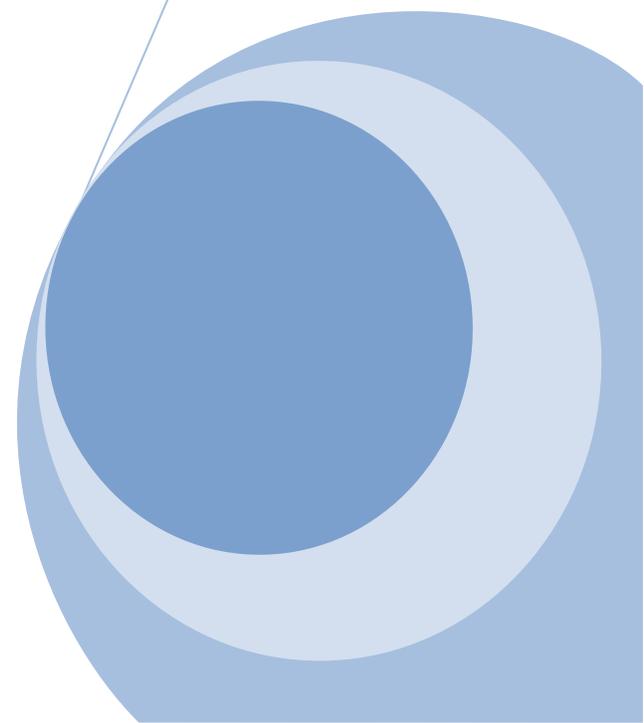


# **Our Path to Carbon Neutrality**

**City of Prince George  
Carbon Neutral Corporate Plan**

**December 2010**



# Executive Summary

The Carbon Neutral Plan (the Plan) supports Council's two voluntary commitments regarding Greenhouse Gas (GHG) emission reductions:

1. A 10 percent corporate GHG reduction from 2002 levels by 2012 through the Federation of Canadian Municipalities' Partners for Climate Protection initiative, and;
2. Achieve carbon neutrality for corporate operations by 2012 through first, reducing GHG emissions and, secondly, purchasing carbon offsets for the remaining GHG emissions.

The Plan first provides background information on the carbon neutral context and the City's current carbon situation, and secondly provides forward looking information on strategies and policies for achieving carbon neutrality. The process in developing the Plan, and the content of the Plan itself, supports achieving Council's commitments by:

1. Providing the context and framework for carbon neutrality;
2. Understanding our current GHG emissions and the trends;
3. Exploring and describing the options for carbon neutral strategies;
4. Assessing the costs and benefits;
5. Identifying and taking advantage of synergies with other programs and initiatives
6. Developing guiding policies and strategies supporting carbon neutrality

Based on 2009 data, that has been loaded into a new Provincial GHG inventory tool called SmartTool, the City's corporate carbon footprint (total GHG emissions) is 8,019 tonnes equivalent CO<sub>2</sub> (eCO<sub>2</sub>). This is 939 tonnes more than reported as the City's 2002 baseline carbon footprint. The change can be attributed to the 2009 addition of GHG emission from electricity and higher energy use for buildings.

The Plan provides a discussion on the financial implications of the Council's voluntary carbon neutral commitment. Under the requirements of the Provincial *Carbon Tax Act* (2008), the Province has designed the local government commitments to be cost-neutral. This is achieved for local governments by refunding back their carbon tax on fuel through the Climate Action Revenue Incentive Program (CARIP). To qualify, local governments must have signed onto the Climate Action Charter and have agreed to become carbon neutral by 2012. Since the carbon tax and refund is adjusted to the cost of purchasing carbon offsets through the Pacific Carbon Trust that means that the CARIP refunds can cover the costs of carbon offsets needed to achieve carbon neutrality. In addition, the City's commitment to carbon neutrality has allowed carbon tax refunds to be collected since July 2008, and provides eligibility to certain grants such as the

# Executive Summary

Community Action on Energy and Emissions (CAEE), which has provided \$75,000 in grants to the City so far.

The Plan also describes the integrated role that departmental strategies have in working to achieve carbon neutrality and the synergies that are created by these various strategies addressing both energy reductions and associated GHG reductions. These include:

1. Downtown District Energy System (DDES);
2. Sustainable Energy Management Plan;
3. E3 Fleet and Green Fleet Strategic Plan, and;
4. Sustainable Procurement Policy.

Through these various strategies the City will continue making excellent progress in reducing energy and GHG emissions. It is estimated that by 2012, the corporate energy and GHG reductions will provide a potential savings of about \$142,000. The DDES alone is expected to meet our 10 percent corporate GHG reduction target.

Estimates, discussed in the Plan, indicate that even with these savings, the corporate carbon footprint may be on the order of 5,300 tonnes. Using the Pacific Carbon Trust price of \$25/tonne for offsets, the City's offset purchases may run about \$133,000 +/- 20%. However, as discussed above, the carbon tax refund through CARIP can cover this cost. As such, the purchasing of offsets to achieve carbon neutrality is not anticipated to have an impact on the City's operating budget.

The Plan describes a number of key strategies and policies to guide the City's work to achieve carbon neutrality. The following highlights a number of key strategies and policies:

1. Energy Efficiency and GHG Reduction Policy.
  - a. Provides broad commitments to energy efficiency and GHG reductions;
  - b. Highlights a leadership role for the City in applying new technologies and renewable energy and sharing the results with sectors in the community;
  - c. Ensures a sustainable approach to energy efficiency considering economic, social and environmental benefits
2. Updating the 2007 Energy and Greenhouse Gas Management Plan.
3. Establishment of an inter-departmental Carbon Neutral Committee to:
  - a. Support the Plan implementation;
  - b. Provide oversight to the Carbon Neutral Reserve Fund;
  - c. Provide recommendations on offset purchases, and;
  - d. Provide an internal awareness and incentive program for energy and GHG reductions in the workplace.

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4. Develop a new corporate GHG reduction target, for Council's consideration, once we have confirmed that the current 10% GHG reduction will be achieved.
5. Accounting for GHG emissions and carbon offsets in all new buildings and facilities.
6. Providing clear budget information related specifically to the carbon neutral commitment.
7. Developing information and awareness strategies that share the corporate experiences and learning's with the broader community in order to support wider adoption of energy and GHG reduction strategies, and;
8. Explore the pros and cons of working with key partners in supporting the promoting and awareness of local offset projects for the voluntary carbon market with the intent to attract additional funds to support northern offset projects.

The Plan also provides for the creation of a Carbon Neutral Reserve Fund (CNRF), which would be initially established with the CARIP carbon tax refunds the City has been receiving since July 2008 and is expected to amount to over \$450,000 by 2012. Establishing the CNRF helps provide a clear administrative mechanism for dealing with the annual finances related to the City's carbon neutral commitments.

Finally, the Plan provides a carbon offset purchasing policy that balances the need for:

1. Offset purchases that meet generally accepted standards;
2. Sound and defensible financial purchase pricing;
3. Sustaining the CNRF, and;
4. Supporting offset projects in northern BC.

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# 1. Introduction and Background

## 1.1. What is Carbon Neutrality

Carbon neutrality, or having a net zero carbon footprint, refers to achieving net zero carbon emissions by balancing a measured amount of carbon released with an equivalent amount sequestered or offset, or buying enough carbon credits to make up the difference. Globally, it is used in the context of carbon dioxide (CO<sub>2</sub>) releasing processes, associated with using fossil fuels (hydrocarbons) in transportation, energy production and industrial processes.

Achieving carbon neutrality is a three step process:

1. Measure the carbon emissions (using a generally accepted standard);
2. Implement various strategies and retrofits to increase efficiencies, reduce energy use and reduce carbon emissions, and;
3. Acquire carbon offsets for the remaining emissions, as required.

