

2009 Energy & Climate Action Awards

Instructions

Please follow all instructions and carefully complete the entire form to ensure eligibility.

1. Save this document, including the local government name in the document name
i.e. Townsville Energy Action Award Application.doc
2. Complete **ALL** sections by entering information in the grey fields provided within the document.
3. When complete, send this document by email to awards@communityenergy.bc.ca before **5:00pm August 20, 2009**. You may attach additional supporting material (e.g. in PDF format) to the email or by separate email (maximum size for email is 10 MB).

Applications will be judged based upon the following criteria:

- **Energy & Climate Action**
Integration of:
 - Community and corporate energy and GHG emissions reduction planning
 - Dense and compact development and sprawl avoidance measures
 - Urban form that supports low impact transportation
 - Transit improvements
 - Initiatives supporting energy efficient buildings and infrastructure
 - Supply of alternative energy sources, including use of renewables
- **Demonstrated Community Leadership**
 - Leadership shown by elected officials and staff
 - Barriers encountered and overcome (e.g. geography, limited resources, small population base)
- **Impact and Cost Effectiveness**
 - Demonstrated or projected energy produced or saved
 - Demonstrated or projected reduction in GHG emissions
 - Cost savings
- **Best Practices and Innovation**
 - Initiatives are at forefront of local government practices and are replicable by others

Please note that all submitted applications may be posted in whole or in part (e.g. executive summary), to the CEA website to showcase best practices, after the submission deadline.

If you have any questions about the application form or awards, please contact:

Patricia Bell, Sr. Community Energy Planner
Community Energy Association
t: 604-936-0470
pbell@communityenergy.bc.ca

Connecting communities, energy and sustainability

Section 1 Contact Information

Please enter the local government (municipality or regional district) and staff contact information.

Local Government Name District of Lake Country
 Contact Name Hazel Christy
 Title Director of Corporate Services
 Phone 250-766-5650
 Email hchristy@lakecountry.bc.ca

Section 2 Award Category

Awards are presented in two categories:

- **Community Design and Development**
- **Corporate Operations**

Please select the category in which you are applying. If you would like to apply in both categories, please complete a separate application for each category.

Check one

Community Design and Development

Planning and development in the jurisdiction that reduces energy use and greenhouse gas emissions. Examples include:

- Community energy plans, GHG action plans, Integrated Community Sustainability Plans, sustainable development checklists
- Smart growth / density/ compact development /transit-oriented development, reducing urban sprawl
- Transit improvements and transportation demand management
- Renewable district energy
- Policies encouraging green building development and retrofits

Corporate Operations

Actions, plans, and organization to reduce the local government's own energy/GHG emissions and move towards carbon neutral operations. Examples include:

- Local government operations energy/GHG inventories and action plans, management systems
- Standards for new local government buildings
- Energy efficiency retrofits of local government buildings
- Participation in E3 or other fleet management programs
- Use of renewable energy and waste heat capture in own buildings
- Municipal development of renewable energy generation (energy utilities, etc)
- Waste management (reduction and diversion of waste, or use of waste for energy)

Section 3 Executive Summary

Please enter a summary of the key elements of your application in 250 words or less. This, together with the staff contact name, may be posted on the Community Energy Association website.

Executive Summary

The District of Lake Country Hydrogenerating Station was envisioned as a means of using our water supply system for a dual purpose. Water from higher elevation lakes has supplied the municipal water system for forty years; what if we could harness the power of that water as a means of producing clean, green energy, before releasing it to the distribution system? The new hydrogenerating station achieves this vision, and is now in service producing emission-free renewable energy for the BC Hydro grid. Where previously, the water flowing down Vernon Creek from Swalwell Lake required pressure reducing systems, water now passes through a turbine before entering the drinking water reservoir. The result is 1.1 Megawatts of power annually, or enough electricity to power 400 homes for a year. The hydroelectric generating station takes advantage of the existing water distribution infrastructure, has no additional environmental impact and creates a long term source of revenue for the District. We believe that this is a great example of leadership and innovation for a mid-size community.

Section 4 Application Details

Please enter the details of your application.

A. Context

- Has the applying local government signed the *British Columbia Climate Action Charter*?
Yes.
- Has the applying local government participated in the Community Action on Energy and Emissions program? No.
 - If yes, please briefly list the CAEE commitments and key projects and status.
- Has the applying local government developed a Community Energy Plan, a GHG / Climate Action Plan, or explicitly addressed energy / climate in other planning initiatives (such as Official Community Plan or a plan for carbon neutral operations)?
Under preparation as part of the Official Community Plan
 - If yes or partial, please note adoption date, targets (if any) and a brief list of highlights
Official Community Plan draft is under preparation, will go to Council and through public consultation in the fall of 2009.

B. Actions

This is the main section of the application, where you can provide the most detail. There is not a specific word limit for this section. Describe actions to reduce energy and GHG's in each of the following areas that apply. Only complete fields relevant to the application. Note that information entered here should reflect only the category for which you are applying – i.e. community design and development, or corporate operations.

- **Alternative energy supply or use of renewable energy**

Project Summary Report

Ever since the development of the area's original water system, the possibility of using water from the upland lakes to provide both drinking water and power generation has been discussed. The Hydroelectric Generating Station was planned as a component of the Eldorado Reservoir, completed in the spring of 2007. Designed as a balancing reservoir, the reservoir improves the hydraulic stability and flexibility of the water system. While reservoirs are often used to store water for power projects, in this case the power project is actually providing a service to the reservoir by breaking pressure as the water enters the reservoir.

