
To: Zero Waste Committee

From: Brent Kirkpatrick, Lead Senior Engineer, Solid Waste Services

Date: June 8, 2022 Meeting Date: June 16, 2022

Subject: **Waste-to-Energy Facility 2021 Financial Update**

RECOMMENDATION

That the Zero Waste Committee receive for information the report dated June 8, 2022, titled “Waste-to-Energy Facility 2021 Financial Update.”

EXECUTIVE SUMMARY

This report provides the annual financial update for the Metro Vancouver Waste-to-Energy Facility. The Facility continues to be an environmentally sound, low-cost regional disposal option. In 2021, the Waste-to-Energy Facility processed 241,531 tonnes of municipal solid waste, at a net unit cost of \$66.60 per tonne for operation and maintenance. The Waste-to-Energy Facility net unit cost decreased as compared to 2020, primarily due to increased electrical and metals revenues, and reduced bottom ash disposal costs.

PURPOSE

The purpose of this report is to provide the Zero Waste Committee with the annual financial update for the Metro Vancouver Waste-to-Energy Facility located in Burnaby.

BACKGROUND

Annually, results of the operation of the Waste-to-Energy Facility and contract with Covanta Burnaby Renewable Energy, ULC (Covanta), including tonnages, expenditures, revenues, service level and performance, and unit costs, are provided to the Zero Waste Committee for information.

2021 WASTE-TO-ENERGY FACILITY FINANCIALS

Table 1 provides the past three years of expenditures for the Waste-to-Energy Facility. Total expenditures include operations and maintenance of the Waste-to-Energy Facility and ash management. Ash management costs were reduced in 2019 with the beneficial use of bottom ash in the construction of the United Boulevard Recycling and Waste Centre from October 2017 to August 2019, and increased to historic levels in 2020 and 2021 when bottom ash was again disposed in the landfill. In total, more than 75,000 tonnes of bottom ash were beneficially used as part of the construction of the United Boulevard Recycling and Waste Centre. A small amount of bottom ash was managed at the Coquitlam Landfill in the 2021 reducing costs compared to 2020.

Metro Vancouver has entered into a contract with Birco Environmental Ltd. to conduct a pilot project to process bottom ash for beneficial use as an input material to a local cement plant. If the process is successful it will result in a disposal reduction of approximately 40,000 tonnes per year of bottom ash or nearly 5% of all of the municipal solid waste requiring disposal in the region. The initiative will also reduce greenhouse gas emissions through reduced mining and transportation of raw materials for the cement plant.

Table 1: 3-Year Expenditures for the Waste-to-Energy Facility

	2019	2020	2021
Operating Cost	\$18,525,517	\$19,292,506	\$19,283,850
Fly Ash Disposal Costs	\$1,453,703	\$1,256,519	\$1,465,739
Bottom Ash Disposal Costs	\$559,382	\$2,016,633	\$1,560,862
Total Expenditure	\$20,539,052	\$22,565,658	\$22,310,451
Tonnage	253,148	244,362	241,531
Unit Cost / Tonne	\$81.13	\$92.35	\$92.37

Table 2 outlines Metro Vancouver's portion of offsetting revenues. Electrical revenue in 2020 was reduced due to scheduled turbine generator maintenance which occurs every six years. Metal revenue includes revenue from the non-ferrous metals recovery system that was installed in the fall of 2018 and commissioned in 2019. In 2021, electrical revenue was back to normal levels and metals revenue was significantly increased due to higher metals prices.

Table 2: Metro Vancouver's Portion of Electrical and Metal Revenues for the Waste-to-Energy Facility

	2019	2020	2021
Electrical Revenue	\$5,793,404	\$5,308,843	\$5,778,816
Metals Revenue	\$199,889	\$191,800	\$436,187
Tonnage	253,148	244,362	241,531
Unit Revenue / Tonne	\$23.68	\$22.51	\$25.73

Table 3 shows net cost per tonne for the Waste-to-Energy Facility from 2019 to 2021. An approximately \$10 per tonne increase in net costs were observed between 2019 to 2021. This increase is primarily due to the decrease in processed tonnage along with increased bottom ash disposal costs, and was offset by increased metals prices. The Waste-to-Energy Facility annual tonnage processed is impacted by waste quality, equipment availability, and boiler outages. Over the two past years, approximately 15% of the unscheduled downtime at the facility was due to tube leaks in the primary economizers. This has a direct impact on the waste processing capacity and electricity production of the facility. The Board approved replacement of the primary economizers in November 2021, and installation will start in the fall of 2022.

Table 3: 3-Year Net Unit Cost for Operation and Maintenance of the Waste-to-Energy Facility (including debt servicing)

	2019	2020	2021
Unit Cost / Tonne (from Table 1)	\$81.13	\$92.35	\$92.37
Unit Revenue / Tonne (from Table 2)	\$23.68	\$22.51	\$25.73
Net Unit Cost / Tonne	\$57.45	\$69.84	\$66.64

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

The Waste-to-Energy Facility net unit cost/tonne decreased slightly in 2021 relative to 2020 primarily due to increased electrical and metals revenue. Metro Vancouver continues to work with Covanta to minimize facility costs and, overall, the Waste-to-Energy Facility continues to be a cost-effective regional disposal option.

CONCLUSION

Expenditures in 2021 for the Waste-to-Energy Facility totaled \$22.3 million, resulting in an expenditure of \$92.37 per tonne. Metro Vancouver's portion of electrical and metals revenues totaled \$6.2 million or \$25.77 per tonne. Based on the plant processing 241,531 tonnes of municipal solid waste, the net unit cost per tonne for operation and maintenance of the Waste-to-Energy Facility in 2021 was \$66.64 per tonne. Tipping fee revenues are accounted for separately and are not included in this analysis.

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