

Partners for Climate Protection

Greenhouse Gas Reduction Initiative of the Month

Clare combined technologies project



Municipal Profile

Population: 9,655

PCP Member since 2005

Up until a few years ago, the small rural municipality of Clare, Nova Scotia, relied primarily on forestry and fishing for its economy. Beginning in 2005, the municipality began developing the *Clare Energy Concept*, a plan that aims to expand Clare's economic development while keeping more energy dollars within the community and protecting the environment.

Background

At a 2004 conference, several of Clare's government, academic and business leaders learned of a sustainable energy model in Güssing, Austria, designed to use local renewable resources to supply the town's energy needs. In 2005, a delegation from Clare travelled to Austria. Allister Surette, vice-president of development and partnerships at the Université Sainte-Anne said that he was struck by the development and innovation in Güssing and of the similarity between Güssing and Clare: both were small rural regions with plenty of natural forest resources within their communities. Energized by the visit, Clare's leaders moved forward with the development of the *Clare Energy Concept*, with its lead project being the installation of three renewable energy technologies at the Université Sainte-Anne.

Implementation and Approach

This combined technologies project included replacing an oil-burning furnace with a biomass-fired central heating plant, a solar array for hot water heating and a small wind turbine for power generation.

"For a university, this project was of high priority because of the age of our existing boiler and the importance of reducing operational costs," says Mr. Surette. "Moreover, the project enhances Clare's economic development and reduces its carbon footprint."

The biomass boiler will use 2,500 tonnes of local wood waste as fuel per year. "The wood chips, the energy we need for the boiler, is right here in our own backyard," says Jean Melanson, warden for Clare. But finding a furnace supplier as well as a wood chip supplier was a challenge. Eventually, a local contractor and a company in Québec were found to install the new boiler, while a local company located seven kilometres from the university was chosen to supply the wood chips.



To augment the boiler and provide domestic hot water, 118 solar panels (*pictured above; photo courtesy of the Université Sainte-Anne*) were installed atop residence buildings. A 50 kW wind turbine has now been erected and operational since the end of January 2010.

Results

The total project cost was about \$2.5 million, half of which was provided by the federal government's Knowledge Infrastructure Program. The remaining financing came from a combination of provincial funds, federal and provincial rebates, as well as a private donation.

Mr. Surette estimates that the university used to spend approximately \$400,000 a year in oil and is confident that the wood waste required for the boiler will cost less than \$200,000 per year. Although the biomass boiler and solar panels have only been operating for a short time, he expects energy costs to be cut in half. "In terms of electricity, we spend about \$250,000 a year," he says. "The wind turbine should reduce our need to purchase electricity by between 5% and 15%." Based on those calculations, he expects GHG emissions to be cut by about 1,927 tonnes each year.

Lessons Learned

As noted earlier, one of the biggest challenges was finding a wood supplier. A solution was found that met Clare's needs as well as those of a local hog farmer. "There had been a downturn in the hog industry and the farmer we now work with had had to close three of his barns," recalls Mr. Surette. "He had the storage and the trucks to transport the wood waste; the only thing missing was the wood grinder. After we reached a deal with him, he purchased a new grinder."

Mr. Surette admits that the project took longer than anticipated, but says that the added time was ultimately a benefit because the university and the municipality were able to clearly plan what they wanted to do. "Good planning is critical, you have to know your options," he says and credits the Partners for Climate Protection (PCP) milestone framework with helping Clare and the university move forward.

Mr. Melanson adds that it's important to "be in tune with your community. You must have the support of your community before going into green projects."



*The biomass boiler uses about 2,500 tonnes of wood chips each year.
Photo courtesy of the Université Sainte-Anne.*

Future Direction

The university will monitor the project for efficiency and is considering introducing a second wind turbine, depending on how well the first performs.

Under its energy plan, Clare had identified several other renewable energy projects but at least three of these—one to capture methane from hog manure, one to convert fish oil to biodiesel and one to use wood waste to generate electricity at a lumber operation—have all faced setbacks due to the 2008–2009 economic downturn. Although Mr. Melanson believes that these projects will one day come to fruition, he admits that the municipality will have to wait until market conditions become more favourable before moving forward on them.

Further Information

Jean Melanson
Warden, Municipality of Clare
Tel: 902-769-2031
jeanmelanson@gmail.com

Allister Surette
Vice-President, Development and Partnerships
Université Sainte-Anne
Tel: 902-769-2114
allister.surette@usainteanne.ca

Read more about the *Clare Energy Concept* at
<http://www.clarenovascotia.com/municipal/en/energy.cfm>.

The Partners for Climate Protection (PCP) program is a network of Canadian municipal governments that have committed to reducing greenhouse gases and acting on climate change. PCP is the Canadian component of ICLEI's Cities for Climate Protection (CCP) network, which involves more than 900 communities worldwide. PCP is a partnership between the Federation of Canadian Municipalities (FCM) and ICLEI – Local Governments for Sustainability. PCP receives financial support from FCM's Green Municipal Fund.