
LIQUID WASTE HEAT RECOVERY

Effective Date: June 23, 2017 (revised March 26, 2021)

Approved By: GVS&DD Board

Policy No. UT-008

PURPOSE

To enable beneficial use of waste heat and associated greenhouse gas emission reductions from Metro Vancouver's liquid waste system by external parties.

DEFINITIONS

"Waste heat" is excess heat that is available from GVS&DD operations, including but not limited to heat from untreated sewage, treated effluent, equipment or processes.

"Heat user" is a third party interested in accessing excess heat from GVS&DD's liquid waste system. A heat user may be a member municipality or other entity.

POLICY

Metro Vancouver is committed to pursuing strategies and actions that mitigate climate change. Waste heat recovery projects that displace the use of fossil fuels result in a reduction in regional greenhouse gas emissions. Recovering waste heat from the liquid waste system contributes to GVS&DD's *Integrated Liquid Waste and Resource Management Plan* goal of using waste as a resource.

This policy enables expedient access to waste heat where technically and financially feasible while ensuring that GVS&DD is able to convey and treat wastewater and meet all service objectives. This policy applies to situations where external parties request waste heat from GVS&DD's liquid waste system and to situations where GVS&DD offers waste heat to interested external parties.

COLLECTION SYSTEM PROJECTS**Allocation of Waste Heat**

GVS&DD will allocate access to untreated sewage for heat recovery on a first-come first-served basis in response to requests by interested heat users, provided the proposed heat recovery project will not adversely impact GVS&DD services or other established heat recovery projects, as determined by GVS&DD review. If an established heat recovery project that is already in place or approved for development by GVS&DD could be impacted by a proposed new heat recovery project, the established project's heating and/or cooling requirements will have priority. Private entities requesting access to waste heat must provide a letter of support from the host municipality demonstrating support and cooperation including allowance for works within municipal rights of way. Projects that access heat from municipal sewers do not require GVS&DD approval.

Ownership and Responsibilities

GVS&DD owns a sewerage system and is responsible for sewage in its liquid waste system, including any associated resources such as heat. The boundaries of responsibility for heat recovery equipment and infrastructure are primarily tied to property ownership and will be defined in a contract between

GVS&DD and the heat user. GVS&DD will own and be responsible for the portion of the tie-in up to and including a shut-off valve on both the diversion and return lines. GVS&DD will consider an in-line heat recovery system built directly in a GVS&DD sewer if the system will not impair GVS&DD operations.

Cost Recovery

GVS&DD will charge the heat user for all costs incurred to establish and maintain access to sewage. The value of sewage will be assessed using business case processes, including consideration of nominal value of sewage, and incorporated into sewage access contracts. GVS&DD may consider capital investment in heat recovery projects accessing sewage from GVS&DD infrastructure. GVS&DD staff will evaluate heat recovery projects using established life cycle cost analysis and options analysis frameworks and will consider each project on a case-by-case basis. Benefits will include the value of avoided greenhouse gas emissions. GVS&DD does not seek to profit from the provision of heat. A contract with the heat user will be established for each project that assigns the costs and benefits between GVS&DD, the heat user and other funding sources. All maintenance and operating costs borne by GVS&DD from GVS&DD infrastructure will be recovered from energy purchasers.

TREATMENT PLANT AND OUTFALL PROJECTS

Allocation of Waste Heat

When GVS&DD identifies waste heat opportunities in wastewater treatment plants and effluent outfalls, GVS&DD will follow competitive processes in offering available waste heat to potential heat users, to ensure fairness and transparency.

Ownership and Responsibilities

The boundaries of responsibility for heat recovery equipment and infrastructure are primarily tied to property ownership and will be defined in a contract between GVS&DD and the heat user. GVS&DD will own and be responsible for waste heat recovery equipment and related infrastructure installed within its wastewater treatment plants and effluent outfalls, except in cases where ownership by an external party is deemed preferable to the GVS&DD.

Cost Recovery

Heat recovery projects within wastewater treatment plants and effluent outfalls will require capital investment by GVS&DD and will require ongoing operations and maintenance by GVS&DD. GVS&DD will recover the costs incurred in providing waste heat to external parties over the life of the project. GVS&DD does not seek to profit from the provision of heat. GVS&DD staff will evaluate heat recovery projects using established life cycle cost analysis and options analysis frameworks and will consider each project on a case-by-case basis. Benefits will include the value of avoided greenhouse gas emissions. A contract with the heat user will be established for each project that assigns the costs and benefits between GVS&DD, the heat user and other funding sources.

ALL PROJECTS

Environmental Attributes

Benefits associated with greenhouse gas reductions (such as carbon offset credits) and the costs of administering those benefits will be allocated on a case-by-case basis, in accordance with the costs and risks incurred by the parties involved in developing the heat recovery project.

Carbon credits will be allocated to the host jurisdiction as a project proponent for contributions to the project that can be financially valued (other than Tier 1 and 2 cost apportionments). In recognition of the important role of the host and of impacts that cannot be valued financially, the host jurisdiction will receive 5% of the credits allocated to GVS&DD, for the initial term of the agreement for the sale of heat.

Carbon credits from GVS&DD emissions reduction projects that have been allocated to GVS&DD as a project proponent will be retained by GVS&DD, up to the amount needed for GVS&DD to be carbon neutral in a given year. If GVS&DD achieves carbon neutrality in a given year, excess carbon credits will be transferred to member jurisdictions. The distribution of excess carbon credits among member jurisdictions will be calculated based on capital contribution to the portfolio of GVS&DD liquid waste heat recovery emissions reduction projects. Calculated excess carbon credit distributions less than one tonne will not be transferred, but will instead be redistributed among the other member jurisdictions.