

# Regional District of Okanagan Similkameen

## CORPORATE

# CLIMATE ACTION PLAN

The South Okanagan Similkameen Climate Action Planning Project is a collaborative effort between the Regional District of Okanagan Similkameen and the member municipalities of Keremeos, Oliver, Osoyoos, Penticton, Princeton and Summerland to develop corporate and community climate action plans to meet their voluntary commitments under the Climate Action Charter and legislated obligations under the Local Government (Green Communities) Statutes Amendment Act (Bill 27, 2008). This report represents the Regional District of Okanagan Similkameen's Corporate Climate Action Plan.

South Okanagan Similkameen Climate Action Planning Project Partners:



- Regional District of Okanagan Similkameen
- Village of Keremeos
- Town of Oliver
- Town of Osoyoos
- City of Penticton
- Town of Princeton
- District of Summerland

# SUMMARY

The Regional District of Okanagan Similkameen (RDOS), in collaboration with its municipalities of Keremeos, Oliver, Osoyoos, Penticton, and Princeton, has undertaken this project to define a baseline inventory of **corporate energy consumption** and **greenhouse gas (GHG) emissions** for 2009 and develop a plan to reduce those emissions and become carbon neutral by 2012. This plan identifies the opportunities for the RDOS to reduce GHG emissions resulting from corporate operations over the next 10 years by approximately 10%.

## 2009 Corporate Energy and GHG Emissions

In 2009, the RDOS consumed approximately **20,000 GJ** of energy and emitted approximately **586 tonnes of CO<sub>2</sub>e** (GHG emissions expressed as carbon dioxide equivalents or CO<sub>2</sub>e) in the delivery of its services<sup>1</sup>. Energy consumption by buildings and infrastructure accounts for 78% of corporate GHG emissions, and fuel consumption by fleet vehicles accounts for 22%.

## Corporate GHG Emission Reduction Target [proposed]

The RDOS will commit to reducing corporate GHG emissions by

- 10% from 2009 levels by 2020.

## Implementing Key Reduction Measures

The plan identifies 12 reduction measures to assist the RDOS in meeting the 2020 target, including a number of regional collaboration opportunities where the RDOS can work with member municipalities to advance corporate climate action in the region. Implementation requirements such as staff roles and responsibilities, and funding opportunities are outlined in an effort to assist the RDOS in achieving the 2020 reduction target.

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<sup>1</sup> Reported GHG emissions are those applicable to the Climate Action Charter carbon neutrality commitment. Emissions resulting from solid waste decomposition are not included.

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# 1 INTRODUCTION

## 1.1 Energy, GHG Emissions and Climate Change

There is increasing evidence that global climate change resulting from emissions of carbon dioxide and other greenhouse gases (GHGs) is causing, or will soon cause, significant environmental impact on the ecology of the planet. In addition to impacting ecology, climate change is expected to have serious negative impacts on global economic growth and development. In 2005, the UK government commissioned an independent economic review called the “Stern Review”, which states that the “costs of stabilizing the climate are significant but manageable; delay would be dangerous and much more costly”. This is a significant conclusion highlighting that deferring action will be more costly than initiating action immediately.

Climate change is a global issue, caused by the daily activities of billions of humans, primarily through the consumption of fossil fuel energy. A solution to the issue will require the activities of billions of humans to **conserve energy** and **reduce GHG emissions**. All persons and entities, including local governments, have a role to play in finding these solutions.

As a demonstration of their central role in communities, local governments can take action on energy consumption and GHG emissions by:

- Identifying opportunities to reduce energy consumption and GHG emissions from their operations (Corporate Climate Action Plan), and
- Implementing broader policies and programs to reduce energy consumption and GHG emissions in the community as a whole (Community Climate Action Plan).

## 1.2 Climate Action Charter Commitment

The **BC Climate Action Charter** is a provincial initiative introduced in September 2007 to encourage local governments to significantly cut greenhouse gas emissions. Participating local governments have committed to becoming carbon neutral in their municipal operations beginning in 2012. The Regional District of Okanagan Similkameen (RDOS) has signed the Charter. Achieving carbon neutrality will involve taking action to reduce GHG emissions, and because it is currently not possible to operate without some emissions, the RDOS will also need to purchase carbon offsets to reach this goal.

### 1.3 What is Carbon Neutrality? What is a Carbon Offset?

Achieving carbon neutrality in local government operations means that the RDOS will:

1. Establish a **baseline** of annual GHG emissions,
2. Reduce those emissions as much as possible through **reduction measures**, and
3. Purchase **carbon offsets** for any remaining emissions (beginning in 2012).

Since it is currently impracticable in the near term to reduce operational emissions to zero, there will always be some requirement to procure some offsets. A carbon offset is a reduction in GHG emissions that is generated through a reduction project (either in the community or elsewhere). These reductions are verified, and then can be purchased by the local government. Note that a project that reduces the local government's current emissions does not qualify as an offset project.

### 1.4 Purpose of the Corporate Climate Action Plan

The Corporate Climate Action Plan has been developed to:

- Provide a baseline of energy consumption and GHG emissions for RDOS (corporate) operations.
- Define targets and develop actions for the RDOS to implement that will reduce energy consumption and GHG emissions from corporate operations.
- Support the RDOS in meeting its commitment to the BC Climate Action Charter.

### 1.5 Methodology

The Corporate Climate Action Plan was developed in a series of steps as follows:

- **Corporate inventory:** An inventory of corporate activities that consume energy was compiled to estimate GHG emissions for the 2009 baseline year.
- **Background research and phone interviews:** The inventory informed discussions with RDOS staff around corporate policies and initiatives that impact energy consumption and GHG emissions. Through these discussions and a review of relevant background documents, a draft plan was prepared.
- **Staff workshop:** A workshop was held with RDOS staff to provide an overview of local government commitments and activities with respect to corporate climate action and to review and discuss the draft plan. Following the workshop the plan was revised to reflect staff feedback.