In order to ensure long-term carbon neutrality the process is iterative and annual. Therefore, where practical, the organization seeks carbon emission reductions continuously and purchases carbon offsets annually as needed. Purchasing offsets is the last step in the process because there is an implicit emphasis on reducing the emissions already being produced.

A “carbon offset” is an emission reduction credit from another organization’s project that results in less GHG emissions than would otherwise occur. Carbon offsets are typically measured in tonnes of equivalent CO<sub>2</sub> (or 'eCO<sub>2</sub>') and are bought and sold through a number of international brokers, online retailers, and trading platforms. Typical offset projects include renewable energy such as wind farms, biomass energy or hydro-electric dams, energy efficiency projects capturing GHGs or sequestration projects such as afforestation.

An example of an offset project might be a wind energy project. The wind energy company benefits because the carbon offsets it sells make such projects more economically viable. The buyers of the offsets benefit because they can claim that their purchase resulted in new non-polluting energy, which they can use to mitigate their own greenhouse gas emissions. The buyers may also save money as it may be less expensive for them to purchase offsets than to eliminate their own emissions.

There are two different markets interested in carbon offsets: the regulatory market and the voluntary market. In jurisdictions where carbon tax or cap-and-trade regulations are in place, the market tends to respond with relatively high prices for offsets (\$15-\$25/tonne) if the emissions regulations are relatively stringent. The voluntary offset market is a much smaller market, relying on various changeable motivations from companies, agencies, non-government organizations, and individuals and this means offset prices can fluctuate

significantly. The share of the regulatory offset market worldwide in 2006 was about \$5.5 billion, whereas the 2008 global voluntary offset market accounted for about \$708 million.

For the City of Prince George, as with other local governments, achieving carbon neutrality first means knowing what our energy use and greenhouse gas (GHG) emissions are. This includes all of the buildings, facilities (such as ice-rinks, swimming pools, civic centers, street lights, utility pumping stations and treatment centers) and vehicles used for operating and maintaining the city but also those used in construction, including equipment contracted by the City. Second, it means reducing our energy use and GHG emissions as much as possible through various techniques, retrofits and strategies as discussed in more detail in later sections. Third, it will mean purchasing carbon offsets for the remaining carbon footprint from our corporate operations.

## **1.2. The Link Between Carbon Neutrality and Energy**

Reducing GHG emissions (or reducing the carbon footprint) is substantially linked with energy reduction, particularly oil/gas/coal (hydrocarbons) derived energy. In relative terms, hydro-electricity in BC has a very low carbon footprint; however, it is not carbon neutral, particularly when we account for that portion of BC's imported electricity that is derived from coal or other hydrocarbon sources. Therefore, much of the strategies and actions related to GHG reductions are about energy reduction, energy efficiency, green energy or renewable energy (each of these terms often used interchangeably).

This linkage between carbon neutrality and energy will no doubt prove beneficial in moving towards carbon neutrality corporately and reducing GHG emissions in the community (which is not the focus of this report). In the realm of media-focused climate change science, mitigation strategies and international debates over protocols and regulatory frameworks, a focus on energy programs can help greatly in gaining momentum and support.

In addition, the focus on energy programs as a focus for climate change mitigation addresses the need to prepare for future rising energy prices. Using energy wisely and converting to more sustainable energy sources is a corner-stone of sustainability since we all need power in our homes, businesses and industries. Our relatively low energy costs, compared to many other countries, means we tend to use energy less efficiently, so we waste energy. Over time, our supply of hydro-electricity, hydrocarbon fuels and other conventional sources of energy will not be able to keep up with our demands. This will eventually lead to shortages, high energy costs, or energy supply instability. This will have ripple effects through all aspects of City corporation as well as the broader community. By working now on a combination of efforts, we can extend our current supply of energy and smooth the transition to other energy technologies and sources.

The City's corporate efforts to reduce energy, apply renewable energy technology and reduce GHGs provide examples that can be demonstrated into the community. This leadership role is important because it addresses the need for practical and measurable examples, and demonstration can help address the reluctance in adopting new technologies.

### 1.3. Public Sector Legislative and Policy Context

#### 1.3.1. Provincial Legislation and Policies for Climate Action in BC

In 2007, the Province of BC passed the *Greenhouse Gas Reductions Target Act* (GGRTA), committing the Province (includes Ministries, Crown Corporations, Schools and Public Service Organizations) to reducing its greenhouse gas emissions by 33 per cent below 2007 levels by 2020 and 80 per cent by 2050. To ensure the Province meets those legislated targets they are using 2012 and 2016 for emission reduction benchmarks of 6 per cent and 18 per cent, respectively.

Subsequently, the Province released its **Climate Action Plan** in 2008 and the **Climate Action for the 21<sup>st</sup> Century** in 2009. In June 2010, Bill 17, the *BC Clean Energy Act* was passed to enable low carbon energy production in BC.

The Province passed additional legislation in 2008, providing additional tools for local governments to address energy and GHG reductions. These include: Bill 10 *Housing Statutes Amendment Act (Green Building Code)* and Bill 27 *Local Government (Green Communities) Statutes Amendment Act*. Bill 27 provides provisions for:

1. Requiring targets, policies and actions in Official Community Plans (OCP);
2. Expanding authorities under the Development Cost Charge provisions;
3. New Development Permit Areas designations, and;
4. Greater authority to vary off-street parking and new cash in-lieu reserve fund.

In 2008, the *BC Carbon Tax Act* came into effect at \$10/tonne of eCO<sub>2</sub> which works out to 2.4 cents per litre of gas or \$0.50/Gj of natural gas. The tax is designed to increase by \$5 per tonne annually until it reaches \$30 per tonne in 2012. The phased approach is designed to allow time for consumers, businesses and governments to adjust their energy consumption patterns to less carbon-intense means. BC is relatively unique amongst jurisdictions elsewhere in the world in establishing a carbon tax in order to create a financial incentive to reduce GHGs. The other approach, more commonly used, is establishing caps for GHG emissions and protocols allowing for the trading of unused emission allocations or purchasing credits from carbon-reduction projects commonly referred to as "carbon offsets".

In order to create a mechanism that delivers quality GHG offsets to Provincial agencies, communities and other sectors, the Province established the **Pacific Carbon Trust (PCT)**. The PCT has a dual role of purchasing offsets from eligible BC-based projects and selling

offsets to businesses, the provincial government, public service organizations and others meeting their carbon neutral commitments. Local governments are not required to purchase their offsets from the PCT.

### **1.3.2. Local Government Climate Change Regulatory Context**

#### **1.3.2.1. The Climate Action Charter**

In September 2007, at the Union of BC Municipalities (UBCM) Conference, sixty-two local governments, including the City of Prince George, signed on to the British Columbia Climate Action Charter. As of July 2009, 175 communities have signed on to the Charter agreeing to the following three goals:

- a. Being carbon neutral in respect of their operations by 2012, recognizing that solid waste facilities regulated under the *Environmental Management Act* are not included in operations for the purpose of this Charter;
- b. Measuring and reporting on their community's GHG emissions profile, and;
- c. Creating complete, compact, more energy efficient rural and urban communities.

The Province has provided several guiding documents and tools to help local government track and report on their carbon footprint and to achieve their carbon neutrality. The Province has defined what is included (the "boundaries") for a local government's carbon footprint (carbon accounting) calculation. The boundaries are based on the traditional services provided by the local government. Emissions are counted from transportation and space and hot water heating and other electricity use (lights, computers, pumps, etc.). Traditional services include:

- Fire Protection
- Solid waste collection and diversion
- Arts, recreation and cultural services
- Road and traffic operations
- Wastewater
- Storm water
- Drinking water
- Governance, administration and planning.
- Contracted services (emissions) for any of the above traditional services.

