

Corporation of Delta: Sungod Recreation Centre Energy Conservation Retrofit

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Cleaver Brooks Clearfire condensing boiler.
Source: Corporation of Delta.

The Project

The Sungod Recreation Centre was the first building in the Corporation of Delta (population, 99,863) to be retrofitted by the municipality in order to reduce energy consumption and greenhouse gas (GHG) emissions. The project was completed in March 2011 and included a geexchange heat pump for the swimming pool, a boiler replacement for the pool's heater and a domestic hot water (DHW) preheat tank that reduces the amount of natural gas required to bring the pool to a comfortable temperature.

BY THE NUMBERS

Project type: Geoexchange heat pump
Year of implementation: 2011
Project lifespan: 20 years
Cost: \$750,000
GHG savings: 1,267 tonnes of CO₂e per year
Financial Savings: \$75,267 per year

Project Motivation

When planning the expansion of the fitness centre, Delta decided to use the opportunity to retrofit the entire recreation centre. Delta is motivated to be an environmental leader in B.C., and saw the retrofit to the Sungod Recreation Centre as an opportunity to demonstrate leadership and to significantly reduce their GHG emissions.

Delta is actively seeking to be environmental stewards and leaders in the community, taking a forward-thinking and positive role in achieving significant GHG reductions for the community.

The financial savings from the retrofits were important to get buy-in from Council, but were only a secondary motivation for implementing this project. To make the business case for the retrofit, Delta included both carbon tax and carbon offset payments into the financial analysis of the project.

Overcoming Barriers

Implementing new technologies can be a challenge as contractors, building operators and other municipal staff need to adapt to the new systems and processes. Delta is increasingly diversifying the technologies in their building systems, and it is an ongoing challenge to increase the knowledge base of employees who manage and operate the systems, and to ensure that buildings are working optimally.

The Sungod Recreation Centre retrofit has improved Delta's knowledge of how these systems operate, and increased Delta's capacity to implement similar projects in the future.

Building Community Support for Projects

The fitness centre, while it has doubled in size, did not expand Delta's overall energy footprint for the building. This success is the key message that Delta is trying to publicize about the retrofit project. Delta is anticipating that the communication of the project will become easier as the building operators can report on how the system is performing on a year-to-year basis.

Building retrofit projects are generally difficult to communicate because the upgrades are not immediately visible or apparent to the public. This is a challenge that Delta continues to try and address in its communication materials.

Impact of Provincial Policies, Programs and Grants

The carbon tax was built into the financial analysis for the project assuming a rate of

\$30 per tonne from 2012 to 2030, which is the lifespan of the retrofit. Delta is projecting that there will be \$267,216 in savings from avoided carbon tax payments. This savings is close to 35 per cent of the project's total cost, making the carbon tax a significant part of making the business case for the project.

Delta is also motivated to be a climate action leader in B.C., and is focused on making progress toward meeting its carbon neutral commitments under the Climate Action Charter. Their financial analysis also accounted for avoided carbon offset purchases. They used \$28.62 a tonne starting in 2012, and assumed the rate would rise by seven per cent each year until 2030. Delta is projecting that there will be \$501,544 in savings from avoided carbon offset purchases due to the Sungod Recreation Centre building retrofit. This savings is close to 67 per cent of the project's total cost.

According to Alan Evans, Capital and Energy Manager, Corporation of Delta,

“[Carbon neutrality] is a goal that our council has set for itself to try to achieve. We want to go as far as we can ... to be stewards in our community and be part of the overall solution”

Summary

The Sungod Recreation Centre energy conservation retrofit reflects Delta's commitment to reducing its contribution to climate change and providing leadership to the community by demonstrating quantifiable energy and GHG saving measures.