## 2 CORPORATE ENERGY AND GHG INVENTORY

### 2.1 Operations Profile

In order to deliver services to residents, the RDOS operates the facilities, fleet and utility accounts as outlined in Table 1, either directly or through provision of funds to other agencies. This profile is the basis for the 2009 corporate energy and GHG emissions inventory.

Table 1. Operations profile for the RDOS

Type	Number
General Buildings <sup>(1)</sup>	13
Community and Recreational Facilities <sup>(1)</sup>	8
Fire halls <sup>(1)</sup>	4
Vehicle Fleet	17
Electricity Accounts <sup>(2)</sup>	49
Natural Gas, Propane Accounts <sup>(2)</sup>	13, 1

Notes:

(1) Building counts are estimated from the descriptions on utility accounts.

(2) Utility accounts are those owned or paid by the RDOS.

### 2.2 2009 Energy Consumption and GHG Emissions

The RDOS consumed approximately 20,000 GJ of energy in 2009 and emitted approximately 586 tonnes of CO<sub>2</sub>e in the delivery of its services. Table 2 breaks down these totals by fuel type.

Table 2. Corporate operations energy consumption and GHG emissions, 2009

Fuel Type	Energy Consumption	Energy Units	GHG Emissions (tonnes CO <sub>2</sub> e)	Annual Energy Expenditure (Approx \$)
Electricity	2,612,042	kWh	16	\$182,840
Natural Gas	8,549	GJ	436	\$102,590
Gasoline	52,453	L	125	\$52,450
Diesel	2,325	L	6	\$2,320
Propane	2,116	L	3	\$1,690
<b>Total</b>			<b>586</b>	<b>\$341,890</b>



The total energy consumed and GHG emissions produced are also broken down by operational departments, as shown in Figure 1 and Figure 2, respectively. These charts demonstrate that although electricity accounts for a substantial portion of energy consumption, it contributes fewer GHG emissions than fossil fuel-based energy sources (e.g. natural gas, gasoline, and diesel).