#### **1.3.2.2. Partners for Climate Protection**

The Federation of Canadian Municipalities (FCM) established a network of Canadian municipal governments that have committed to reducing greenhouse gases and acting on climate change called the Partners for Climate Protection (PCP). PCP is based on a five milestone framework used to guide municipalities to reduce GHG emissions corporately as well as community-wide. The five milestone process

is a performance-based model which remains flexible; milestones do not need to be completed in sequential order. The five milestones are:

1. Creating a greenhouse gas emissions inventory and forecast;
2. Setting an emissions reductions target;
3. Developing a local action plan;
4. Implementing the local action plan or a set of activities; and
5. Monitoring progress and reporting results.

### **1.3.2.3. Green Communities Framework**

Key policies and protocols for Local Governments' options regarding qualified GHG reduction projects and carbon offsets is being delivered by the Joint Provincial-UBCM Green Communities Committee (GCC). The GCC has provided a "Framework" which balances the interests of local governments in keeping investments in GHG reduction projects local and practical, with the need for credibility. The framework is a work in progress and GCC will continue to work with local governments and seek their feedback over the coming months to refine the approach.

#### **The GCC Framework:**

Based on accepted offset criteria, the framework proposes three options for local governments to achieve carbon neutrality:

1. Purchasing offsets from a list of credible providers
2. Undertaking a GCC supported local project
3. Developing an alternative local government project

**The first option** enables local governments to offset their corporate emission by purchasing offsets from a credible offset provider. GCC is developing a list of approved offset providers that meet a similar standard in order to provide assurance to local governments that they are investing in credible offsets. The GCC is also exploring whether offset providers could "package" their offsets on a local or regional basis so that local governments could know that their offsets dollars were being invested either locally or regionally.

**Option two** of the framework provides opportunities for local governments to select from a list of measurable GHG reduction projects, established by GCC, which could be undertaken in their communities to counterbalance their remaining corporate emissions. This option addresses local governments' interest in investing locally, yet ensures that the GHG reductions from these projects are real and measurable and that the project adheres to criteria established by GCC. These projects would be outside of the local governments' corporate (or traditional services) boundary and they would, in most cases, be a more expensive option than purchasing offsets from

existing offset projects. The GCC has identified the following projects that would meet the intent of Option two projects:

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

**Option three** would enable local governments to undertake their own, credible GHG reduction projects, which are not on the GCC supported list (Option two projects) of GHG reduction projects, to offset remaining emissions. These projects would also have to be outside of the local governments' corporate (or traditional services) boundary and comply with the same requirements for third party validation and verification. An example of an Option three project would be a District Energy System.

While these projects would tend to be a more expensive option than purchasing offsets from existing projects, these projects could have the benefit of keeping investments in GHG reduction projects local and could also result in broader community benefits beyond the environmental benefits of the GHG reductions (e.g. foster green jobs and technological innovation, conserve energy, reduce operating costs, enhance community sustainability, raise public awareness regarding climate change).

The GCC is in early stages of the development of the framework. As such, clarifications and details on the different options are still needed. The City is working collaboratively with Provincial staff working on the Framework in order to ensure the Framework works for projects such as our Downtown District Energy System (DDES).

## 2. City of Prince George's Commitments on Energy and Greenhouse Gas Reductions

In 2002, the City of Prince George signed onto the FCM's **Partners for Climate Protection** (PCP) program and by 2005 the City had completed Milestone One with the Energy and Greenhouse Gas Emissions Inventory and Reduction Target report prepared by ICLEI. In 2007, the City completed Milestones Two and Three with the completion of the City of Prince George Energy and Greenhouse Gas Management Plan, prepared by Sheltair, and the adoption of targets and movement towards supporting the implementation of the management plan recommendations. The PCP targets approved by Council are to reduce

corporate GHG emissions by 10% from 2002 levels by 2012, and to reduce community GHG emissions by 2% from 2002 levels by 2012. The City is currently in Milestone 4 stage, which is implementing our Energy and Greenhouse Gas Management Plan. The City is anticipating undertaking Milestone 5 in 2011 which is the development and implementation of its monitoring process and reporting on the results from Milestone 4.

In 2007, Council signed on to the **BC Climate Action Charter**, voluntarily committing the City of Prince George to become carbon neutral in its operations by 2012. In exchange for this commitment, the Province began the Climate Action Revenue Incentive Program (CARIP) in 2008, reimbursing local governments their corporate carbon tax paid on fuel charges. In addition, local governments signing onto the Charter were eligible to access grant funding through the Community Action on Energy and Emissions (CAEE) fund.

### **3. Setting the Context – Higher Level Corporate Direction**

#### **3.1. City of Prince George Strategic Plan**

The Strategic Plan was prepared and approved by Council in 2009 to form a foundation for community discussion during development of the myPG sustainability plan. It expresses City Council's focus areas and priority projects and is expected to guide the strategic direction of the City, stimulate ideas and encourage community conversations. The Strategic Plan is meant to evolve in conjunction with the myPG project. Administrative work plans and budgets are developed to ensure alignment with the Strategic Plan vision, objectives and priorities.

With respect to energy and greenhouse gas reduction, the Strategic Plan looks to Prince George to become, as part of its long-term vision for the city, a leader in renewable energy research and application. The plan identifies the development of the district energy system as a key project within the strategic focus area "Taking Care of our Air, Water and Land Resources".

#### **3.2. Integrated Community Sustainability Plan – myPG**

The *myPG* sustainability plan, approved by Council June 21, 2010, provides a broad community derived vision for Prince George out to 2040 and beyond. Specifically related to energy and greenhouse gas reduction, *myPG* provides the following high level strategic goals. Table 1 below also highlights those related actions identified in the myPG plan that could assist with the City reducing its own corporate energy and emissions:

Table 1: myPG Goals Related to Energy and GHG Reduction

Goal Theme	Goal Description	City and Partner Actions
Green City and Green Practices	Be a green city with healthy habitat and forests, and a strong environmental consciousness, led by government and local organizations that demonstrates sustainable practices	<ul style="list-style-type: none"> <li>• Leverage strong corporate greening initiatives (e.g. City E3 Fleet) to inform cost-saving private sector initiatives</li> </ul>
Green Energy	Be a leader in green energy	<ul style="list-style-type: none"> <li>• Through growth, target densities that are high enough to support district energy and other desired facilities/amenities</li> <li>• Investigate potential for district energy systems, especially in mixed-use locations</li> <li>• Investigate all renewable energy options, including solar, biomass and geothermal</li> <li>• Accelerate implementation of energy efficiency and renewable energy initiatives in order to be prepared before energy prices rise significantly</li> <li>• Retrofit facilities to capture and re-use waste energy</li> </ul>
Reduce Carbon Emissions and Adapt to Climate Change	Reduce carbon and dependence on fossil fuels, and be prepared for climate change	<ul style="list-style-type: none"> <li>• Continue to invest in climate mitigation and adaptation strategy development and implementation</li> <li>• Develop a local carbon offset trade market to support local offset projects</li> </ul>
Diverse Economy	Prince George is a sustainable knowledge-based resource economy connected to the world, able to respond well to changing global trends.	<ul style="list-style-type: none"> <li>• Build on the success of existing initiatives (e.g. Northern Bio-Energy Partnership) to expand the bio-energy sector</li> </ul>

### **3.3. City of Prince George Official Community Plan**

The 2001 City of Prince George Official Community Plan (OCP) is currently undergoing a major update process, expected to be completed early in 2011. Once approved, the OCP is a bylaw of the City that provides high level direction and policies that guide land use. The OCP has a role to play in climate change and energy implicitly through land use strategies and explicitly through GHG reduction targets, objectives and policies related to climate change and energy use. The OCP is focused on community level development, redevelopment, growth strategies and associated public utility infrastructure and public services. However, there may be implications for the City corporation, particularly in development or redevelopment of municipally owned lands, infrastructure development such as roads, and where public services are located.

