

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 Town of Gibsons
 Contact Name Paul Gipps
 Title CAO
 Phone 604-886-2274
 Email pgipps@gibsons.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.

The Town of Gibsons is rapidly becoming a leader in the area of energy and climate change action. One of the first communities to sign the Climate Action Charter, Gibsons is undertaking some major initiatives to reduce environmental impact and create a sustainable community.

Beginning with Gibsons Official Community Plan (A Smart Growth BC Honourable Mention award winner), the Town has emphasized compact, mixed-use development with walkable neighbourhoods and alternative transportation. The new Upper Gibsons Neighbourhood Plan will concentrate future development near the commercial center of town, with 90% of new development located within 400m of transit.

A community energy and greenhouse gas emissions plan is currently underway, slated for completion by the end of the year. This plan is being undertaken in partnership with the Regional District and other Sunshine Coast municipalities, in order to most effectively address climate change priorities.

The centerpiece of Gibsons' energy and climate change action is the new Upper Gibsons Geo-exchange District Energy Utility. The first of its kind in North America, this system will provide renewable earth energy heating to all new buildings in Upper Gibsons. Utilizing public parks and greenspace as ground heat exchangers, the system be operated as a community district heating system owned by the municipality. At full build-out it will service approximately 25% of the Town's population, and result in energy savings over 60% and GHG reductions of over 90%. Financing is in place for this project, and construction will begin in fall 2009.

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? Yes
 - If yes, please briefly list the CAEE commitments and key projects and status.

In its CAEE application, Gibsons applied for funding for a geo-exchange district heating system for Upper Gibsons, and committed to the following:

1. Joining E3 Fleets
2. New civic facilities will be LEED Gold
3. New homes will be EG80
4. 10% of energy needs will come from community based clean energy resources
5. To achieve Canada Wide Standards for particulate matter and ground level ozone
6. Develop a community energy/GHG action plan

The project that was applied for and approved was a study for a geo-exchange district heating system for Upper Gibsons. This study was completed, and the project is now proceeding. Gibsons is on its way to achieving all six of its CAEE commitments:

1. The Town has joined E3 Fleets.
 2. No new civic facilities have been built, but the Town is committed to building green buildings.
 3. The new district energy system will achieve EG80 in Upper Gibsons, the location of most new development in the Town.
 4. The new district energy system will provide about 18% of the Town's energy for buildings.
 5. Canada Wide Standards for particulate and ozone have been met.
 6. A community wide energy and GHG plan is underway.
- 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)? Yes
 - If yes or partial, please note adoption date, targets (if any) and a brief list of highlights

A corporate inventory has been completed. A community energy and emissions plan is currently underway, with a draft report due in December. This plan will include recommendations for energy and GHG reduction targets and actions, which will be incorporated in the OCP. However, Gibsons' existing OCP (2005) was developed on Smart Growth principles, with an emphasis on mixed use development, walkable neighbourhoods, alternative transportation, and compact building design. This plan was given an Honourable Mention in the 2007 Smart Growth BC awards.

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.

- Planning, management systems, and other approaches that establish high-level direction for reducing energy use and GHG emissions

Gibsons is currently undertaking a community energy and emissions plan. This is being done as a collaborative effort between the Regional District, District of Sechelt, and the Sechelt Indian Government District. The communities of the Sunshine Coast recognize that, although each unique, they have many overlapping concerns and objectives when it comes to addressing climate change. This is particularly true with regards to transportation, as many residents commute between communities or through them on the way to the ferry. Having a joint energy and emissions plan will allow coordinated efforts, while also allowing for individual inventories and targets for each community. A draft plan is expected to be complete by December.
- Urban form that is dense and compact, avoiding sprawl

The Town of Gibsons has always had a relatively compact design, in comparison to many small communities. This dates to its origins as a fishing village and cottage resort. However, development in the 1960s and 70s led to many of Gibsons services being moved to Upper Gibsons, away from the bulk of the housing. The new Upper Gibsons Neighbourhood Plan, completed in 2006, seeks to rectify this by focusing new development in the Upper Gibsons neighbourhood. The majority of new residential development in the Town will occur in this area through 2026. The plan calls for a mix of housing types, including innovative housing types such as quad-plex housing on single family lots and cottage clusters. This will allow greatly increased density while maintaining the look and feel of the Town. All new housing will be within 400m of transit, and within 500m of key services such as schools, grocery stores, banks, restaurants, and the recreation centre.
- Initiatives that support low impact transportation, including increased use of transit