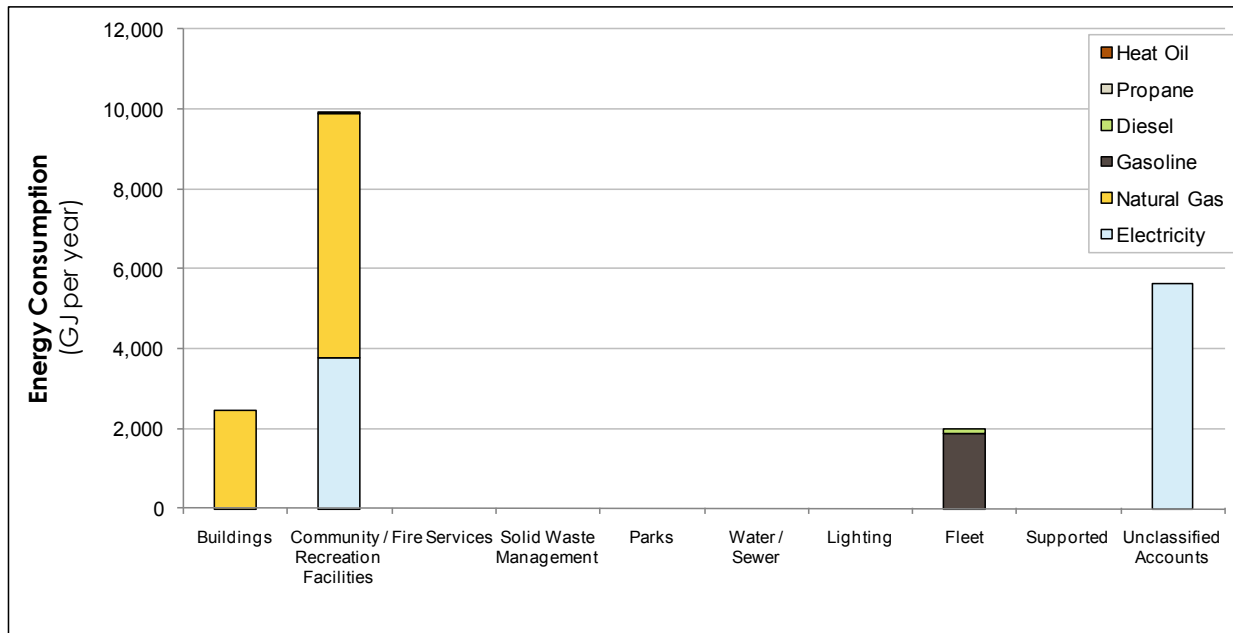


Figure 1: Energy consumption (GJ) from corporate operations, 2009

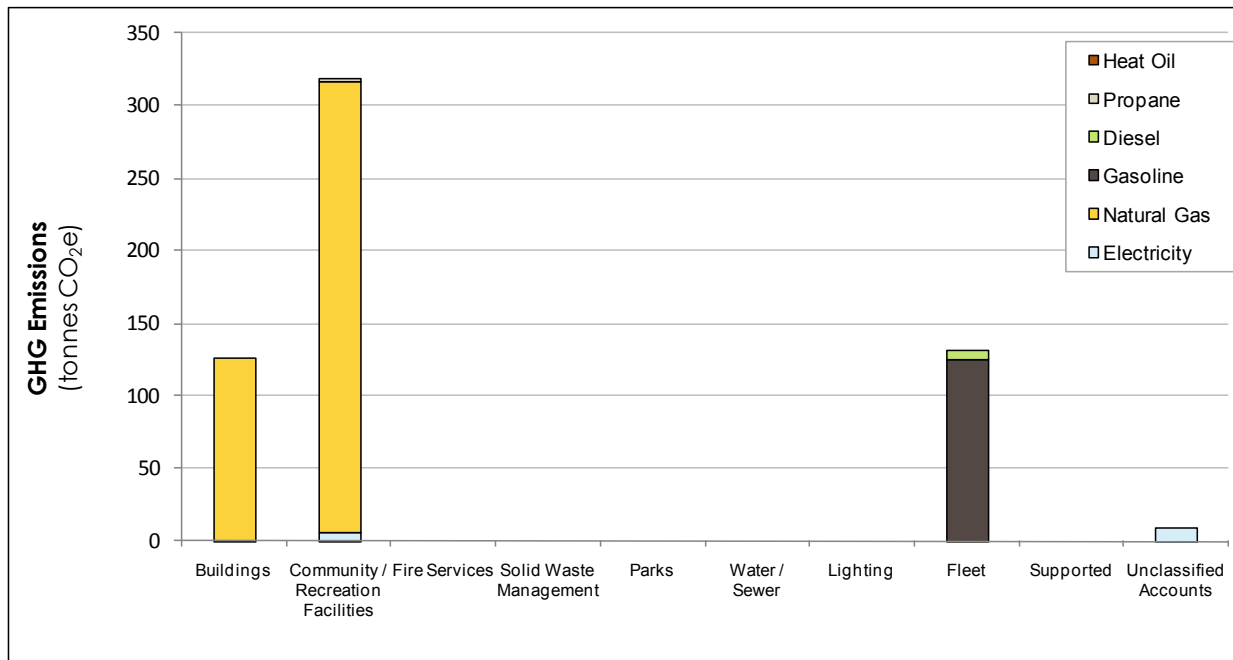


Figure 2: GHG emissions (tonnes CO<sub>2</sub>e) from corporate operations, 2009

## 2.3 Carbon Costs and Rebates

Local governments in BC now have costs associated with carbon. First, for the “carbon tax” associated with the purchase of fossil fuels (e.g. gasoline, diesel, natural gas, propane); most of which is currently returned to local governments through the Climate Action Revenue Incentive Program (commonly referred to as the CARIP rebate). Based on the Regional District’s 2009 energy consumption and GHG emissions, the estimated value of carbon taxes to be paid starting in mid-2012 (at the tax rate of \$30/tonne CO<sub>2</sub>e) is \$15,700.

Secondly, municipalities will be required to obtain offsets to negate any remaining emissions to become carbon neutral starting in 2012. Current speculation is that offsets would cost \$25 per tonne (current pricing by the Pacific Carbon Trust in BC). The estimated cost to buy offsets at the current level of emissions is about \$14,700 annually.

## 3 COMMITMENT TO REDUCE

### 3.1 Current Initiatives

The RDOS has already begun taking action to reduce energy and GHG emissions from corporate operations, including:

- Mechanical and lighting retrofits in Oliver Parks and Recreation facilities
- Mechanical and lighting retrofits in Princeton Parks and Recreation facilities
- Development of an Environmental Purchasing Policy

### 3.2 Corporate Climate Action Policy Statement

The value of the Corporate Climate Action Plan is that it articulates a *commitment* and provides staff with the *mandate* to reduce energy and GHG emissions from operations. A *Corporate Climate Action Policy Statement* will assist the RDOS in maintaining the focus on this commitment and will serve to guide decision-making over the long term.

**Corporate Climate Action Policy Statement:** The RDOS will conduct its operations with the objectives of: (i) improving energy efficiency, (ii) maintaining fiscally responsible operations, and (iii) continually reducing GHG emissions.

These objectives will be achieved by explicitly defining energy efficiency and GHG emission considerations as part of capital spending and operational activities; instilling in Regional District staff a culture of energy conservation; and by reporting on progress and activities.

## 4 REDUCTION MEASURES

### 4.1 Summary of Reduction Measures

In order to become carbon neutral beginning in 2012, the RDOS will need to undertake a combination of: emissions reduction measures and carbon offset purchases for the remaining emissions. Opportunities for reducing emissions were identified through analysis of the corporate inventory, opportunity assessments of key facilities, consultation with staff, and a review of activities in similar jurisdictions. The actions are summarized in Table 3.

Table 3. Summary of emissions reduction measures

Actions	2009 GHG Emissions (tonnes CO <sub>2</sub> e)	Estimated Reductions (tonnes CO <sub>2</sub> e)
<b>Buildings &amp; Infrastructure:</b> <ul style="list-style-type: none"> <li>Support the implementation of recommended energy efficiency measures from Opportunity Assessments</li> <li>Require an evaluation of energy efficiency opportunities for all major capital projects</li> <li>Require an evaluation of alternative energy sources for all major capital projects</li> </ul>	454	10%
<b>Fleet:</b> <ul style="list-style-type: none"> <li>Initiate green fleet management activities</li> <li>Develop an idling reduction policy</li> </ul>	132	10%
<b>Leadership &amp; Engagement:</b> <ul style="list-style-type: none"> <li>Develop an energy efficient purchasing policy</li> <li>Encourage energy efficiency efforts by staff</li> <li>Create a fund to support energy efficiency projects</li> <li>Identify staff responsibilities related to energy and climate action</li> </ul>	n/a	[indirect]
<b>Regional Collaboration:</b> <ul style="list-style-type: none"> <li>Develop relationships with potential program partners</li> <li>Participate in regional building energy performance benchmarking</li> <li>Develop regional partnerships for purchasing and training</li> </ul>	n/a	[indirect]

## 4.2 Buildings & Infrastructure

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Proportion of GHG emissions from buildings and infrastructure in 2009:	78%
2009 GHG emissions from existing buildings and infrastructure:	454 tonnes CO <sub>2</sub> e

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### **ACTION 1:** SUPPORT THE IMPLEMENTATION OF RECOMMENDED ENERGY EFFICIENCY MEASURES FROM OPPORTUNITY ASSESSMENTS

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Walk through building opportunity assessments were conducted for three buildings operated by the Oliver Parks and Recreation Society and two buildings operated by the Princeton Community Recreation Office.