### **3.4. City of Prince George Energy and Greenhouse Gas Management Plan**

In 2007, the City Council approved the Energy and Greenhouse Gas Management Plan. Building from previous work on determining the City's and community's GHG emissions, the plan provides recommended initiatives and associated actions for both the City corporate operations and community GHG reductions. The recommended initiatives for the City corporate operations include:

- Implement Phase 1 of the community energy system (*note: currently referred to as the Downtown District Energy System*);
- Evaluate and implement energy reduction opportunities for civic buildings;
- Build all new municipal buildings to high energy efficiency standards;
- Implement a Consolidated Fleet Energy Management Strategy;
- Continue to evaluate and implement bio-based fuels;
- Incorporate energy conservation and GHG reduction in utility operations;
- Advance energy efficiency through municipal practices and "in-reach", and;
- Promote energy efficiency in purchasing decisions.

Since the completion of the Energy and Greenhouse Management Plan in 2007, several corporate initiatives and actions have advanced, including:

- Energy Managers have been employed by the City for both corporate and community roles.
- A micro-turbine was installed at the waste-water treatment plant, utilizing biogas to generate electricity for the plant;
- The City has achieved a Silver rating in its E3 Fleet initiatives;
- The Downtown District Energy System was recently approved and is expected to be operational in 2011, and;
- Numerous retrofits in civic buildings and facilities have resulted in costs savings and reduced GHG emissions.

## 4. Measuring our Energy and Greenhouse Gas Emissions

### 4.1. Introduction

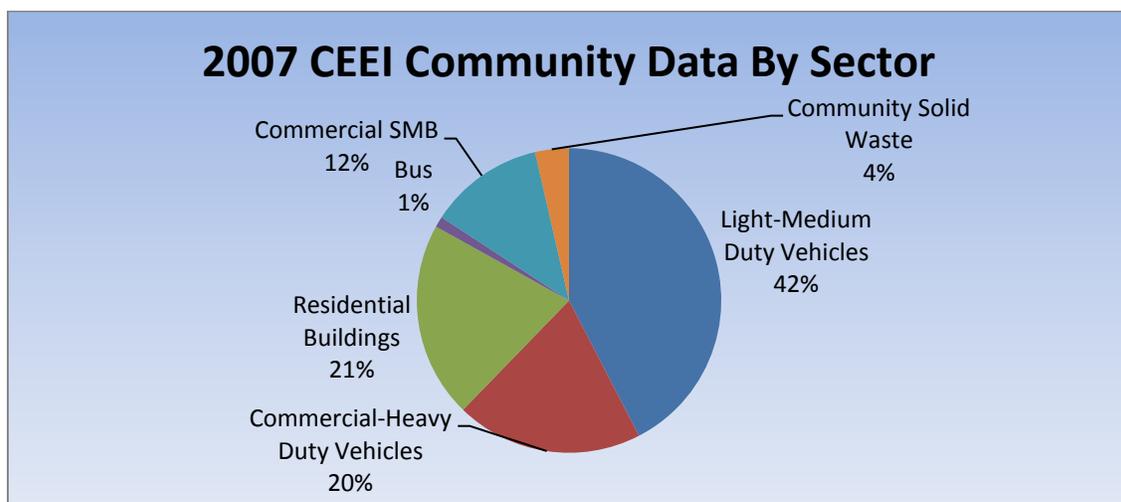
There are several initiatives and tools available for local governments' to understand energy use and GHG emissions (carbon footprint). The Provincial government has been providing local governments with their Community Energy and Emissions Inventory (CEEI) Reports covering 2005 and 2007. These inventories account for energy use and associated GHG emissions from all on-road transportation, and from residential and commercial buildings. Where available, large industry inventories are provided as well as contributions from community solid waste. However, City corporate inventory data is not separated out from the overall community data. Therefore, local governments use other means to establish their corporate energy use and GHG emissions.

The City of Prince George, through its Corporate Energy Manager program and the E3 Fleet program, has been tracking energy use for City operations and has also participated in Provincial pilot testing of an energy and GHG emission reporting tool called SmartTool. As such, the City has a good understanding of its corporate energy use and GHG emissions.

### 4.2. Community Energy and Greenhouse Gas Emissions

While the Carbon Neutral strategy is focused on corporate GHG emissions, it is important to put the City's carbon footprint in context with the larger community.

According to the latest CEEI Report covering 2007 energy use data, the overall estimated energy use for the community (excluding large industry) is about 12.7 million GJ which translates to about 659,000 tonnes of eCO<sub>2</sub>.



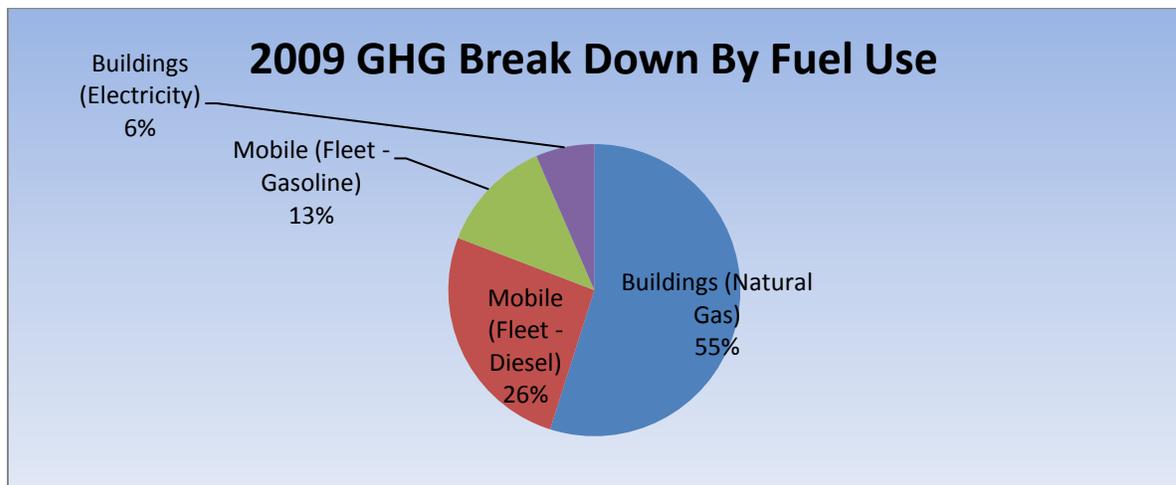
### 4.3. Corporate Energy and Greenhouse Gas Emissions

While inventory data from more recent years is now available, the 2002 inventory data is provided here because this is the baseline year for the City's Partners for Climate Protection (PCP) targets. According to the City's 2005 Energy and Green House Gas Emission Inventory and Reduction Targets report, the 2002 baseline corporate GHG emissions were 7,081 tonnes eCO<sub>2</sub>.

The 156,327 GJ of energy used in 2002 equated to about \$3.2 million in energy costs. The 2002 data indicates that buildings (space and water heating, electricity) account for about 63 percent of the total City's carbon footprint, but about 48 percent of the total energy costs.

As part of the City's collaborative work with the Province on various climate action initiatives, the City has been involved in testing a new GHG emissions inventory reporting tool called "SmartTool". City energy use, which includes electricity and natural gas for buildings and facilities, and gasoline and diesel use for the City Fleet and personal vehicles used for City work, has been added to the SmartTool using 2009 data and indicates a City corporate carbon footprint of 8,019 tonnes eCO<sub>2</sub>. The chart and table 2 below shows the breakdown of GHG emissions by fuel use.

