

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON DECEMBER 17, 2012
FROM:	JAY STANFORD, M.A; M.P.A. DIRECTOR, ENVIRONMENTAL PROGRAMS & SOLID WASTE
SUBJECT:	UPDATE ON LANDFILL GAS UTILIZATION

RECOMMENDATION

That on the recommendation of the Director – Environmental Programs & Solid Waste, the following actions **BE TAKEN** with respect to W12A Landfill gas utilization:

- (a) the Civic Administration **BE DIRECTED** to terminate the Request for Expressions of Interest (REOI) process to identify a partner to develop landfill gas and potentially other biogas feedstock utilization projects at the W12A Landfill Site; it being noted that the Ontario Energy Board did not approve the price premium for Renewable Natural Gas that was being sought by Union Gas and Enbridge and was important to the financial feasibility of the project; and
- (b) the Civic Administration **BE AUTHORIZED** to prepare options and an updated business case for the development of a landfill gas power plant to produce electricity at the W12A landfill including clearly defined roles for optimizing private sector investment and operations, the role for a community energy co-op or aboriginal participation, all other related matters as required by the Ontario Power Authority, the funding allotted from HELP Clean Water from the federal and provincial governments, and report back in March 2013.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

Relevant reports that can be found at www.london.ca include:

- Request for Expressions of Interest for Partnership in Biogas Utilization , September 27, 2011 meeting of the Community and Neighbourhoods Committee (CNC), Agenda Item # 11
- Feed-In-Tariff Contract with the Ontario Power Authority for W12A Landfill Gas Power Plant, June 7, 2010 meeting of the Environment and Transportation Committee (ETC), Agenda Item #22
- HELP Clean Water - Revised Priority List, October 27, 2008 meeting of the ETC, Agenda Item #3

BACKGROUND

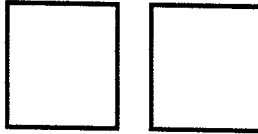
PURPOSE:

The purpose of this report is to provide an update on:

- the outcome of the Request for Expressions of Interest for Biogas Utilization,
- the outcome of the Ontario Energy Board’s review of the joint Union Gas – Enbridge proposal for Renewable Natural Gas, and
- the renewed opportunity for green power generation through the Feed-In-Tariff (FIT) program.

CONTEXT:

The landfill gas currently collected and flared at the W12A landfill site represents a significant potential source of green energy for London. If utilized, it would be one of the larger green energy projects in London, capable of producing over 400 cubic feet per minute of Renewable Natural Gas (RGN) or two megawatts of electricity on a 24 hours a day, seven days a week basis. Development of this potential has been hindered by outside factors, such as electricity transmission constraints in southwestern Ontario, as well as provincial energy policy and program decisions.

**DISCUSSION:****Request for Expressions of Interest for Biogas Utilization**

In 2011, Union Gas and Enbridge Gas Distribution submitted a joint proposal to the Ontario Energy Board that, if accepted, would have included a significant price premium for producing RNG at an average price close to three times the current market rate.

In November 2011, the City of London released a Request for Expressions of Interest (REOI) for a partner to develop biogas utilization projects(s) with the City of London using feedstocks under City control (e.g., landfill gas, sewage sludge, source separated organics, etc.) or partner's control. Creating RNG from landfill gas generated at the City's W12A landfill was believed to be the most viable of the potential biogas projects. Using current landfill gas collection rates, the W12A Landfill we would produce around 150,000 GJ per year (400 cubic feet per minute) and get an average price close to \$13 per GJ or 3 times the current market rate. This would generate approximately \$2 million annually.

The City received Expressions of Interest (EOIs) from six energy developers: Integrated Waste Management, TerraVox (Ascent), Maple Reinders, Alpenglow, Miller Waste Management Systems and Waste Management. During the months of April and May 2012, City staff met with representatives from five of the EOI respondents to seek additional information on the EOIs submitted.

All five of these EOI respondents discussed concepts for upgrading landfill gas to pipeline-quality RNG, and felt that this was technologically-feasible with existing technology. However, all of the EOI respondents mentioned that landfill gas upgrading does require diligent control to minimize oxygen levels in the captured landfill gas. This means that the landfill gas collection system cannot draw as aggressively as it can when flaring the gas for odour control or when burning for electrical power generation. As a result, there could be potential risk of increasing odour complaints when drawing for RNG. This has potential to conflict with landfill operations and odour control investment to date.

Outcome from Ontario Energy Board's Review of Renewable Natural Gas Proposal

The Ontario Energy Board (OEB) conditionally rejected the RNG proposal, saying that additional work needed to be done by the natural gas utilities to study the impact of the proposed program on Ontario consumers.

Based on conversations with Union Gas, it is unlikely that the natural gas utilities will attempt another submission to the OEB, due to the level of effort required.

Other Landfill Gas Utilization Options

Union Gas has offered to assist the City of London find a willing customer for RNG. However, the price that the customer would be willing to pay would need to be negotiated.

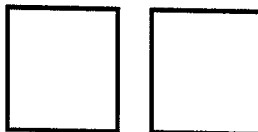
A number of EOI respondents raised the option of using RNG to fuel heavy-duty fleet vehicles such as waste collection trucks - an attractive option given the high cost of diesel fuel and low cost of natural gas, but one with significant upfront capital cost and the same potential risk of increasing odours when drawing landfill gas to produce RNG.