Although the buildings are owned by the Regional District (and are therefore part of the RDOS corporate inventory), the respective organizations operating each community's recreation facilities function somewhat independently, generating most operating revenue and administering capital purchases and projects relatively autonomously. The Regional District Board has oversight of capital budgeting and planning processes for recreational services, and should support these organizations in funding energy retrofit activities.

Each building had its own set of recommended energy efficiency measures. Common recommendations for Oliver facilities include:

- Completion of lighting retrofit projects
- Programmable thermostats
- Weather stripping / air sealing
- Repairs of gas leaks in kitchen facilities

Specific major items unique to individual Oliver buildings include:

- Recommissioning of the solar hot water systems at the Oliver Community Pool
- Variable speed drives for pumps at the Oliver Community Pool

Recommendations for Princeton facilities include:

- Lighting retrofits at both facilities
- Variable speed drives for brine pump / pony motor at Princeton Arena
- Upgrade ice plant control systems at Princeton Arena
- Review operation protocols at Princeton Arena to reflect seasonal usage fluctuations

The recommended set of measures across all the facilities assessed is estimated to cost approximately \$155,000 with a payback period of less than eleven years resulting from the potential energy savings (estimated at 8%). Further details are provided in the *Building Opportunity Assessment Report* completed by Enerfficiency Consulting, which was provided to the RDOS as a separate document from this plan.

## **ACTION 2: REQUIRE AN EVALUATION OF ENERGY EFFICIENCY OPPORTUNITIES FOR ALL MAJOR CAPITAL PROJECTS**

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The BC building code has recently been updated to require greater energy efficiency in new construction. Further improvements to building code requirements are anticipated over the next few years. Developments in technologies and building practices currently allow for the construction of buildings that are more energy efficient than what is required by the building code. Additionally, replacing end of service life equipment provides opportunities to invest in newer technologies that may be more efficient. Maximizing energy efficiency reduces energy costs over the lifetime of the building, and minimizing GHG emissions reduces the carbon liabilities that the RDOS may be responsible for on an annual basis.

Business case development for major renovation and construction projects should include a demonstration of the life cycle cost benefits<sup>2</sup> or triple-bottom analysis<sup>3</sup>. When appropriate, consider payback periods of 10-to-20 years when evaluating energy efficiency measures over the lifetime of the building.

Should the RDOS wish to pursue projects incorporating broader elements of green buildings, third-party rating systems such as LEED (Leadership in Energy and Environmental Design)<sup>4,5</sup> or GreenGlobes<sup>6</sup> may be evaluated to determine whether the public recognition and profile of building to such standards are aligned with the Regional District's objectives for each project.

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<sup>2</sup> Life Cycle Costing considers the total capital and operating costs over the lifetime of the purchase. For example, a more expensive pump that uses less energy than conventional pumps may save more money over its lifetime.

<sup>3</sup>Triple Bottom Line (TBL) methodologies consider how an initiative meets economic, environmental, and social objectives in an integrated evaluation. For example, an energy efficient ventilation system may reduce energy consumption, reducing infrastructure costs and GHG emissions, while also improving indoor air quality and occupant comfort.

<sup>4</sup> The Comox Valley Sustainability Strategy identifies a target of having all new local government buildings over 500 m<sup>2</sup> meeting LEED Silver standards for building performance by 2015, and LEED Gold standards by 2020.

<sup>5</sup> The Province of BC, through the BC Energy Plan, is considering a requirement that all new provincially owned or funded buildings (with over 600m<sup>2</sup> of non-residential floor space) must be LEED Gold certified.

<sup>6</sup> Green Globes website: <http://www.greenglobes.com/about.asp>

### **ACTION 3: REQUIRE AN EVALUATION OF ALTERNATIVE ENERGY SOURCES FOR ALL MAJOR CAPITAL PROJECTS**

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New construction, the replacement of equipment at the end of its service life, and major renovations also represent key opportunities to incorporate alternative energy systems at the lowest possible cost. A technical and financial evaluation of potential alternative energy sources for space and hot water heating can be conducted to account for both the capital and operation costs over an extended period (life cycle costing) prior to approving new construction or major renovations. Alternative energy systems may require higher up-front capital costs, but reduce operating costs (including fuel costs) over the lifetime of the facility.

Evaluation of alternative energy systems may include:

- Siting considerations – e.g., passive solar gains or proximities to potential energy sources and loads;
- Solar hot water systems;
- Heat recovery from refrigeration and other waste heat sources (e.g., ice chillers);
- Geo-exchange systems – using heat pumps and water circulated through an earth pump system to drive heating or cooling systems, and;
- District energy opportunities – in the long-term if future development is concentrated near a “hub” of community facilities.

The Oliver Community Pool has a solar hot water system installed, and that system should be evaluated for potential lessons learned that may be applicable to potential solar installations on other facilities in the future.

