

## MEDIA RELEASE

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### **Waste energy at Edmonton-area industrial sites could heat 15,200 homes**

*Community Integrated Energy Mapping Feasibility Study* first of its kind in Canada

FORT SASKATCHEWAN – A pioneering study of targeted Edmonton-area industrial sites shows enough waste heat is generated to heat 15,200 homes; generate 5 MW of power (enough to power 5,100 homes); and reduce CO<sub>2</sub>e emissions in the region by ~151,000 tonnes.

Released today, the *Community Integrated Energy Mapping Feasibility Study* is the first of its type in Canada. It obtained data from 16 industrial companies in the Strathcona County and Alberta's Industrial Heartland areas near Edmonton to understand the energy flows and associated waste energy in the region.

The study is a partnership between CMC Research Institutes (assuming operational leadership for study lead C3), Alberta Innovates – Technology Futures (AITF), and Alberta's Industrial Heartland Association (AIHA). Project funding was provided to C3 by Natural Resources Canada (NRCan) and AIHA.

Conducted from May 2013 to June 2014, the study revealed a significant amount of waste heat exists in the industrial areas studied. Assuming that approximately 33 per cent of the total available waste energy could be captured and repurposed, 97 MW of waste energy could be applied towards other uses.

Geographically, the waste heat was clustered into three heat islands (see Figure 1 in Backgrounder) across the two industrial areas. These geographic limitations have implications for the feasibility of using the waste energy on a regional basis. While the results contain many subtleties described in the full report, the study identified:

300 MW of sensible waste energy, of which:

- 64 MW comes from low pollutant exhaust stacks with temperatures between 230 and 1100 °C;
- 85 MW comes from low pollutant exhaust stacks with temperatures between 120 to 230 °C;
- 151 MW comes from coolers and compressors with temperatures between 80 and 230 °C.

To download a copy of the study, go to <http://cmcghg.com/resources/special-projects/>

CMC Research Institutes provides leadership for regional waste energy mapping in Canada. CMC is a not-for-profit company dedicated to accelerating innovation relating to eliminating industrial greenhouse gas emissions by helping business and industry identify and advance innovative technologies from early stage development to large-scale practice.

“The results of the study indicate a positive value proposition for further industry and government engagement in implementation actions that reduce GHG emissions, improve competitiveness, enhance efficiency and contribute to economic diversification,” says Jeff Reading, CMC representative and project lead.

Alberta Innovates – Technology Futures, a leader and key resource to realizing Alberta's energy efficiency and energy integration opportunities, first championed the energy mapping concept in 2009 and was the technical lead on the energy mapping feasibility study.

“The energy mapping concept is the first step in understanding the business case for energy integration solutions for Alberta,” says AITF Environment and Carbon Management researcher Craig Aumann, a lead author of the study. “We’re now ready to facilitate the next steps based on study results and recommendations which will involve addressing the identified critical technological and social barriers to energy integration.”

The Heartland region, northeast of Edmonton, Alberta, was selected for the study because of its unique combination of industry and municipalities, the significant amounts of GHG produced in the region and the support of AIHA. The Heartland region includes five municipal districts (while the Strathcona Industrial Area is situated between Edmonton and Sherwood Park) and is home to approximately 40 companies across a variety of sectors primarily producing and processing oil, gas, and petrochemicals, as well as advanced manufacturing. Over the past several decades, these areas have grown into Canada’s largest hydrocarbon processing region.

“The Heartland sees this work as an important part of moving towards more sustainable development,” says Neil Shelly, Executive Director, Alberta’s Industrial Heartland Association. “Reducing the environmental footprint of our industrial region through a project such as this is a key part of our eco-industrial planning model for the region.”

Companies that participated in the study include Agrium, Air Liquide, Air Products, AltaSteel, ATCO Energy Solutions, Keyera Energy, North West Redwater Partnership, Oerlikon Metco (Canada) Inc., Plains Midstream, Rio Tinto Alcan, Shell Canada, Sherritt, Suncor Energy, Umicore, Veresen and Western Hydrogen. The wide industrial mix and proximity to municipalities helps to ensure the methods developed in this region can be applied to other industrial parks and regions across Canada.



Based on the success of the Alberta’s Industrial Heartland Association study, expanded regional waste energy mapping is being explored by NRCan and Carbon Management Canada.

For more information or interview requests, please contact:

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#### About CMC Research Institutes (CMC)

CMC Research Institutes (CMC) is an independent, not-for-profit business working to develop multiple, challenge-driven research institutes focused on providing high-value, low-barrier research and development services to industry or public sector clients addressing the challenge of industrial greenhouse gas emissions.

[www.cmcghg.com](http://www.cmcghg.com)

**About Alberta Innovates-Technology Futures (AITF)**

Part of Alberta’s research and innovation system, Alberta Innovates – Technology Futures is helping build healthy, sustainable businesses in the province. Through a suite of programs and services for entrepreneurs, companies, researchers, post-secondary institutions and investors, AITF provides technical services and funding support to facilitate the commercialization of technologies, develop new knowledge-based industry clusters and encourage an entrepreneurial culture in Alberta. [www.albertatechfutures.ca](http://www.albertatechfutures.ca)

**About Alberta’s Industrial Heartland**

Alberta's Industrial Heartland is one of the world's most attractive locations for chemical, petrochemical, oil, and gas investment. It is also Canada's largest hydrocarbon processing region. The region's 40+ companies, several being world scale, provide fuels, fertilizers, power, petrochemicals and more to provincial and global [www.industrialheartland.com](http://www.industrialheartland.com)

**About Natural Resources Canada (NRCAN)**

Natural Resources Canada seeks to enhance the responsible development and use of Canada’s natural resources and the competitiveness of Canada’s natural resources products. We are an established leader in science and technology in the fields of energy, forests, and minerals and metals and use our expertise in earth sciences to build and maintain an up-to-date knowledge base of our landmass. [www.nrcan.gc.ca](http://www.nrcan.gc.ca)

**BACKGROUND**

**Figure 1:** Aggregate summary of the amount of potentially recoverable waste heat from exhaust stacks and coolers and compressors across the heat islands identified in the two industrial areas. Energy sources which had high levels of pollutants or other associated risks are NOT included in this summary. The diameter of each red circle is 10 km.