The higher 2009 carbon footprint from 2002 can be roughly accounted for by the recent inclusion of the GHG factors associated with electricity use (not included in 2002 inventories) and by increased energy use in civic buildings. In order to properly compare 2009 and 2002 carbon footprints, 422 tonnes eCO<sub>2</sub> should be added to the 2002 City carbon footprint to account for the associated electricity use. This would bring the 2002 baseline carbon footprint to 7,503<sup>1</sup>.



<sup>1</sup> This adjustment is relevant to the City's 10 percent corporate reduction through the Partners for Climate Protection target to be achieved in 2012.

Table 2: Energy use conversion to GHG emissions (based on SmartTool)

Emission	Measure	Quantity	Greenhouse Gas in Tonnes			
			CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	eCO <sub>2</sub> *
Buildings (Natural Gas)	GJ	88,160	4,408	0.09	0.08	4,435
Buildings (Electricity)	GJ	72,759	524	0.00	0.00	524
Fleet Vehicles (Diesel and gas)	Litres	1,227,586	3,017	0.15	0.13	3,060
<b>TOTAL</b>						<b>8,019</b>

\* Each greenhouse gas has been converted to a standard measurement (eCO<sub>2</sub>) by multiplying its emissions by its global warming potential (GWP). The GWP of carbon dioxide (CO<sub>2</sub>) is “1”, methane (CH<sub>4</sub>) is “21” and nitrous oxide (N<sub>2</sub>O) is “310”.

The 2009 data is considered to be nearly a complete inventory of the City’s corporate emissions. The missing data for 2009, which will be included in subsequent inventories, includes the emissions from contracted services, as defined by the Provincial policy defining the traditional services of local government and about twenty small facility sites (e.g. pump stations). It is anticipated, that once these additions are made to future inventories, including the 2012 inventory year, this may add an additional 5 percent (approximately 400 tonnes) to the City’s corporate carbon footprint.

## 5. Financial Considerations

The Province has implemented a carbon reduction strategy that is designed to be cost-neutral for local government. As discussed in more detail in this section, this is achieved through:

- The carbon tax charges on fuel used by a local government that is designed to motivate fuel and GHG reductions;
- The subsequent refund to local governments of their carbon tax through the Province’s Climate Action Revenue Incentive Program (CARIP), and;
- The ability to cover local government costs of carbon offset purchases through the CARIP carbon tax refund in order to achieve carbon neutrality and also support GHG reduction projects in BC.

Through the Province’s *Carbon Tax Act* (2008), the carbon tax (see Section 1.3.1) on fuel, instituted in July 2008 at \$10/tonnes eCO<sub>2</sub>, is set to increase annually to its \$30/tonne target by July 2012 with the following schedule:

July 1, 2008	July 1, 2009	July 1, 2010	July 1 2011	July 1 2012
\$10/tonne	\$15/tonne	\$20/tonne	\$25/tonne	\$30/tonne
<b>Conversion to cost/litre gasoline</b>				
2.34 cents	3.51 cents	4.68 cents	5.85 cents	7.02 cents
<b>Conversion to cost/litre diesel</b>				
2.69 cents	4.04 cents	5.38 cents	6.73 cents	8.07 cents
<b>Conversion to cost/Gigajoule of natural gas</b>				
49.66 cents	74.49 cents	99.32 cents	\$1.24	\$1.49

The BC *Carbon Tax Act* (2008) requires that the carbon tax be revenue neutral to the Province, which is addressed, in the case of local government’s carbon tax on fuels, by the Climate Action Revenue Incentive Program (CARIP). To be eligible to receive CARIP refunds, a local government must be a signatory to the Climate Action Charter, agreeing to become carbon neutral in its corporate operations by 2012, and must report annually on their progress to reduce GHG emissions.

CARIP payments to the City started for the period covering July 1 to December 31, 2008, and the first full year CARIP payment was received for the 2009 year. Payments are received in the fiscal year following the reporting year once the total fuel use is calculated and a report is forwarded to the Province. Up to and including the 2009 fiscal, the City has received about \$107,000 in CARIP refunds which represents the carbon tax on fuel the City has spent between

July 2008 and December 2009. As the carbon tax increases by \$5/tonne each year to 2012, the costs and the associated CARIP refund will also increase. It is estimated that by December 2012, the City will have collected back over \$450,000<sup>2</sup> in carbon tax. By the Province providing CARIP refunds well in advance of when a local government begins to purchase their carbon offset, this funding provides a significant boost to support fuel and GHG strategies and carbon offset purchases. Since the CARIP refunds are tied to the City's voluntary commitments for carbon neutrality by 2012, as part of the City's Carbon Neutral Plan, (See Section 5.7.2), these funds are targeted to support energy and GHG reduction strategies that will also reduce the City's fuel costs.

City corporate strategies that reduce our fuel consumption and GHG emissions will reduce both our carbon tax and our carbon offset purchases. For example, the City's Downtown District Energy System is expected to reduce natural gas use by approximately 31,000 GJ and by approximately 1,600 tonnes eCO<sub>2</sub> annually. This has a potential to reduce carbon tax and carbon offset purchases annually by a combined \$86,000 based on estimated 2012 figures. In addition, the reduced fuel purchasing costs associated with E3 Fleet strategies and the Sustainable Energy Management Plan (SEMP) covering buildings and facilities will generate additional savings.

City staff will be conducting further analysis related to the 20 percent energy intensity reduction goal for building and facilities through the SEMP. As well, City staff will be conducting further analysis, through the Green Fleet Strategic Plan, in order to determine estimates and goals for fleet vehicle fuel savings that could translate into less carbon tax and carbon offset purchases.

Given the potential range of fuel savings and emission reductions through these corporate initiatives, the estimated reductions in corporate carbon tax and carbon offset purchases<sup>3</sup> are provided as approximate (See Table 3). Based on expected 2012 figures, through anticipated fuel and energy reductions from 2009 to 2012, the City has a potential to have lowered gas tax charges and carbon offset purchases by about \$142,000.

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<sup>2</sup> This figure represents the reduced carbon tax and associated refund coming from the City's Downtown District Energy System.

<sup>3</sup> Note that this discussion on financial considerations covers just climate change associated costs including carbon tax and carbon offsets. There are other revenue benefits to energy and GHG emission reductions such as fuel cost savings, capital costs savings, and maintenance costs savings.

Table 3: Estimated Potential Reductions and Savings

Estimated Potential Reductions and Savings					
Strategy (% reduction est.)	Fuel Reduction	Carbon Tax Reduction*	eCO2 (tonnes)	Carbon Offset Cost Reduction**	Total
<b>DDES</b>	31,000 GJ	\$46,000	1,600	\$40,000	<b>\$86,000</b>
<b>Vehicle Fleet***:</b>					
• Gasoline (5% )	18,000 l	\$1,000	43	\$1,000	<b>\$7,500</b>
• Diesel (5%)	38,000 l	\$3,000	102	\$2,500	
<b>Buildings:</b>					
• Natural gas (20%)	17,000 GJ	\$25,000	850	\$21,000	
• Electricity (20%)	14,000 GJ	n/a	101	\$2,500	<b>\$48,500</b>
<b>Total Potential Estimated Savings</b>					<b>\$142,000</b>

\* Based on 2012 figures for the whole fiscal year.

\*\*Based on \$25/tonne

\*\*\*Specific goal or target breakdowns still to be defined through the Green Fleet Strategic plan– these are provided as estimates.

Note: Based on:  
 1GJ natural gas approx. = 0.05 tonne eCO2  
 1 litre diesel approx. = 0.002697 tonne eCO2  
 1 litre gasoline approx. = 0.002391 tonne eCO2  
 1 GJ electricity approx. = 0.0072 tonne eCO2

Additional GHG reductions, and associated reduced offset costs, may be retained from the City’s DDES where non-civic buildings are hooked up, but the customers do not claim the GHG reductions. City staff are currently working with Provincial staff linked into the work of the Green Communities Committee to clarify the protocols around this (See Section 1.3.2).