### 4.3 Fleet

Proportion of corporate GHG emissions from fleet in 2009:	22%
2009 GHG emissions from fleet:	132 tonnes CO <sub>2</sub> e

#### **ACTION 4: INITIATE GREEN FLEET MANAGEMENT ACTIVITIES**

The corporate fleet consists of 17 vehicles, not including vehicles at the Regional District's four fire departments, and accounts for 22% of corporate GHG emissions. Where appropriate, the RDOS will implement green fleet management activities in the following areas:

Vehicle "right-sizing" and life-cycle costing	<p>Conduct periodic reviews of fleet requirements, including fire protection service vehicles, to guide the purchasing of appropriate vehicles for the required usages. Evaluate:</p> <ul style="list-style-type: none"> <li>• Anticipated usage requirements (e.g. average load capacity, average passenger capacity, average operational terrain).</li> <li>• Life-cycle considerations such as residual costs/values of vehicle being replaced and anticipated capital/maintenance/fuel costs.</li> </ul>
Fuel Data Management	<ul style="list-style-type: none"> <li>• Consistent compilation of comprehensive fuel data allows for thorough analysis of energy and GHG costs while facilitating accurate applications for CARIP rebates. Data for RDOS funded fuel consumption used by Fire Dept vehicles should be included to maximize the CARIP rebate received by the RDOS.</li> </ul>
Trip and Route Planning	<ul style="list-style-type: none"> <li>• Reduce energy and maintenance costs by reducing excess vehicle usage resulting from inefficient travel. Good route planning, trip consolidation, and car-pooling are strategies that should be promoted. Trip reduction strategies such as coordinating work scheduling and video/phone conferencing can be encouraged to minimize unnecessary travel.</li> </ul>
Training and Awareness	<ul style="list-style-type: none"> <li>• Staff education for driving techniques that maximize fuel efficiency can have significant impacts on fuel and maintenance costs. Simple measures such as checking tire pressure before trips and ensuring that vehicles are regularly maintained can save fuel and prolong the lifespan of vehicles.</li> </ul>



Fuel Switching and  
Fuel Additives

Fleet GHG emissions may be lowered by switching to electric or low emission fuels, or improving fuel efficiencies.

- Electric vehicles: electric or hybrid vehicles are tested by vehicle manufacturers for cold-weather climate and typically guarantee engines will start down to 30 degrees Celsius below zero. Hybrid vehicles are currently being used by some municipalities in the region.
  - Fuel additives and after-market equipment: testing and evaluation of items such as vortex exhaust and hydrogen generation systems may improve fuel efficiency or reduce emissions. Sharing experiences with these technologies between local governments can facilitate more informed decisions regarding their adoption.
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## **ACTION 5: DEVELOP AN IDLING REDUCTION POLICY**

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Idling is generally unnecessary, and excessive idling can lead to increased wear and maintenance requirements for fleet vehicles. Idling reduction may be promoted through outreach and signage; however, the effectiveness of this approach could be enhanced through the development of a corporate idling reduction policy. Such a policy could read as follows:

All fleet vehicle operators will not idle for more than 30 seconds after starting the vehicle once the windows are clear, and should be encouraged to turn off the vehicle if stopped for more than 10 seconds unless the vehicle is:

- In traffic;
- In the course of performing a specific duty that requires the vehicle to be left running;
- If the temperature is below -10C, or;
- If doing so would compromise human safety or the mechanical integrity of the vehicle.

Installing LED traffic control and construction beacons on applicable vehicles also reduces the need to run engines in order to power the beacons. While LED lighting equipment may cost more initially, they generally last significantly longer and can reduce fuel consumption.

## 4.4 Leadership and Engagement

### **ACTION 6:** DEVELOP AN ENERGY EFFICIENT PURCHASING POLICY

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Adding robust energy efficiency clauses to the Regional District's Environmental Purchasing Policy will enable the RDOS to consistently consider energy use/GHG emission criteria in addition to financial and quality criteria when making a purchase. There is now a BuySmart Network that has been developed by the Fraser Basin Council to provide support for organizations pursuing these efforts.

The purchasing policy may include:

- Guidelines for selecting appropriate fleet vehicles ("right-sizing"),
- Listing labelling programs to look for (e.g. Energy Star, Environmental Choice),
- Requiring recycled content in paper purchases,
- Setting vehicle standards for contractors,
- Requiring reporting of energy consumption and GHG emissions for contracted services included in the Climate Action Charter, and
- Including energy conservation targets in facility management contracts and possibly providing incentives or requirements for conservation.

The GHG emissions associated with the delivery of core municipal services, whether or not they are delivered by Regional District staff, must be captured in the corporate emissions inventory. To enable the RDOS to capture and monitor the emissions associated with the private delivery of services (e.g. waste hauling, snow removal etc); the Regional District should consider including emissions tracking requirements in all contracts with private sector service providers renewed after January 1, 2012. It is expected that the Province will provide some guidance in this area moving forward.

### **ACTION 7:** ENCOURAGE ENERGY EFFICIENCY EFFORTS BY STAFF

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The staff that operate facilities and equipment have the best understanding of the operating needs and requirements and are frequently the best able to conceive of new ideas to improve efficiencies. This action commits the Regional District to actively pursue these ideas for energy efficiency from staff. Activities might include:

- Promotions or campaigns to capture ideas and opportunities from staff.
- Incentives to encourage and reward staff for their active participation in energy and GHG management (i.e. Energy Incentive Program)

- Recognition of staff members that develop and implement conservation activities by management and the Board.
- Distribution of information about the successes of the Corporate Climate Action Plan, highlighting staff contributions.

Staff may already be pursuing energy efficiency initiatives informally - this action is intended to formalize and elevate the prominence of these activities.

Developing a staff outreach program that fosters a culture of energy conservation can focus on a number of initial strategies to encourage energy efficient behaviours such as reducing paper use, installing workstation controls that shut down systems after a certain amount of time, participating in public initiatives like Earth Hour, and procuring sustainable or energy efficient products. The program need not be an onerous task for staff. Instead, simple tools such as stickers and email prompts reminding staff to shut down workstations and stop idling vehicles, and; easy-to-organize activities such as monthly staff lunch and learns, could form the basis of a corporate outreach program.

