GREEN POWER BACKGROUNDER
February 2019

Technical Feasibility

Doubling the capacity of the existing Hartland power generation infrastructure would result in full utilization of available landfill gas through the conversion of gas at Hartland Landfill into electricity using a gas turbine. The original Hartland Landfill gas utilization infrastructure was sized to accommodate this expansion and is all that is required in the purchase and installation of an additional gas turbine. The CRD has experience running the existing facility and will have the skills and manpower required to operate the enhanced power generation facility. The power generation facility expansion will utilize the same proven technology as the existing power plant.

The CRD's Hartland Landfill was one of the first in the province to beneficially utilize landfill gas and, starting in 2003, gas has been collected and used for power production. With current landfill gas collection volumes, the Hartland Landfill power generation facility is only able to utilize 50% of the gas collected to produce electricity; the remaining gas is flared. Flaring converts methane to carbon dioxide, minimizing environmental impact but does not achieve beneficial use of the remaining gas. The original Hartland Landfill gas infrastructure was sized to accommodate doubling of the power production capacity with the purchase and installation of a second power generator. Other than budgeted annual maintenance, no additional capital upgrades to the Hartland electric generation system would be required.

Market Viability

CRD's standard electricity purchase agreement with BC Hydro was entered into in 2003 during a favourable period for independent power providers. As part of the key principles negotiated with BC Hydro in the initial contract negotiations, BC Hydro recognized the possibility of expanding future generating capacity and there is a provision within the existing contract to expand generation. The existing contract expires in March 2024.

The BC Hydro Standing Offer Program was launched in 2008 to provide a consistent framework for procurement of subsequent clean power by BC Hydro. Initial indications from BC Hydro, when contacted in early 2018, was that an expansion of the current power purchase agreement would, at best, attract no better than the CRD's existing power price. In August 2018, BC Hydro suspended accepting applications for the Standing Offer Program until a review of the program could be complete. The program is provincially mandated, and can only be cancelled by the Province. It is understood that the provincial investment in the Site C electricity generation project has weakened the business case for BC Hydro to contract with independent power providers at a preferential rate. BC Hydro staff have undertaken to review the CRD's existing power purchase agreement to determine indicative pricing and terms of any extension/expansion of the CRD's existing agreement. This work cannot be completed until after the initial review is completed in Spring 2019.

Opportunities for Synergies

Project interdependencies to date: Landfill gas utilization and organics processing have, in many ways, been viewed as discretely separate projects. They share interdependencies that could inform the technology options available and have implications in terms of capital costs and borrowing. The technology that is used to convert landfill gas into electricity can also be used with

other sources of biogas, including the biogas generated through anaerobic digestion when processing organics diverted from landfill.

Solid Waste Management Plan: Confirming an approach and preferred technology for utilizing landfill gas and organics processing will help inform public engagement on the solid waste management plan in late summer 2019 and will inform the sizing and technical requirements of landfill gas utilization infrastructure;

Climate Change Lens

The landfill gas utilization project addresses that landfill gas collected through the landfill gas collection system (currently 69%) avoids the release of this gas into the atmosphere contributing to greenhouse gas emissions. Upgrading landfill gas to electricity still avoids the release of landfill gas into the atmosphere. The BC Hydro grid is relatively clean (currently 93% renewable, with a provincial target to be 100% renewable by 2025). There are not the same greenhouse gas emissions benefits when displacing grid electricity as conventional natural gas.