

DATE: January 28, 2019

FILE: 5360-60

TO: Chair and Directors
Solid Waste Advanced Technologies
Select Committee

Supported by Russell Dyson
Chief Administrative Officer

FROM: Russell Dyson
Chief Administrative Officer

R. Dyson

RE: Solid Waste Advanced Technologies Full History (formerly Waste to Energy)

Purpose

To provide the Solid Waste Advanced Technology (SWAT) Select Committee with the history and evolution of Waste to Energy (WtE) and SWAT in response to the Board direction for the SWAT to meet to review past work.

Recommendation from the Chief Administrative Officer:

This report is presented for information only.

Executive Summary

The Comox Strathcona Waste Management (CSWM) service has faced recent regulatory changes which have led to the service incurring additional costs to construct, operate and close landfills. The Comox Strathcona Waste Management Board (Board) sought options to reduce the impact of these costs and completed the first exploration of WtE technologies in 2011.

AECOM's 2011 report focused on WtE from 'traditional combustion':

- [Waste to Energy Options Assessment - 2011](#)
- [Presentation](#)

The AECOM report identified financial constraints with WtE facilities. These facilities are costly due to the high capital cost of a new facility as well short term costs can be significantly higher than for other residual waste management options such as landfills and diversion programs. The report indicated financial risks are much greater with emerging and unproven technologies since capital may be invested in something that could take longer than planned to have operating as designed, or does not function as promised.

The Solid Waste Management Plan update occurred in 2012. It stated the following in relation to WtE:

18.2 Waste-to-Energy Technologies

WtE, also defined as thermal processing or thermal treatment, involves the conversion of municipal solid waste into gaseous, liquid and solid products and a concurrent or subsequent release of heat energy. The heat energy is then used in many cases to generate electricity.

WtE best technologies and costs **will continue to be explored as an alternative to landfilling residual waste** and opportunities will continue to be assessed. CSWM services will communicate and cooperate with other regions in developing potential WtE capacity.

The Ministry of Environment and Climate Change Strategy's policy is for local governments to have a minimum target of 70 per cent reduction of waste before utilizing a WtE facility. The 70 per cent target is calculated only from reduce, reuse, and recycle initiatives. The initiatives outlined in this policy are projected to increase the diversion rate to over 70 per cent, thereby making WtE a viable option for CSWM services. Based on present conditions, it is anticipated that WtE may become part of the solid waste management system for CSWM in the future, and that solid waste planning must consider WtE technologies and include such consideration in reporting to the Board for all related authorizations.

- [Comox Strathcona Waste Management - 2012 Solid Waste Management Plan.](#)

In 2017 the CSWM Board directed staff to evaluate the current status of WtE process technologies. A report was provided in February of 2017 to address the selection of members and the terms of reference for the committee.

- [Staff report - Terms of Reference for WtE select committee](#)

The WtE Select Committee minutes from the following meetings are provided as follows:

- [March 16, 2017](#)
- [April 19, 2017](#)
- [May 4, 2017](#)
- [May 26, 2017](#)
- [August 10, 2017 – Evaluation of technologies](#)
- [November 28, 2017](#) – Version I – consultant's report
- [April 5, 2018](#) – Version II – consultant's report (final)

The WtE Select Committee recommended a Request for Information (RFI) process be completed and a final RFI document with covering staff report was provided to the Board in May of 2017. The information requested in this RFI process was intended to be used as information only and the submission of information did not create a legal or contractual relationship between the vendor and the Comox Valley Regional District. It was not intended to be a Request for Qualifications leading to a Request for Detailed Proposals, nor was it intended to be a Request for Proposals that would result in legal obligations by either party. Finally it was not intended to narrow the field of proponents, should a future procurement process be commenced. This was clarified with the various companies.

- [Waste to Energy Business Case Assessment – Request for Information](#)

In September 2017 the CSWM Board directed staff to increase the scope of evaluation to include a third shortlisted vendor:

- [Waste to Energy Business Case Assessment – Status Update](#)

The WtE Select Committee met on November 28, 2017, and Konrad Fichtner of Morrison Hershfield, presented a detailed review of the WtE Business Case Assessment.

- [Version I](#) draft report
- [Presentation](#) report.