The Gibsons OCP has placed an emphasis on walking, cycling, and transit. While the Town has mostly quiet streets that are good for walking and cycling, Gibsons Way has long been a dangerous route for cyclists. Recently two lanes of traffic were removed from Gibsons Way in order to create bicycle lanes and transit pull-outs. Additional lights and crosswalks were also added. Although there has been some opposition to the project from drivers, this has made the road safer for pedestrians, cyclists, and transit users.
- Energy efficient buildings

Although the Town is constrained by the building code in efforts to increase the efficiency of buildings, Gibsons has been aggressively targeting increased efficiency through rezoning. Two of the most recent rezoning applications committed to LEED Gold status as part of their amenities contribution (unfortunately these projects were cancelled due to the economic downturn. The first development within the Upper Gibsons neighbourhood has committed to building all houses to Energuide 80.
- Energy efficient infrastructure

As part of a required stormwater piping upgrade, the Town is exploring opportunities to use the old pipe as part of a seawater heating system, which would extract heat from seawater with heat pumps and use it to heat some commercial and institutional buildings. A grant application has been made to fund this project.
- Alternative energy supply or use of renewable energy

The centerpiece of Gibsons' renewable energy and climate change actions is the Upper Gibsons Geo-exchange District Energy Utility (GDEU). This is an innovative clean energy project that will reduce energy consumption, significantly reduce community-wide

greenhouse gas emissions, and provide long-term economic benefits to the Town and its citizens.

The earth is a source of renewable energy, where heat from the sun is absorbed and stored throughout the year. The GDEU will make use of this heat through ground fields located in public greenways and park space. Water circulated through pipes buried in the ground will gather heat and distribute it to homes and buildings throughout the Upper Gibsons neighbourhood, where heat pumps will extract the heat and use it within the buildings. The system will be operated as a municipally owned utility, charging customers for connection and the heat consumed.

This system would be the first of its kind in North America. It addresses the two primary barriers to widespread implementation of geo-exchange systems – up-front cost and a lack of available land. By accessing parks and greenways, public land is made available for geo-exchange. And by operating as a municipal energy utility, the up-front installation cost is not borne by residents. Unlike traditional district heating systems, the use of low-temperature distribution in a district energy utility allows for capture of waste heat from facilities such as ice rinks and supermarkets, as well as providing future flexibility for additional renewable energy resources.

The system will be operated as a community district heating system owned by the municipality. At full build-out it will service approximately 25% of the Town's population, and result in energy savings over 60% and GHG reductions of over 90%. The system is expected to include all new residential and commercial buildings, as well as the existing ice rink, community centre, and curling rink. Other potential customers include the shopping mall, supermarket, secondary school, and several hotels.

Phase 1 of the project is a 110 home development. The Town requested and obtained a covenant requiring the developer to make use of a GDEU for heating and hot water. This phase will result in the establishment of the GDEU and policies and legislation governing all future phases. All required funding is in place and design is set to start in the next few weeks, with construction starting on October.

- Other

Gibsons' water comes from an underground aquifer, and was recently voted the best water in North America at an international competition. To protect this resource, the Town is installing water meters in every home, at a cost of \$1.4 million. Sprinkling regulations are in effect each summer.

Gibsons has restricted residents to one garbage container a week, with a charge for additional containers. Green waste is prohibited in the garbage, and the Town has set up a free green waste drop-off depot. Backyard burning has also been banned.

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.

The Upper Gibsons GDEU will result in energy savings of 27,600 GJ and GHG savings of 1,450 tonnes, based on the feasibility study performed. This represents a savings of 63% of energy and 96% of GHGs related to heating and hot water. The project will result in energy cost savings of \$350,000 annually, with approximately \$250,000 used to finance the system and \$100,000 returned to residents as savings. In terms of Gibsons' overall emissions profile, the projected savings are equivalent to 19% of buildings related emissions and 4% of total community emissions.

D. Leadership

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

Staff and council have had to overcome many a barriers in order to achieve sustainability objectives. One of the biggest barriers is that of being a small town with a limited tax base (4,300 residents, no major industry). Even small projects can make a big impact on the Town's budget. The Town has prioritized sustainability initiatives in applying for grants, and has not been afraid to borrow for key initiatives.

Another major obstacle is overcoming public resistance. Many people come to the Sunshine Coast in order to afford large lots and single family homes. And given that almost all residents have cars, some question the need for transit, cycling, and walking amenities. Council has had to show leadership in the face of opposition, and has consistently promoted smart growth planning with respect to housing and transportation.

E. Other

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

THANK YOU!