While the City will be able to make significant savings in carbon tax and reducing our carbon footprint, there will still be a need to purchase offsets associated with the City’s carbon neutral commitments. The City’s current estimated carbon footprint of 8,019 tonnes is estimated to be reduced to 5,300 tonnes by 2012, after the potential GHG emission reductions of 2,700 tonnes are realized as described in Table 1. At the \$25/tonne offset price offered through the Pacific Carbon Trust a 5,300 tonne offset purchase would be \$133,000. Offsets for 2012 would be made in early 2013 once the City has calculated its actual carbon footprint and knows its offset quantity.

Analysis indicates that the City’s purchase of offsets (estimated at approximately \$133,000 +/- 20%) can be covered, within a margin of +/- 10 percent, by the annual CARIP (carbon tax) refund supporting the Province’s intended cost-neutrality. The use of CARIP funds to support

offset purchases when needed is described in Section 5.7.2 covering the establishment of a Carbon Neutral Reserve Fund.

In addition, it is important to note that energy reductions that are derived from plant improvements incur an upfront capital costs that can be three to five times higher than the resulting yearly energy savings. Energy retrofits that include more expensive renewable energy technologies can mean that the payback period for the capital investment can be much longer than five years. These energy savings, capital investments and payback periods are key added considerations in making decisions about energy efficiency improvements.

Finally, it is important to reiterate that the City of Prince George's commitment to become carbon neutral by 2012 is voluntary through its signing the BC Climate Action Charter in 2007. The decision to make and continue this commitment allows the City to receive carbon tax refunds through the CARIP since 2008, and fulfills certain eligibility requirements for climate action and energy reduction grants and awards.

## **6. Our Plan to Achieve Carbon Neutrality**

### **6.1. Setting the Context for the Carbon Neutral Plan**

The Carbon Neutral Plan provides an over-arching document for the City's policies and strategies for reducing corporate greenhouse gases and reaching our voluntary carbon neutral commitment for 2012 and beyond. However, the Carbon Neutral Plan is influenced by and takes direction from Council's approved GHG reduction targets and Council's Strategic Plan, by Prince George's Integrated Community Sustainability Plan - myPG, and other related higher level policies and direction from Council.

The Carbon Neutral Plan provides a discussion of the collection of related strategies, plans and policies which are the key implementation tools for achieving corporate carbon neutrality by 2012.

### **6.2. Energy Efficiency and GHG Reduction Policy**

Through the adoption of this Carbon Neutral Plan, the following City of Prince George Energy Efficiency and GHG Reduction Policy is also approved. This policy is meant to serve as broad corporate guidance in the development, implementation and review of programs, procedures and initiatives for energy conservation, and GHG reduction through all the Divisions and Departments of the organization.

## **POLICY:**

*The City is committed to using energy resources to their highest economic efficiency while reducing consumption through wise and cost-effective energy management and the introduction of appropriate energy efficiency and renewable energy procedures and technologies. The City will strive to identify environmental and social co-benefits through economically efficient use of energy resources. Through the corporate focus, the City of Prince George will lead and inspire actions in the community to reduce the carbon footprint of residential, commercial and small-medium sized business sectors, conserve energy and move towards renewable energy technologies where practical and cost effective.*

*In achieving this goal the corporation will:*

- Maintain a Sustainable Energy Management Plan covering City buildings and facilities, that considers all targets set by City Council, and Provincial and Federal legislation or regulation and continually monitor adherence to those targets;*
- Develop and implement strategies to reduce energy use and greenhouse gas emissions and respond to climate change issues, that will lower operating costs and demonstrates the City's responsible use of energy;*
- Partner with industry, the commercial sector and the public to improve energy conservation and use of renewable energy technologies, where practical and cost effective and where co-benefits have been identified;*
- Explore and develop economically viable alternative or renewable fuel or energy sources using full life-cycle cost comparisons and considering environmental and social co-benefits;*
- Ensure, under the Sustainable Procurement Policy, supplier agreements with the City include provisions for reduced energy use and emissions, particularly for supplying traditional services for the City.*
- Continually seek out new and innovative ways to improve our energy efficiency performance and meet greenhouse gas reduction goals that will contribute to community sustainability;*
- Effectively communicate the progress and success of energy and greenhouse gas reduction initiatives to the staff and citizens of the City of Prince George;*

*This policy will be reviewed on an annual basis and updated as required to insure ongoing commitment to sustainable energy and greenhouse gas reduction. Each member of the*

*corporation has a vital role to play in the execution of this policy in their day to day management, supervision and work.*

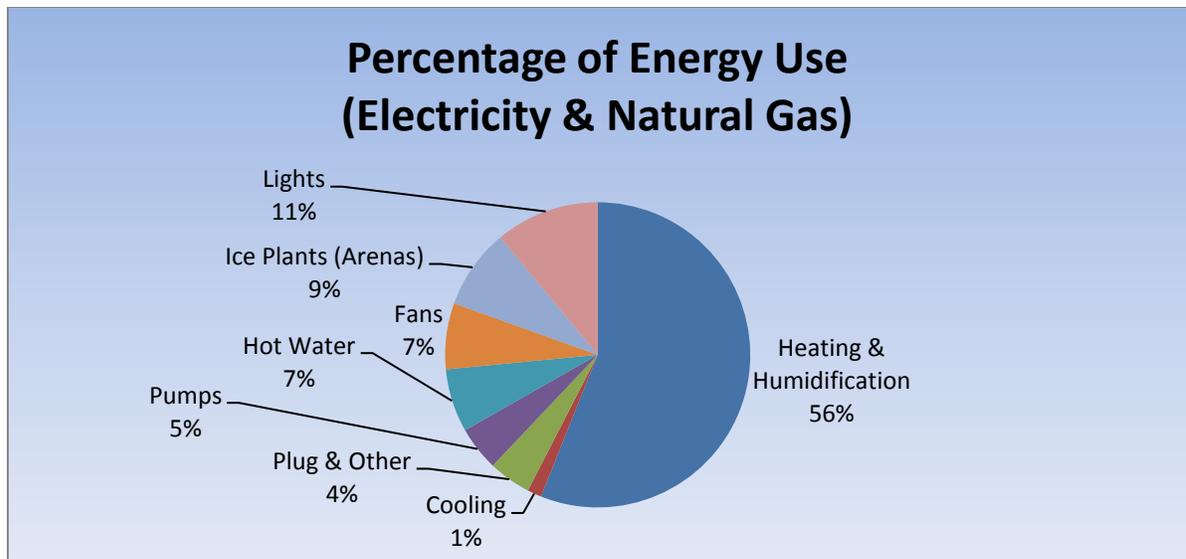
### **6.3. City of Prince George Sustainable Energy Management Plan (SEMP)**

The City provides annual SEMP's to BC Hydro as part of the Corporate Energy Manager program managed through the Civic Facilities Division since 2007. The SEMP provides detailed baseline energy use broken down by major facility site and energy source (electricity and natural gas) and includes only energy used for the 23 major civic facilities and buildings (i.e. fleet vehicles, and other smaller facilities and equipment<sup>4</sup> are not included). The 2010 SEMP reports that the 23 major City facilities account for about 38 million ekWh/yr energy use including both electricity and natural gas. About 60 percent of the energy costs for the major civic facilities are from BC Hydro and the remaining 40 percent from natural gas use. Between June 2009 and May 2010, the combined 23 major Civic facilities accounted for about \$1.3 million in energy costs. In comparison, when accounting for all the energy use of the City's buildings and facilities, including the major facilities and the numerous smaller facilities and equipment, the total electricity and natural gas energy costs are about \$3.85 million annually.