Upon receiving the report, the WtE Select Committee determined additional analysis was required to understand how WtE would affect the full cost cycle for waste disposal in the CSWM. The

committee requested a scope change which included the following recommendations approved by the board in January 2018:

THAT the Comox Valley Regional District (Comox Strathcona Waste Management) Board approve additional analysis of Waste Treatment Technologies Netherlands B.V., and Sustane Technologies Inc., as detailed in Appendix A of Scope Change 02 – Full System Cost and Increased Technology Capacity Comox Strathcona Waste Management Waste to Energy Assessment, for an increased project cost of \$24,600 (excluding applicable taxes) with a revised project deadline of March 16, 2018.

AND FURTHER THAT the traditional waste to energy technology provided by Eco Waste Solutions be removed from further analysis.

Morrison Hershfield prepared the information for the Version II report - Full System Costing Information and Increased Capacity to the Technologies, on April 5, 2018. The WtE Select Committee met to review the presentations and minutes from the meeting are linked as follows:

- [Version II](#)
- [Full system cost breakdown](#)
- [WtE assessment - expanded results and recommendations](#)

Staff provided the following recommendations in the report dated March 26, 2018:

THAT the Comox Valley Regional District (Comox Strathcona Waste Management) Board receive the final report from Morrison Hershfield titled ‘Comox Strathcona Waste Management Waste to Energy Assessment, dated March 16, 2018;

AND FURTHER THAT the Comox Valley Regional District (Comox Strathcona Waste Management) Board support initiatives that allow the Comox Strathcona Waste Management service to achieve 70 per cent rate of diversion to allow for the ability to reassess the viability of Waste to Energy and alternate disposal technologies in 2022 as part of the major ten year update of the Solid Waste Management Plan;

AND FINALLY THAT the Comox Valley Regional District (Comox Strathcona Waste Management) Board refer the final Waste to Energy Assessment report to the Association of Vancouver Island and Coastal Communities for further referral to member governments.

The WtE Select Committee did not adopt the above and instead recommended the following to the Board:

THAT the Comox Strathcona Waste Management Board invite Sustane Technologies Inc. and Waste Treatment Technologies (WTT) Netherlands B.V. to present information regarding each company’s waste management technologies to a future CSWM Board meeting.

THAT the Comox Strathcona Waste Management (CSWM) Board invite the Ministry of Environment to explain the provincial regulations associated with waste to energy technologies including a discussion on definitions associated with the objectives for 70% diversion and the reduce, reuse and recycle approach to solid waste management to a future CSWM Board meeting.

THAT the Comox Strathcona Waste Management Board direct staff to monitor waste management technology proposed by Sustane Technologies Inc., in Nova Scotia, for up to one year of full operations;

AND FURTHER THAT a report on its effectiveness and efficiencies be presented to the CSWM Board following the monitoring period.

THAT the Waste to Energy Business Case Assessment staff report dated April 12, 2018, including the Waste to Energy Assessment report dated April 9, 2018 prepared by Morrison Hershfield, be referred to the Association of Vancouver Island Coastal Communities Special Committee on Waste Management for information.

The Board received the final staff report and presentation on April 19, 2018, the staff report, presentations and minutes were as follows, at which time the Board adopted the WtE Select Committee recommendations:

- [Staff report Version II - final](#)
- [Presentation](#)
- [Minutes](#)

Currently outstanding recommendation from Board is:

THAT the Comox Strathcona Waste Management Board direct staff to monitor waste management technology proposed by Sustane Technologies Inc., in Nova Scotia, for up to one year of full operations.

Please note the direction was for one year of operations and the latest update from Sustane was that expected full operation would occur in March/April of 2019. Based on Board direction, the monitoring period would commence following full operation. Staff can provide the SWAT Committee updates at regular intervals. A separate report outlines the proposed process for this evaluation.

Prepared by:

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Some additional historical information for perusal, 2011 WtE links:

[AECOM - Residual Waste Management options - cost and GHG's](#)

[WASTE TO ENERGY WORKSHOP - minutes with links to presentations](#)

[Future landfill siting review - residual management options 2011 & Presentation](#)

[Proposal for WtE and expression of interest AECOM - June 2011](#)

[Invite to Dr. Paul Connett - WtE expert](#)