## **ACTION 8: CREATE A FUND TO SUPPORT ENERGY EFFICIENCY PROJECTS**

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The Regional District will explore opportunities to create a dedicated fund for energy management activities. Models for funding this activity include:

- Capture the savings from energy efficiency projects to provide a dedicated funding source for future energy management initiatives. The combining of energy savings across department into a single fund would provide a larger pool of resources that can fund future initiatives. It also provides the opportunity for the Regional District to assess which initiatives will provide the greatest reductions from a holistic point of view, and facilitates the exploration of interdepartmental solutions.
- Assign the money received from the provincial CARIP rebate to a reserve fund used for the evaluation and implementation of corporate energy and emissions reduction activities. The CARIP grant is provided to all communities that sign the climate action charter and is equivalent to the amount of carbon tax paid by the signatory local government. The carbon tax was initiated at \$10 per tonne of emissions beginning in 2008, and will increase by \$5 per tonne each July 1. By July 1, 2012, the tax will be \$30 per tonne and the Regional District rebate may be about \$15,700 annually.
- 'Pre-emptively' budget for carbon offsets ahead of 2012 commitment to carbon neutrality and place this money in a reserve fund. The current value of such a model would provide \$14,700 annually based on 2009 emissions.

## ACTION 9: IDENTIFY STAFF RESPONSIBILITIES RELATED TO ENERGY AND CLIMATE ACTION

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### **Plan Owner**

The Regional District will identify a specific Program Owner responsible for coordinating the actions recommended in the Corporate Climate Action Plan. The designated staff person will take ownership of the Plan and will coordinate with staff in each department charged with specific actions to support progress toward reduction targets.

This role may be responsible for:<sup>7</sup>

- Assisting with development of business cases for alternative energy projects,
- Distributing up-to-date case studies and information about energy efficient technologies to Public Works / Engineering / Operations staff,
- Identifying funding opportunities for energy efficiency and alternative energy projects.

### **Staff Responsibilities**

The RDOS will identify to all staff that energy management is a consideration in their job activities. Formalized roles might be valuable to increase transparency. These may include defining departmental responsibilities, communicating reporting requirements for the Board and Committees, and clarifying staff responsibilities to the Plan Owner.

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<sup>7</sup> Given staff capacity in small organizations, an effective means to coordinate and execute these responsibilities may be by establishing a portion of a staff member's responsibility to be an Energy Manager or Climate Action Coordinator who would play a key role in implementing the Corporate Climate Action Plan, and could assist in advancing energy conservation and climate action in the community more broadly. The Regional District may also consider participating, in partnership with School District No. 6, in coordinating and undertaking energy management activities. As public sector organizations, School Districts have legislative requirements under the Greenhouse Gas Reductions Target Act (GHGRTA) to be carbon neutral in their operations by 2010 (see Action 10 for more information on partnerships that may help to advance the Corporate Climate Action Plan).

## 4.5 Regional Collaboration

### **ACTION 10: DEVELOP RELATIONSHIPS WITH POTENTIAL PROGRAM PARTNERS**

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Developing partnerships may provide opportunities to embark on projects that have benefits for multiple users in a more cost effective manner. For example, the Regional District may collaborate with member municipalities and / or the local School District to hire an Energy Manager that will jointly manage energy and emissions in both organizations to help meet respective legislative obligations and voluntary commitments to carbon neutrality. Partnerships may also serve to strengthen local support when considering future community-scale energy projects, including renewable and district energy systems that service major facilities involving a variety of stakeholders.

FortisBC's PowerSense program provides a variety of opportunities to access support and funding for energy efficiency initiatives. Other local governments and public sector organizations that have to fulfill provincial legislative obligations may also be partners for the RDOS, including:

- Member municipalities participating in this project
- Other RDOS communities (e.g., Naramata, Okanagan Falls, etc.)
- Interior Health Authority
- School District No. 67 – Okanagan Skaha
- FortisBC
- Terasen Gas

### **ACTION 11: PARTICIPATE IN REGIONAL BUILDING ENERGY PERFORMANCE BENCHMARKING**

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Regional building energy performance benchmarking provides building operators with a comparison of energy performance with other local government buildings of similar use. As a preliminary example, Figure 3 shows the energy consumption per square foot of building area for a selection of local government buildings. Benchmarking provides an opportunity to learn and understand where opportunities, or problems, might exist.

This task could be undertaken by a Regional Energy Manager (if such a position were to be established), who could work with local government facility operators to identify buildings that are not performing to expected levels and assist in improving building energy performance.

Alternatively, local government staff from across the region expressed interest in creating a staff working group to discuss building energy management issues, share lessons learned and collaborate on opportunities. This working group could coordinate a building energy benchmarking exercise.

