
To: Zero Waste Committee

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

Date: July 8, 2021 Meeting Date: July 16, 2021

Subject: **Waste-to-Energy Facility 2020 Financial Update**

RECOMMENDATION

That the Zero Waste Committee receive for information the report dated July 8, 2021, titled “Waste-to-Energy Facility 2020 Financial Update.”

EXECUTIVE SUMMARY

The Metro Vancouver Waste-to-Energy Facility continues to be an environmentally sound, low-cost regional disposal option. In 2020, the Waste-to-Energy Facility processed 244,362 tonnes of municipal solid waste, at a net unit cost of \$69.84 per tonne for operation and maintenance. The Waste-to-Energy Facility costs increased as compared to 2018 and 2019 primarily due to the decrease in processed tonnage, an increase in bottom ash disposal costs, and reduced electrical revenue due to scheduled maintenance. In 2018 and 2019 more than 75,000 tonnes of bottom ash was beneficially used in the construction of the United Boulevard Recycling and Waste Centre. In 2020, all bottom ash was disposed of at the Vancouver Landfill. A procurement process for long-term beneficial use of bottom ash is underway.

PURPOSE

The purpose of this report is to provide the Zero Waste Committee with a 2020 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.

2020 WASTE-TO-ENERGY FACILITY FINANCIALS

Table 1 provides the past three years of expenditures for the Waste-to-Energy Facility. No debt charges were incurred in 2019 and 2020, due to completion of debt payments for the 2003 turbine generator installation. Total expenditures include operations and maintenance of the Waste-to-Energy Facility and ash management. Ash management costs were reduced in 2018 and 2019 with the beneficial use of bottom ash in the construction of the United Boulevard Recycling and Waste Centre from October 2017 to August 5, 2019, and increased to historic levels in 2020 with the return to landfill disposal. 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. Metro Vancouver has initiated procurement for long-term beneficial use of bottom ash.

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

	2018	2019	2020
Operating Cost	\$17,974,820	\$18,525,517	\$19,292,506
Fly Ash Disposal Costs	\$1,385,142	\$1,453,703	\$1,256,519
Bottom Ash Disposal Costs	\$257,461	\$559,382	\$2,016,633
Debt Charges *	\$879,800	\$0	\$0
Total Expenditure	\$20,497,223	\$20,539,052	\$22,565,658
Tonnage	253,123	253,148	244,362
Unit Cost / Tonne **	\$80.98	\$81.13	\$92.35

* Debt charges are payments for principles and interests on long term financing.

** Includes debt servicing costs (debt costs reduced to zero in 2019).

Table 2 outlines Metro Vancouver’s portion of offsetting revenues. Electrical revenue in 2020 was reduced, due to a scheduled turbine generator maintenance which occurs every six years. The turbine maintenance period was longer than anticipated due to pandemic-related supply chain challenges. This impacted electrical revenues. Metal revenue includes revenue from the non-ferrous metals recovery system that was installed in the fall of 2018 and commissioned in 2019.

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

	2018	2019	2020
Electrical Revenue	\$5,584,341	\$5,793,404	\$5,308,843
Metals Revenue	\$191,495	\$199,889	\$191,800
Tonnage	253,123	253,148	244,362
Unit Revenue / Tonne	\$22.82	\$23.68	\$22.51

Table 3 shows net cost per tonne for the Waste-to-Energy Facility from 2018 to 2020. An approximately \$12 per tonne increase in net costs were observed between 2018 to 2020. This increase is primarily due to the decrease in processed tonnage along with increased bottom ash disposal costs and reduced electrical revenue. The Waste-to-Energy Facility operates at maximum throughput, the annual tonnage processed is impacted by waste quality, equipment availability, and boiler outages. In 2020 the Waste-to-Energy Facility experienced electrical issues with the boiler air fans which reduced solid waste processing capacity, this electrical issue was rectified in January 2021.

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

	2018	2019	2020
Unit Cost / Tonne (from Table 1)	\$80.98	\$81.13	\$92.35
Unit Revenue / Tonne (from Table 2)	\$22.82	\$23.68	\$22.51
Net Unit Cost / Tonne	\$58.16	\$57.45	\$69.84

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

The Waste-to-Energy Facility costs increased in 2020 relative to 2018 and 2019 primarily due to the decrease in processed tonnage along with the increase in bottom ash disposal costs and reduced electrical revenue, due to scheduled maintenance. 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 2020 for the Waste-to-Energy Facility totaled \$22.6 million, resulting in an expenditure of \$92.35 per tonne. Metro Vancouver's portion of electrical and metals revenues totaled \$5,500,643 or \$22.51 per tonne. Based on the plant processing 244,362 tonnes of municipal solid waste, the net unit cost per tonne for operation and maintenance of the Waste-to-Energy Facility in 2020 was \$69.84 per tonne. Tipping fee revenues are accounted for separately and are not included in this analysis.