Outcome from the Province's Review of the Feed-In Tariff Program

In 2010, the City had been pursuing a Feed-In Tariff (FIT) Application for a 2.4 megawatt (MW) landfill gas power plant at the W12A landfill until the Ontario Power Authority (OPA) informed us that our application had failed their Transmission Availability Test. According to the OPA, there was no transmission capacity at the Wonderland Transformer Station, the transformer station that the landfill must connect to. As well, region-wide, there was limited transmission capacity on the power grid in the "West of London" area of the grid, and the W12A landfill power generation project was low on the provincial "first-come, first-serve" list of projects to connect to grid.

However, as part of the province's recent review of the Feed-In Tariff Program, there are two new developments that provided renewed potential for the City of London to participate in this program for the W12A landfill:

- changes to the Prioritization of Projects, and
- revised transmission capacity at the Wonderland Transformer Station and in the West of London Area



Changes to Prioritization of Projects

As part of the province of Ontario's review of the FIT Program, the Ministry of Energy has made changes to the program that would replace the old "first-come, first-serve" priority list with a new, ten-point system outlined below:

FIGURE 6.1: PRIORITY POINTS TABLE

PROJECT TYPE	PRIORITY POINTS
Community Participation Project	3
Aboriginal Participation Project	3
Education or Health Participation Project	2
NON-PROJECT TYPE	PRIORITY POINTS
Municipal Council Support	2
Aboriginal Support	2
Project Readiness	1
Pre-Existing Application Time Stamp is on or prior to July 4, 2011	1
Pre-Existing Application Time Stamp is on or after July 5, 2011	0.5
Education or Health Host	2
System Benefit	1

NOTE: Priority Points awarded by Project Type may not be combined with other Priority Points awarded by Project Type. Only certain Priority Points awarded by Non-Project Type may be combined with other Priority Points awarded by Project Type and/or other Non-Project Type.

Source: Ontario Power Authority FIT Rules 2.0 August 1, 2012

This proposed ranking system does provide landfill gas power projects with a one-point advantage over wind and solar projects. As it stands today, a proposed landfill gas power plant at W12A would have five points:

- two for municipal council support,
- one for project readiness (we own the land),
- one point for the time stamp (application prior to July 4, 2011), and
- one point for system benefit (being bioenergy).

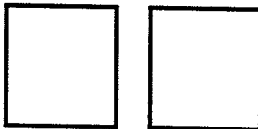
Projects with community/aboriginal equity and/or located at schools and hospitals will receive a significant boost under this new project ranking system. In addition, projects with a majority financial benefit held by community cooperative or aboriginal equity gain access to a "set aside" amount of the remaining grid capacity.

The application window for Small FIT projects (under 500 kilowatts in capacity) will open on December 14, 2012. The application window for larger projects, such as the proposed W12A power plant, is expected sometime in 2013.

Transmission Capacity at the Wonderland Transformer Station and West of London Area

As part of this FIT Program review, the Ontario Power Authority (OPA) released updated information on transmission availability which now indicates that there is limited amount of transmission capacity at the Wonderland Transformer Station.

According to London Hydro, taking into account the short-circuit capacity factors for generators, there is currently enough capacity for a 2.4 megawatt (MW) power plant, assuming no other proponents are in front of us in the priority list for this station. It must also be recognized that in the entire "West of London" area, only 80 megawatts of capacity is available on the transmission grid. This means that W12A Landfill power plant project will have lots of competition for limited FIT contracts.



HELP Clean Water Funding

Through HELP Clean Water, Capital Project SW6040 (Landfill Gas Management) provides \$3,066,000 in federal and provincial funding for the construction of a proposed two megawatt power plant at the landfill, as well as the construction of a three phase power line to send the electricity generated to the nearest available transformer station. It is anticipated that this amount will cover the City's capital portion of the proposed public-private partnership. The role of this funding will be a key part of the options and updated business case given the new information from OPA.

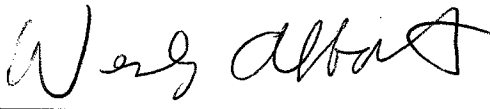
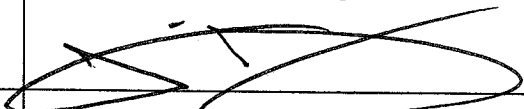
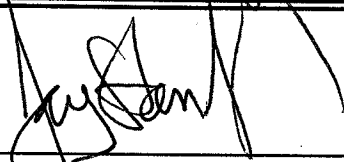

Next Steps

Given the Ontario Energy Board (OEB) rejection of the Union and Consumer's Gas proposal to pay a premium for RFG at this time and coupled with the new electrical transmission capability of the Wonderland Transformer Station, it is recommended that the REOI process for biogas utilization be suspended until the OEB approves the price premium for RNG and instead the City explore development of electrical power generation at the W12A landfill.

The next steps in developing a power plant at the W12A landfill, will be to determine the best approach for obtaining a FIT contract (i.e., maximize the points in the new ranking system) and the best approach for developing the power plant (city-led or developer-led).

ACKNOWLEDGEMENTS:

This report was prepared with assistance Mike Losee, Manager – Solid Waste Engineering.

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December 7, 2012

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