power we use at these facilities with green energy.

Throughout the 2016 and 2017 operating year Waste Management (WM) and Water/Wastewater (WWW) have been working together to determine the appropriate method for financial management of the project. Electricity production and usage as well as expected savings have been assessed by staff. Through this process it was determined that the overall system is experiencing higher than expected costs from Hydro One. Although the City is able to offset 72% of the hydro usage, there are still periods when the generator is not running and the facilities demand peak KWHs from the grid. The billing for delivery, which forms about 1/3 of the hydro bill, is based on the peak demand and is still the same as it was prior to the implementation of the landfill gas generator. When comparing the total hydro cost in 2014 of \$363,330 to the hydro cost of \$187,318 in 2016 we are seeing a savings of \$176,012. This savings also does not include any adjustments for increase in the cost of hydro. However, we are not experiencing the savings that were originally anticipated due to the peak billing.

Both divisions continue to work on ways to improve operations and reduce peak demand to minimize hydro costs. Recently, the City met with Hydro One, Comcor and OCWA to review existing operations and ways to improve the situation and reduce our peak demand. Staff is continuing to work on solutions following this meeting. Several grant opportunities were presented at the meeting including incentives to monitor hydro usage from various pieces of equipment as well as incentives to replace existing infrastructure to more current models with more energy efficiency.

An initiative that will assist with the landfill gas generator performance is the installation of additional gas extraction wells. This work is part of the requirement for landfill gas management approved by the Ministry of Environment and Climate Change and is part of the capital budget plan for 2018. This will increase methane availability and reliability as methane concentrations occasionally decline to a point where the generator must be shut down so concentrations can be restored to a level that can run the generator.

After discussions between Corporate Services-Finance, WWW and WM it has been determined that the best way to move forward for budgetary planning is to equally share the operating costs of the generator between WWW and WM. The cost benefit of the hydro created by the generator is proposed to offset hydro costs at water wastewater and waste management facilities.

Financial/Operation Impacts:

It is recommended that WWW and WM equally share the operating costs for the landfill gas generator. Currently the waste management budget has been covering the whole costs of the landfill gas generator operation.

The total operating costs for 2017 are expected to be \$139,700 so each division would budget \$69,850 for generator operations in 2018. The annual cost will continue to be split equally in subsequent years beyond 2018.

The savings seen in hydro costs at the WPCP plant in 2016 from 2014 are \$176,012 and provide justification for continuing to operate the generator. As mentioned, Staff are working to eliminate the cost impact of peak usage at the Lindsay WPCP and improve on generation capability to further improve on this revenue from the generator.

The WM division will not include revenue from the WPCP in the 2018 budget for the landfill gas generator project.

There is no immediate need for capital works to the generator. As this is infrastructure purchased with tax based funding, it was determined that any future capital works would be allocated from tax levy. This infrastructure is already included in the corporate asset management plan.

Relationship of Recommendation(s) To the 2016-2019 Strategic Plan:

This report is primarily to deal with administrative matters of budgeting for the landfill gas generator project. However the landfill gas generator project in general is in line with the Healthy Environment section of the Strategic Plan as it results in reduction in significant greenhouse gas emissions in our community.

Consultations:

Supervisor, Water & Wastewater Operations
Manager, Environmental Services
Corporate Services- Treasurer

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Department Head: Bryan Robinson