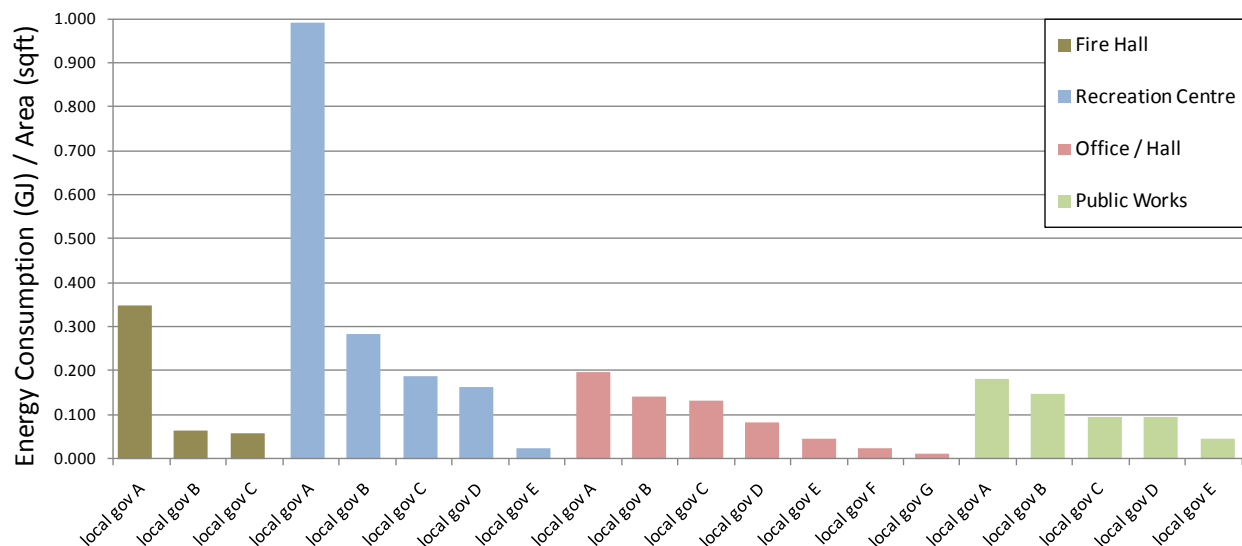


Figure 3: Example of a regional building energy performance benchmarking exercise

## **ACTION 12: DEVELOP REGIONAL PARTNERSHIPS FOR PURCHASING AND TRAINING**

Building on the collaborative approach to energy planning undertaken with this project, the RDOS could partner with member municipalities to make bulk purchases of energy efficient technologies that may be more expensive if purchased individually. This may apply to:

- Hybrid, electric, or more compact efficient vehicles.
- Programmable thermostats, efficient lighting, LED lighting, etc.

This initiative may also be extended to coordinate training among local government staff to bring trainers to the region and reduce the need for staff to travel outside the region.

## 5 IMPLEMENTATION

### 5.1 Corporate GHG Emissions Reduction Target [proposed]

The RDOS will reduce corporate GHG emissions by 10% from 2009 levels by 2020.

These GHG emissions reductions are thought to be achievable through the implementation of recommended building energy efficiency measures, and through the initiation of green fleet management activities.

### 5.2 Purchasing Carbon Offsets

In order to achieve carbon neutrality beginning in 2012, the RDOS will need to purchase carbon offsets for any GHG emissions remaining after undertaking reduction activities. Based on 2009 emission levels and an estimated offset cost of \$25 per tonne, the RDOS will need to spend approximately \$14,700. This figure may change if reduction measures are effective in reducing emissions by the end of 2012.

Carbon offset dollars may not be applied to fund projects that result in the reduction of a local government's own corporate emissions. For example, the funds cannot be used to retrofit local government facilities with solar panels. The Climate Action Secretariat, and the Ministry of Community and Rural Development are currently exploring opportunities for local governments to invest offset dollars in community-scale projects. At the 2010 UBCM Conference, the Province released some initial guidance around the types of credible offset projects that local governments can undertake. The following types of activities are considered potential local offset projects by the Joint Provincial-UBCM Green Communities Committee (GCC):<sup>8</sup>

- Fuel switching for vehicles (e.g., airport fleet, police vehicles, buses);
- Building energy efficiency retrofits (e.g., social housing, residential, commercial, airports);
- Solar hot water retrofits (e.g., social housing, residential, commercial, airports), and;
- Curbside organic waste diversion.

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<sup>8</sup> Source: Presentation delivered at 2010 UBCM Conference and available for download on the BC Climate Action Toolkit website: <http://toolkit.bc.ca/sites/default/files/CarbonOffsets%20-%20UBCMPresentation.pdf>

### 5.3 Personnel Requirements

In order to carry out the recommended actions identified in this plan, the RDOS will need to establish energy management as part of staff roles – either by integrating into existing roles, or establishing a portion of a new role. The types of tasks that will need to be carried out include:

- Contracting services to retrofit buildings
- Promoting energy efficiency among staff
- Developing policies (energy efficient building, using alternative energy, purchasing)
- Conducting lifecycle costing for efficient / alternative technologies
- Evaluating appropriate vehicles
- Coordinating staff training for efficient driving
- Communicating with partners

Table 4 identifies implementation considerations, including staff roles and responsibilities, for the actions included in the Corporate Climate Action Plan.

### 5.4 Monitoring and Reporting

Effective energy management requires quality energy consumption data to inform decision making and prioritization of efforts. Regular reporting of energy consumption at the departmental level allows managers and senior staff to better consider budget implications of energy use and prepare more thorough business cases for energy efficiency initiatives.

Regional District staff should evaluate existing financial reporting structures and explore opportunities to incorporate the reporting of energy consumption and energy costs. Making use of existing reporting mechanisms may help minimize the effort required, while also potentially providing the information in formats that staff are already familiar with.

Senior staff from different departments should be consulted as to what data and presentation would be most suitable for their needs without creating an excessive burden on existing resources. This may require the addition of specific fields to existing financial systems to accommodate the following information from fuel and utility providers: kWh or GJ consumption of electricity, GJ consumption of natural gas, and litre (L) consumption of vehicles fuels (gasoline and diesel).

Staff should consider providing an annual corporate climate action (or energy and emissions management) report to the Board, including a review of all utility accounts to identify areas of concern, comparisons of current energy use to records from previous years, and documentation of reduction initiatives completed each year.