The water that supplies the reservoir and Lake Country residents originates from Swalwell Lake, flowing to the reservoir site through approximately 3 km of 810 mm (32 inch) steel main line, installed in 1969. The lake intake is at an elevation of 820m, and the reservoir is at 630m resulting in an elevation difference of 190m between the existing intake and the reservoir. The Hydroelectric Station breaks this pressure from the water as it enters the reservoir and simultaneously generates electricity.

The hydroelectric works include a 1.1 megawatt turbine housed in the powerhouse. This turbine is fed via an offtake from the existing water mainline. Water then leaves the powerhouse via the tailrace or channel, emptying into the reservoir. A 1km-long power line connects the plant to the BC Hydro grid.

The Hydroelectric Generating Station project officially began with the award of the supply contract for the turbine generator in January of 2008. This was followed by other tenders in 2008 for the construction of the facility adjacent to the existing reservoir and the supply of other key components. Construction took place throughout the remainder of 2008 and into 2009. The plant was made operational and hooked up to the BC Hydro grid in June 2009, with the official commissioning taking place just prior to the Grand Opening on June 25, 2009.

The plant will produce approximately 3900 Megawatt-hours of emissions-free, renewable energy per year, enough to supply roughly 400 homes for the life of the project (25 years). Sale of electricity is expected to yield an annual revenue stream of \$250,000 per year to the District of Lake Country.

The unique aspect of this project is that existing water infrastructure is utilized to generate power. The District of Lake Country Hydroelectric Generating Station is one of only two micro-hydro projects in BC based on a municipal water reservoir (the other is located in West Vancouver), and it is the first where the municipality is the seller of electricity to BC Hydro.

C. Results

Describe results (such as costs and benefits, money and energy saved, GHG emission reductions, and other benefits). Describe your approach to calculating results.

From Official Press Release



MULTI-LATERAL PARTNERSHIP MAKES HYDRO PROJECT A REALITY

Initiative produces clean energy, save money for users

June 25, 2009

Lake Country, British Columbia – A new 1.1 Megawatt micro-hydro project, the Lake Country Hydroelectric Generating Station, will provide enough renewable energy to supply 400 homes annually. The project was made possible by a nearly \$2.8 million investment from the Government of Canada through the Gas Tax Fund and the ecoENERGY for Renewable Power initiative, and a \$500,000 low-interest loan and \$30,000 grant from the Federation of Canadian Municipalities' Green Municipal Fund, which is funded by an endowment from the Government of Canada.

Ron Cannan, the Member of Parliament for Kelowna—Lake Country; Norm Letnick, the Member of the Legislative Assembly for Kelowna—Lake Country; James Baker, Mayor of Lake Country; and Roland Stanke, Mayor of Clinton and representative of the Union of British Columbia Municipalities opened the Lake Country Hydroelectric Station at an event today.

“Our Government, under the leadership of Prime Minister Stephen Harper, understands the importance of supporting infrastructure projects that create jobs, stimulate the economy and improve our environment,” said MP Cannan. “This new Hydroelectric Generating Station will not only provide more cost effective energy, but will also support environmentally sustainable energy generation.”

The new project will also provide a financial dividend to local taxpayers thanks to a long-term contract with BC Hydro that will allow Lake Country to sell the output from the new generating station. The anticipated output of the plant is 3,900 megawatt-hours per year of emissions-free power and an estimated \$250,000 in annual revenue.

“The District of Lake Country is pleased to be able to produce emission free renewable energy from existing waterworks currently supplying water to the community,” said Mayor Baker. “In this way we can help to reduce our collective carbon footprint while minimizing our environmental impact and generating revenue for the District.”

“Investing in green technology through the Gas Tax Fund allows B.C. communities to meet the needs of residents while protecting the environment and supporting sustainable growth,” said MLA Letnick. “This micro-hydro project will generate renewable energy for hundreds of Lake Country homes.”

“Lake Country’s project is a great example of the potential for communities to create renewable energy from the everyday operations,” said UBCM President Robert Hobson. “The initial investment for a project like this is steep, so the support from senior levels of government is appreciated.”

The federal Gas Tax Fund is a tripartite agreement between Canada, British Columbia and UBCM delivering infrastructure funding to local governments for capital projects that lead to cleaner air, cleaner water or reduced greenhouse gas emissions. UBCM administers the Gas Tax Fund in B.C. in collaboration with Canada and British Columbia.

D. Leadership

Describe leadership demonstrated by elected officials, staff, and others. Discuss barriers encountered and how they were overcome.

The vision was shared by Municipal Council and staff at the District of Lake Country. This is a small power project, some thought too small to be worthwhile. Now that it is up and running, generating power for the grid and income for the municipality, there are many more supporters. Financial barriers were overcome by grants from several levels of government municipal long term borrowing making up the difference. The custom design and construction of the turbine and components of the plant were completed by a series of consultants and engineering firms with experience in the hydroelectric generating industry. There were many regulatory issues to overcome, including environmental permits, crown land tenure issues, electrical regulatory issues, and negotiations with BC Hydro. Discussions are still underway with ILMB regarding the need for new lease (and cost to the municipality) for a pipeline that has been in the ground undisturbed for 40 years. Finally there were a series of technical issues to overcome prior to the commissioning of the plant and bringing it on line. Patience and dogged commitment on the part of the municipality, staff and the project consultant allowed for the completion of all the necessary steps in a long complicated process.

E. Other

Use this space to describe anything else that is relevant to your application that does not fit in other sections.

See attached photos

THANK YOU!