

Dawson Creek: Solar Hot Water System Project at City Hall

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Dawson Creek's solar photovoltaic system on City Hall. Source: Dawson Creek Daily News.

The Project

In early 2006, the City of Dawson Creek (population, 11,583) began installing solar hot water systems on many of its municipal buildings. Solar hot water systems use energy from the sun to heat water, displacing the need for natural gas and reducing greenhouse gas (GHG) emissions as a result. City Hall was one of the first municipal buildings to receive a solar hot water retrofit, and since then the city has installed a number of them on both municipal and community buildings, including the local senior's centre.

Project Motivation

Dawson Creek is a signatory of the B.C. Climate Action Charter and is committed to reducing its

BY THE NUMBERS

Project type: Solar hot water system for City Hall

Year of implementation: 2006 to present

Project lifespan: 35 years

Cost: \$3,695

GHG savings: 1.1 tonnes of CO₂e per year

Energy savings: 20.8 GJ of natural gas per year

Financial Savings: \$185 per year

GHG emissions. The community and Council have a vision to be more sustainable, and it is this vision that is an underlying motivation for many of their municipal projects.

The primary objective of the solar hot water projects was to offset the city's use of natural gas for water heating. The City saw this project as an opportunity to reduce GHG emissions, to pilot solar hot water systems in the north, and to demonstrate climate leadership in B.C. As Dawson Creek spends \$1.5 million annually on energy costs, solar hot water also represents a major cost savings for the city.

Overcoming Barriers

Dawson Creek was one of the first local governments in B.C. to install solar hot water systems on municipal buildings. There were many technical barriers that needed to be overcome, including testing solar hot water systems in northern climates, and customizing each system to each municipal facility. There were no trained contractors in the north and an out-of-province consultant was necessary at a significantly higher cost. Dawson Creek worked with Northern Lights College to train local installers to help develop the local capacity to

install and maintain future solar hot water systems.

System costs were also identified as a barrier. Dawson Creek received grants from both the provincial government (through Live Smart) and Solar BC to help offset the cost of the solar systems. However, Solar BC grants are no longer available which will make system costs a larger barrier for any future installations.

Finally, Dawson Creek reported that the B.C. Building Code itself was a barrier to the installations because, at the time, energy efficiency and renewable energy technologies were not explicitly a part of the code. Dawson Creek was instrumental in working with Solar BC and the provincial government in developing the Solar Hot Water Ready by law, which is now an optional requirement in the B.C. Building Code.

Building Community Support for Projects

The need for solar hot water installations was challenging to communicate to the community. Dawson Creek focused on communicating the economic, social and environmental benefits of solar energy.

There was some skepticism that solar hot water may not work in the region “because it's too cold”. To overcome this misconception, Dawson Creek hosted several events and organized tours to explain how the systems work. Dawson Creek also created print materials for distribution. The city recommends that any future systems have the capability to report real-time energy consumption. This could help track the performance of the system and could lead to better energy literacy and overall understanding for why such projects are necessary.

Impact of Provincial Policies, Programs and Grants

The carbon tax worked in the favour of the solar

hot water project, increasing corporate awareness of the consumption of fossil fuels, providing a clear incentive to seek alternatives with lower costs and impacts and helping the City to put a price on GHG emissions.

“This was very much a self-imposed and principled approach,” said Emanuel Machado, director of corporate planning and sustainable development for the city of Dawson Creek. “We were clear that we were striving to find a way put a price on the environmental impacts. The carbon tax made that conversation quite a bit easier when it was implemented”

The carbon neutral requirements helped build corporate and community understanding about the impact and cost of energy. Given its positive impact, Dawson Creek expressed some concern about the weakening of the carbon neutral requirements. According to Mr. Machado, “by weakening how communities can meet the carbon neutral requirement, the provincial government is detracting from the efforts of leading communities who are actually implementing emissions reduction projects.”

An additional benefit to signing the Climate Action Charter was having access to the Climate Action Revenue Incentive Program (CARIP). The City spends \$1.5 million a year on energy, and through CARIP, they receive a small portion of this money back. Dawson Creek has also established its own internal Carbon Fund that sets aside \$100 for every tonne of GHG emissions from corporate operations. The Carbon Fund is used to finance emissions reduction projects in the community, and the CARIP rebate is used to partially offset Dawson Creek’s contribution into the fund.

Summary

The solar hot water project is one example of the City's leadership on climate action. Given the City's current appetite for more projects, strengthening existing provincial policies and programs can go a long way in helping Dawson Creek achieve its climate action objectives.