The 2010 SEMP provides a breakdown of the energy use (both electricity and natural gas) related to the major Civic facilities. About 56 percent of the energy use is for heating and humidification of buildings and facilities and lighting is the next biggest energy use which is about 11percent of the total energy use for the City's facilities. Reducing the energy consumption of the buildings, which relies on natural gas for the most part, would have a more significant effect on reducing GHGs, than reducing electricity used for lighting. The following provides the breakdown of energy use (both electricity and natural gas) as reported by the 2010 SEMP:

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<sup>4</sup> Other smaller facilities and equipment not included in the SEMP, relate to numerous smaller sites such as utility pump stations and station houses, outdoor facilities, and all the various street lights. The SEMP is designed to focus on energy efficiency for the major buildings and facilities.



The 2010 SEMP indicates significant improvements to electrical use showing that out of 23 major civic facilities tracked, all but six, reduced their electricity consumption from 2006 to 2009. Overall, there was an energy savings of 579,000 kWh, a 3.7 percent reduction from 2006 electricity levels.

The SEMP also provides an assessment of future energy savings and has provided a tentative energy reduction goal, subject to review, of a 20% reduction in energy intensity (electricity and natural gas) by 2015. This would yield a reduction of about 7.5 million kWh. The twenty percent energy savings would come from capital improvements (12%), energy awareness (3%) and operational improvements (5%) planned over 5 years.

Updates to the City's SEMP will continue to play a key planning and review role for the City's progress in achieving energy and GHG reductions covering buildings and facilities. SEMP's will serve as a key implementation tool for progressing on the City's over-arching Carbon Neutral Plan.

#### 6.4. Green Fleet Strategic Plan

Similar to City's SEMP for facilities and buildings, the Green Fleet Strategic Plan (GFSP), scheduled to go before Council in early 2011, provides a key implementation tool for energy (fuel) and greenhouse gas reductions covering the City's fleet of vehicles and equipment. The City has achieved the E3 Fleet Silver rating and the development of the framework for the SEMP was part of the work towards achieving the Silver rating.

The GFSP provides the detailed strategies to reduce GHGs, improve fuel efficiency, consider equipment and fuel alternatives and implement effective driver systems. Strategies are grouped into those that address fleet purchasing, and those that address operations with the current fleet.

The development of the GFSP considers the following:

- Options for reducing fleet GHGs;
- Cost-effectiveness
- Quality service delivery
- Experience from other jurisdictions
- Co-benefits
- Contribution to carbon neutral goal

The GFSP proposes a three phase approach expected to be rolled out over a three year timeframe. The first phase consists of laying the organizational groundwork through the establishment of a Green Fleet Review Committee, creating a communication plan, setting targets, establishing a fleet purchasing policy, and monitoring and tracking fleet use and emissions. Phase 2 is where the key fleet reductions would occur through the implementation of the outputs from Phase 1 and targeting a fleet review to achieve an E3 Fleet Gold status. Phase 3 is the review and evaluation of the results from Phase 2 and setting longer term goals and targets. This process reflects a continuous improvement approach.

The GFSP strategies related to purchasing new fleet vehicles include:

- Fleet and vehicle right-sizing
- Alternative technologies
  - Battery-electric
  - Hybrid electric
- Alternative fuels (e.g. biodiesel blends)
- After-market technologies (e.g. tire management program, GPS, engine control modules)
- Life cycle costing (e.g. monetary values on carbon emissions)

The GFSP strategies related to the operation of the current fleet include:

- Trip and route planning
- Idling reduction
- Driver education
- Maintenance
- Monitoring and benchmarking

## **6.5. Sustainable Procurement Policy**

Sustainable procurement is a management process to acquire goods and services in a way that gives preference to suppliers that generate positive financial, social and environmental outcomes, and that integrates sustainability considerations into product selection so that impacts on society and the environment are minimized throughout the full life cycle of the product. The City of Prince George's Sustainable Procurement Policy, approved by Council

in early 2010, is related to the City's goals and targets for energy and GHG reduction and carbon neutrality because, as one of its intentions, the policy guides the procurement of "goods and services that produce less air and water pollution and reduce harmful emissions".

Services supplied to the City under contract that relate to the traditional services (see Section 1.3.2), must account for the GHG emissions as part of the overall City corporate carbon footprint. Therefore, not only will contractors need to record and provide to the City their fuel use (which can then be converted to GHG emissions), there is an incentive for the City to use suppliers that would have reduced emissions either through their equipment or their methods. This could include many of the techniques used by the City through the E3 Fleet program such as having an idling reduction policy, using alternative or blended fuels, or using special technologies.

#### **6.6. Downtown District Energy System (DDES)**

The City of Prince George is moving ahead with the construction of its first District Energy System, that will be connected to several buildings and facilities located in the downtown core. This DDES will use recovered waste heat generated from burning existing sawmill residues from the Lakeland Mill to generate heat and hot water for buildings and will use technology to reduce particulate emissions from the burning of the waste wood. There will be a number of civic buildings connected to the DDES as well as other buildings in the downtown.

The DDES will have a significant effect on the city's corporate reduction of GHG emissions, because this type of biomass generated heat and power is considered "carbon neutral" under the GHG offset protocols, and the DDES will result in considerably less natural gas being used for space heating and domestic hot water.

The current projection of GHG reductions, just including the six civic buildings that will be connected to the DDES, is between 1,600 and 1,700 tonnes eCO<sub>2</sub>. The establishment of the DDES for the six civic buildings of Phase 1, conservatively estimated, reduces the City's GHG emissions by approximately 20 percent of 2009 data. In terms of the Partners for Climate Protection 10 percent corporate GHG reduction target from 2002 levels, set by Council in 2005, the DDES alone is anticipated to achieve this target.

There will be additional GHG reductions from other private sector and Provincial government buildings connecting to the DDES in the first phase estimated to be between 900 and 1,800 tonnes eCO<sub>2</sub>. City staff are working with Provincial staff developing the Green City Committee's Framework (see Section 1.3.2) to ensure that the City owned GHG reductions (i.e. those that are not retained by the customer) from non-civic buildings can be counted as a portion of our corporate GHG reductions. In time, as new customers hook into the DDES through Phase 2, additional GHG reductions may be retained for the City, subject

to Provincial policies and protocols currently being developed through the Green Communities Committee.

## **6.7. Actions, Policies and Recommendations**

### **6.7.1.Key Corporate Strategies for Corporate Energy and Greenhouse Gas Reductions**

The following corporate strategies provide a guide to the initiatives that the City may conduct, subject to Council's approval and budget. In most cases, further staff reporting through Council would be required prior to proceeding and reporting back on results. These strategies will be reviewed annually and updated as necessary.

