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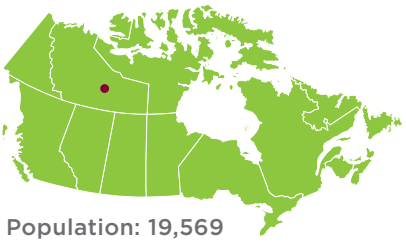
2018

WINNERS
Sustainable Communities Awards

City of Yellowknife, NWT



Population: 19,569
Project duration: 2013–2018

ENERGY: YELLOWKNIFE'S BIOMASS DISTRICT ENERGY SYSTEM

This guide is designed to help municipal staff and decision makers understand how excellent sustainability projects are developed, and help them adopt best practices in their community. Read the guide to learn more about award-winning strategies, then use the guiding questions to kick-start your sustainability initiative.

PROJECT OVERVIEW

- **To meet their energy needs and reduce costs and greenhouse gas (GHG) emissions, the City of Yellowknife developed a Biomass District Heating System fuelled by wood pellets, connecting five municipal facilities.**
- **This initiative addresses GHG reduction targets outlined in the Corporate and Community Energy Plan (CEP), and positions the City as a northern climate action leader. It demonstrates that transitioning to renewable energy sources from fossil fuels is possible and produces additional benefits for northern communities.**

How does this initiative benefit the environment?

- The anticipated annual **GHG reductions** (829 tonnes of carbon dioxide equivalent) from this project are 47 per cent of the target outlined in the CEP.
- This project will increase the share of corporate **renewable energy use** to 70 per cent from 50 per cent by 2025.

How does this initiative benefit the community?

- The community has benefited from the **collaboration and knowledge sharing** about energy and GHG reductions. Building managers have approached the City to learn how they could overcome obstacles and challenges in implementing their own district energy system.

How does this initiative benefit the local economy?

- The project demonstrates the **potential for local economic development** from investments in renewable energy.
- The demand for biomass pellets stimulated the development of a local wood pellet business and supports the local **biomass market**.
- The City expects to save $140,000 to $160,000 annually from **increased energy efficiency**, with additional maintenance and operations cost savings, a direct benefit to the municipality as a whole.

What are some of the successes of this project?

- Strategic direction was informed by **energy expert stakeholders** (including utility companies, government and non-profit organizations) and the general public to ensure the project was financially viable and to maximize triple bottom line benefits (to the environment, economy and community). The City found that communicating the benefits of the project to those who would use the facilities was important in securing public support.
- **Performance indicators** from the project can be used to measure, compare and track the district energy system's performance through the years.
- The City informed the design and planning of their district energy system by referring to smaller-scale wood pellet biomass projects that they had previously implemented. They learned that **scaling up from existing projects contributed to the larger project success**.

Want to implement an innovative energy project in your community? To get started, answer these questions:

What is a limitation to implementing larger-scale energy projects in your community? (This could be a real or perceived limitation, such as population size, insufficient funds or staffing, lack of knowledge/expertise, remoteness, council or public buy-in.)

Who are some stakeholders you would need to collaborate and communicate with to increase project buy-in?

Has your municipality completed a GHG inventory and/or set emissions reduction targets? If so, which energy and fuel sources do you use? How much energy does your community use?

What action is your community taking today to reduce corporate GHG emissions and/or promote renewable energy sources?

The City was already using wood pellets to heat municipal facilities before they implemented their district energy system. Is there a successful project, pilot or study that took place in your community that could be scaled up to a larger project?