

Frequently Asked Questions Industrial Waste Heat Recovery Project Funded by The Atmospheric Fund (TAF)

What is TAF?

- The Atmospheric Fund (TAF) is a non-profit corporation that provides grants to charities, not-for-profit organizations, and municipalities in the Greater Toronto and Hamilton Area for projects that have the potential to significantly reduce carbon emissions and/or air pollution.

How are TAF and the Hamilton Chamber connected?

- TAF is keen to align with leading organizations in the Hamilton area that support the vision of a climate-smart urban region. In 2018, the Hamilton Chamber of Commerce responded to TAF's call for proposals with an application to spearhead a collaborative, business-led project to help local manufacturers contribute to the development of a low-carbon economy.
- The application was successful and the Hamilton Chamber was awarded a two year grant spanning January 2019 through December 2020.

What is the purpose of the project?

- The aim is to determine the feasibility of additional and/or enhanced waste heat recovery systems used by companies (particularly manufacturers) operating in Hamilton's Bayfront Industrial Area.
- This will be accomplished by working with representatives from local companies and other subject matter experts to evaluate waste heat opportunities based on financial viability, technical feasibility and environmental benefit. The intent is to use this evidence to help unlock additional investments in waste heat technologies and infrastructure over time.



- A key related purpose is to work together as interested parties to influence government policies and investments in support of local waste heat recovery projects that have the potential to position Hamilton as a North American leader in smart energy systems.

What are the project's long-term goals?

- Increased adoption of waste heat recovery systems in the study area is expected:
 - a. To improve energy efficiency leading to lower costs
 - b. To decrease industrial GHG emissions leading to a cleaner environment
 - c. To support modernization efforts leading to increased business competitiveness
 - d. To unlock opportunities to share excess waste heat among users (industrial, institutional, commercial and residential) *and* across the area using innovations in district energy

What does the project plan entail?

- Between January 2019 and December 2020, the project will produce three related deliverables:
 - a. An inventory of industrial waste heat recovery systems and practices in use in the study area and those in the planning stage - **due Fall 2019**;
 - b. An interactive map that shows sources of waste heat and information related to its quality and quantity - **due Spring 2020**; and,
 - c. A one-of-a-kind report highlighting ways to capitalize on waste heat generated by companies operating in Hamilton's Bayfront Industrial Area, focusing on the business case and ROI for pursuing diversion - **due late Fall 2020**.
- These deliverables will be produced in a collaborative manner through the concurrent engagement of i) subject matter experts from industry, academia and government; ii) management personnel from the Hamilton Chamber of Commerce; and, iii) teams of postsecondary student researchers supported by the Project Working Group (see Page 3 for details).

How will the project positively impact the Hamilton community over time?

- This project will demonstrate to the wider public “collective action” on reducing local contributions to industrial GHG emissions across the region and beyond - a major step forward in showcasing the modernization of Hamilton measured by economic growth, environmental stewardship and social development.

What is the role of the Hamilton Chamber in this project?

- As the Organization of Record, the Hamilton Chamber of Commerce will provide oversight of this project as well as manage its implementation. Key responsibilities include convening a range of stakeholders, preparing project deliverables, liaising with the funder, and organizing relevant events and outward communication pieces.
- The Hamilton Chamber will also work to maximize the potential of this project through its Policy and Advocacy Council and extensive networks (local, provincial, national and global).

Do organizations need to pay to participate?

- No - all project-related costs are covered by The Atmospheric Fund grant.

What are project participants expected to do?

Below are the three “touch points” for this project and related expectations:

Working Group Member - select subject matter experts

- Meet on a monthly basis to help “drive” the project forward against the established work plan and critical path
- Ongoing support provided by the Hamilton Chamber’s project management team
- Focus on providing expertise - technical and non-technical - as well as on-the-ground knowledge of the local industrial and energy landscapes
- Help ensure the success of the Student Research Teams tasked with gathering information and assisting with analyses

- Member organizations of the Project Working Group are:
 - HCE Energy Inc.
 - Hamilton Port Authority
 - Postsecondary Institution - faculty member and student researchers (TBD)
 - Hamilton Chamber of Commerce

Study Participant - companies in the study area that produce and/or consume waste heat

- Interact with the Project Working Group to discuss shared goals, objectives, outcomes and benefits
- Meet with Student Research Team to provide baseline information, insights and ideas related to current waste heat systems and plans
- Meet again with the Student Research Team - and supervisor - to “map waste heat” and explore opportunities for additional improvements
- Review draft reports to ensure accuracy and provide feedback
- Attend milestone events/presentations designed to report on progress
- **NOTE:** No need to attend regular meetings

Advisory Panel Member - individuals with expertise and insights

- Attend quarterly meetings organized by the Hamilton Chamber of Commerce on behalf of the Project Working Group
- Provide input to ensure that the project remains on track to offer viable solutions tailored to the needs of industrial firms operating in the study area
- Champion the benefits of industrial waste heat recovery in the wider community

How will my organization benefit from participating in this project?

- Free consultation on waste heat recovery - current state, future opportunities
- Access to all reports, insights and recommendations
- Identify process improvements and energy savings for your organization
- Spot revenue creation opportunities - e.g., selling waste heat to others
- Work with others to unlock government investments - a “Team Hamilton” approach
- Access and leverage further grant monies
- Demonstrate tangible action on GHG emission reductions

How will confidentiality be ensured?

- The Hamilton Chamber of Commerce will ensure strict confidentiality of all sensitive and proprietary information by signing a Non-Disclosure Agreement with each project participant.
- This safeguard will extend to members of the Project Working Group.

How do district energy applications factor into this project?

- District energy has come a long way from high temperature steam systems to comparatively lower temperature water systems. With advances in technology, the temperature requirement for hot water (hydronic) space heating systems has decreased from the high-90s to mid-50s degree celsius.
- HCE Energy is currently operating a 55 degree celsius district energy loop within Hamilton, and state of the art condensing boilers and heat pump technology have helped make this possible. Continuous improvement - especially in heat pump technology - has opened up new, cost effective opportunities to use even lower grade heat (i.e., in the mid-30s degree celsius) to heat buildings. A quality heat pump can boost temperatures in the ambient range to approximately 55-65 degree celsius, making it suitable for hydronic heating systems used in buildings.
- Any lower grade waste heat that is of no value in an industrial process can provide space heating using modern district energy systems.



My business has waste heat, but it's intermittent. If we decide to divert this heat to others, would we need to deal directly with potential users who want constant supply?

- HCE Energy Inc. - a key contributor to this project - has extensive experience in negotiating and managing multi-partner energy agreements.
- By serving as an intermediary between waste heat producers and potential users, HCE Energy would help facilitate interactions, propose solutions and mitigate risks.

PROJECT CONTACTS

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