- A. Fully utilize the Downtown District Energy System (DDES) potential heat capacity by actively seeking additional customers through a phased approach.
- B. Actively seek additional renewable energy systems for other areas of Prince George, where there are opportunities to reduce corporate energy use and GHG, where air quality is not compromised, and with guidance from the City of Prince George's OCP and the myPG plan.
- C. Update the corporate strategies of the 2007 City of Prince George Energy and Greenhouse Gas Management Plan, for Council's consideration in order to provide current implementation guidance.
- D. Continue implementing the building and facility strategies as described through the City's Sustainable Energy Management Plan as per Council's direction.
  - i. Develop opportunities to showcase energy efficiency and renewable energy projects in order to promote the adoption of similar strategies in the community.
- E. Continue with E3 Fleet strategies to reduce vehicle fuel and GHG emissions through the development and Council approval of the City's Green Fleet Strategic Plan.
- F. Establish a Carbon Neutral Committee, of staff representing key departments, to:
  - i. Maintain and amend where necessary the City's Energy Efficiency and GHG Reduction Policy;
  - ii. To develop an implementation plan for the key strategies listed here and City wide corporate strategies to reduce energy and GHG emissions;
  - iii. To provide oversight, accountability, and awareness to the Carbon Neutral Reserve Fund;

- iv. To make recommendations for the City's offset purchases, and;
  - v. To develop awareness and incentive programs for staff with guidance from the Sustainable Energy Management Plan and the Green Fleet Strategic Plan.
- G. For the purposes of reporting to the Province on our carbon neutrality, continue tracking and reporting corporate energy and GHG emissions using the Province's Smart Tool to determine trends and the annual carbon footprint.
- H. Develop, for Council's consideration, a new corporate GHG reduction target, in consideration that the DDES alone is anticipated to achieve the Partners for Climate Protection target for a 10 percent corporate GHG reduction target by 2012.
- I. Through the Sustainable Procurement Policy, ensure that emission reduction and tracking requirements are phased in all new contracted service agreements starting no later than January 1, 2012, covering traditional municipal services as defined by the Province.
- J. Ensure that the cost of carbon offsets are included into all long-term building and infrastructure cost projections and that the City's operating budgets are adjusted accordingly.
- K. Provide clear budget information for Council's consideration pertaining to costs and savings associated with carbon neutrality commitments.
- L. Prepare and distribute public information (web-based and print) on the carbon neutral and energy reduction strategies that is designed to inspire and motivate businesses and residents to action.
- i. To explore the potential, viability, and the costs and benefits of developing, with partners, a web-based "portal" or "hub" that promotes northern BC offset projects for those that engage in purchasing carbon credits on a voluntary basis. While the voluntary market is relatively small, this could provide long-term opportunities to attract voluntary supplied carbon credit revenues that support local or regional GHG reduction projects that could include City projects.

### 6.7.2.A Carbon Neutral Reserve Fund

The City will establish a Carbon Neutral Reserve Fund (CNRF), initially established with funds from the annual carbon tax refunds through the CARIP collected since 2008. Other funds acquired through grants or awards will be considered on a case-by-case basis for inclusion into the CNRF.

Establishing the CNRF helps reduce the long-term annual costs to the City resulting from its corporate carbon footprint and its carbon neutral voluntary commitments. The reserve would be used to fund energy and GHG reduction projects and to fund the purchase of carbon offsets. The CNRF also provides a clear approach to showing the revenue, investments and purchases associated with carbon neutrality.

While ensuring that the reserve is maintained to have sufficient funds for purchasing carbon offsets annually, the funds are available for other uses associated with energy and GHG reductions. Preference is given to those projects, where relevant, that show a positive net present value return on investment. While a priority list is provided for guidance, funding decisions should also take into account other key environmental or social benefits that may not be easily quantifiable. The following are acceptable uses for the funds in descending order of priority:

1. Funding energy efficiency projects that reduce the use of natural gas, diesel or gasoline and that will show verifiable GHG reductions within the defined traditional services for a local government.
2. Funding projects defined in the Green Communities Committee Framework (see Section 1.3.2), that fall in the options two category and where the City retains the GHG reductions to apply to its own corporate carbon footprint reductions.
3. Funding projects defined in the Green Communities Committee Framework (see Section 1.3.2), that fall in the options three category and where the City retains the GHG reductions to apply to its own corporate carbon footprint reductions.
4. Funding corporate electricity energy efficiency projects that show a verifiable reduction in GHG emissions, and;
5. Funding education, awareness and promotional materials or initiatives either for corporate use or for public use that is designed to inspire and motivate staff, businesses or residents to act on energy and GHG reduction strategies.

Staff, through the Carbon Neutral Committee, will review these priorities annually and adjust where necessary, develop additional detail and guidance to the priorities to ensure clarity, transparency and accountability, and will develop annual project funding

plans in consultation with departments and key partners and for approval by the Director's Committee. Annual reports and project funding plans for the Carbon Neutral Fund will be provided to Council through the annual budget process.

### **6.7.3. Carbon Offset Purchasing Policy**

Where the City purchases carbon offsets in order to meet its voluntary carbon neutral commitments, the following guiding policy is needed because of the wide range of options available to a local government who are not required to acquire offsets through the Pacific Carbon Trust. In general, less expensive offsets usually means that the offsets do not rank well against a common set of established standards<sup>5</sup> or criteria and more expensive offsets are higher quality offsets meeting established standards that includes the following:

1. That the offset project would not have occurred under normal business as usual practices or required by regulation and that the extra revenue from the sale of the project offsets was an element of the financial viability of the project. This criterion is often referred to as the "additionality test".
2. That accurate quantification of baseline energy use, GHG emissions and reductions from the offset project uses generally accepted accounting principles following the Canada: ISO 14064-2 standards.
3. That auditing, generally by a third party, has been conducted to validate the project (audit the baseline energy and GHG emissions and potential reductions) and to verify the project, which is to audit and report on the actual emission reductions.
4. That there are clear ownership rights of the GHG reductions to ensure that there is no double counting. Once a GHG reduction is turned into and sold as an offset it must be "retired" so that it cannot be counted again.
5. That the GHG reductions and offsets are durable or permanent, which is of particular importance in tree planting (afforestation) carbon sequestering projects that have the potential for releasing the stored carbon through an event such as a wildfire.

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<sup>5</sup> For more information standards and criteria for carbon offsets, see Purchasing Carbon Offsets: A Guide for Canadian Consumers, Businesses, and Organizations, July 2009 at: <http://pubs.pembina.org/reports/offset-purchase-guide-v3.pdf>

6. Ensuring that an offset project in one location (e.g. tree planting) does not lead to accelerated GHG emissions (e.g. tree harvesting) in another location. This is referred to as “leakage”.

In addition to government and non-government organizations that review and report on the credibility and standards of various offsets available through different sources and markets, the BC Green Communities Committee will be releasing their recommended offset sources for local governments’ consideration. City staff, through the Carbon Neutral Committee will consider the recommendations of this report in forming recommendations for offset purchases.

In addition to our considerations for the quality of the offsets as described above, the City of Prince George will also be guided by the following:

1. Consideration and preference will be given to high quality carbon offsets that, as a first priority, support northern BC offset projects and as a second priority supports BC offset projects.
2. Preference will be given to offset projects that reduce the use of natural gas, oil, diesel and gasoline use, as these projects have the co-benefit of reducing our dependence on fossil fuels and improving our air quality.
3. In consideration of responsible fiscal management and sustaining the Carbon Neutral Reserve Fund, the City will ensure sound and defensible purchase pricing for quality offsets that meet generally accepted standards. The City may consider offsets through the Pacific carbon Trust, in support of BC offset projects, but may consider other sources for offsets.
4. The City supports and will consider the options provided through the BC Green Communities Committee for offset providers to aggregate of a number of smaller locally or regionally based projects that local governments could invest in through offset purchase.

The guidance to purchasing carbon offsets provide by the points above will be reviewed periodically by the Carbon Neutral Committee and adjusted where new information or considerations become known. Given the early stage of the various carbon offset projects and markets, the City anticipates that additional options may become available.

## 7. Conclusions

The City of Prince George is well prepared in meeting its voluntary 2012 carbon neutral commitment through the BC Climate Action Charter. The carbon neutral plan describes the guiding policies, GHG reduction strategies, and inter-departmental work that will continue to reduce the corporate energy demands and GHG emissions relating to vehicles and fleet and buildings and facilities. Since the City of Prince George is a signatory to the Climate Action Charter and is committed to carbon neutrality, the corporation receives a refund of its carbon tax on fuel, which in turn covers the carbon offset purchases. Therefore, the commitment to carbon neutrality is cost-neutral, and the City has actually benefitted because it has received carbon tax refunds since 2008 and has been eligible to receive grant awards for climate action initiatives.