Table 4: Implementation considerations for corporate climate actions

#	Action	Suggested Lead (department or position)	Potential Partners (internal or external)	Estimated Timeframe short=<3 yrs; med=3–5 yrs; long=>5 yrs	Estimated Costs (staff time, capital costs)
<b>BUILDINGS</b>					
1	Support the implementation of recommended energy efficiency measures from Opportunity Assessments	Community Services	Recreation Commissions	Ongoing	Approx. \$155,000 (from report)
2	Require an evaluation of energy efficiency opportunities for all major capital projects	Dept Heads, Board Policy	Local Governments, Construction Industry	Short term (and then ongoing)	Staff time (project specific)
3	Require an evaluation of alternative energy sources for all major capital projects	Dept Heads, Board Policy	Local Governments, Construction Industry	Short term (and then ongoing)	Staff time (project specific)
<b>FLEETS</b>					
4	Initiate green fleet management activities	Finance, Dept Heads	Local Governments	Short to Medium term	Staff time (unknown capital costs)
5	Develop an idling reduction policy	Development Services	Local Governments	Short term	Staff time; minimal capital costs for signage
<b>LEADERSHIP &amp; ENGAGEMENT</b>					
6	Develop an energy efficient purchasing policy	Finance	Local Governments	Short term	Staff time
7	Encourage energy efficiency efforts by staff	SMT	All Managers	Short to Medium term	Staff time
8	Create a fund to support energy efficiency projects	Finance, Board Policy	Granting agencies	Short term	Staff time
9	Identify staff responsibilities related to energy and climate action	SMT	All Managers	Short term	Staff time

## 5.5 Funding

The RDOS will need to secure funding in order to implement the recommended energy conservation measures identified in the *Building Opportunity Assessment Report*, as well as the actions identified in this plan. A number of funding programs exist to support local governments in their efforts to reduce energy and GHG emissions, as outlined in Table 5.

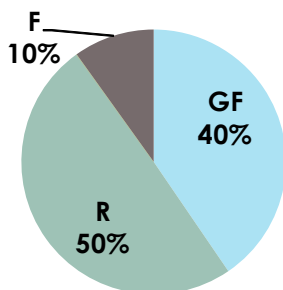
Table 5: Sample funding programs to support the Corporate Climate Action Plan

Program	Key Features
Climate Action Rebate Incentive Program (CARIP)	This provincial initiative will reimburse communities that have signed on to the Climate Action Charter. (NB emissions associated with electricity purchases do not pay carbon tax or receive the rebate, but must still be neutralized through offsets). As an example, Whistler has designated that its rebate will not go to general revenue, but will be put in a dedicated fund.
FortisBC PowerSense	FortisBC has provided partial funding of \$0.10 per annual kWh saved to some municipalities to fund energy efficiency activities in municipal operations.
FortisBC Partners in Efficiency	A FortisBC representative will be assigned to the municipality to regularly review operations and energy consumption to actively identify opportunities for energy efficiency activities and potential funding sources.
FCM Green Municipal Fund	Grants and loans available to support capital projects that reduce energy and GHG emissions. Competitive process with RFPs launched annually to fund projects related to brownfield redevelopment, energy, planning, transportation, waste and water.
Community Works Fund	This funding represents a portion of the transfer of Federal Gas Tax revenue under the New Deal for Cities and Communities. Local governments in British Columbia will receive this benefit through 2010, and projects that are eligible include capacity building projects and environmentally sustainable municipal infrastructure projects.

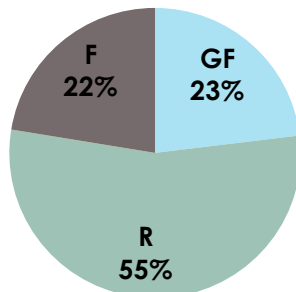
# APPENDIX A: CORPORATE ENERGY & GHG INVENTORY DASHBOARD

## Dashboard Summary: 2009 Year

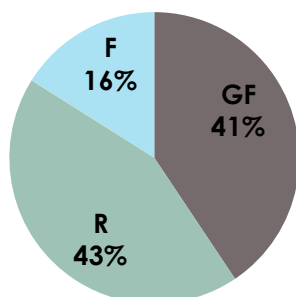
**Energy = 19,982 GJ**



**GHG = 586 tonnes CO<sub>2</sub>e**



**Energy Spending (Approx) = \$341,890**



F = Fleets, GF = General Facilities,  
R = Recreation Centres

Operations Profile	
General Buildings	13
Community and Recreational Facilities	8
Fire Halls	4
Vehicle Fleet & Equipment	17
Electricity Accounts	49
Natural Gas, Propane Accounts	13, 1

Carbon Costs and Rebates	
Estimated cost of offsets in 2012 based on 2009 emissions:	<b>\$14,700</b>
Approximate Carbon Tax Rebate (CARIP Grant) for 2009:	<b>\$7,100</b>
Estimated CARIP Grant in 2012 at current consumption:	<b>\$15,700</b>

Energy and GHG Emissions by Fuel Type				
Fuel Type	Energy Consumption	Energy Units	GHG Emissions (tonnes)	Estimated Cost (\$ / year)
Electricity	2,612,042	kWh	16	\$182,840
Natural Gas	8,549	GJ	436	\$102,590
Propane (facilities)	1,604	L	2	\$1,280
Heating Oil	0	L	0	\$0
Gasoline	52,453	L	125	\$52,450
Diesel	2,325	L	6	\$2,320
Propane (fleet)	512	L	1	\$410
Biodiesel	0	L	0	\$0
<b>Total</b>			<b>586</b>	<b>\$341,890</b>

Top 5 Energy & GHG Contributors (ranked by energy use)		
Facility	Total Energy (GJ)	GHG Emissions (tonnes CO <sub>2</sub> e)
Princeton Arena	3079	87
3855 1ST	2811	5
Oliver Hockey Arena	2076	49
Oliver Pool	1707	71
Riverside Community Centre	1541	56
<b>Total of These Facilities</b>	<b>11,215</b>	<b>267</b>
<b>Total Inventory</b>	<b>19,982</b>	<b>586</b>