

School District No. 57 (Prince George) - 2010 Carbon Neutral Action Report

Executive Summary

School District No. 57 (Prince George) has been making changes to our district in an effort to become carbon neutral. Over a decade we have begun the process of improving our energy performance in the areas of HVAC, lighting, appliances, equipment and air quality. Of particular note are some of the challenges of living in the north that require better management of heat and light over the long winter season. To this end we have begun a schedule of efficient boiler replacements, lighting fixture and bulb improvements and energy star appliances and equipment.



In 2010, we made another commitment to reduce our Fleet fuel consumption by 10% over a 12 month period. We have completed the pilot program to provide a comprehensive and universal recycling program to all schools in our district. We have developed a joint District Sustainability Committee with the cooperation of Senior Administration and School Administration.

Perhaps our most significant change is the completion of the construction of the new Duchess Park Secondary, the first of it's kind to be built to LEED Gold standards in Western Canada. Currently we are fully occupying the facility and continually monitoring and improving the Building Management Systems energy use.

Overviews

Actions Taken to Reduce Greenhouse Gas Emissions in 2010

Some of the actions taken in 2010 to reduce GHG were; replaced and reduced the number of vehicles in our fleet and completed furnace replacements and air handling unit upgrades at two other facilities.

Operational Changes in 2010

Staff has continued implementing changes to allow video conferencing, converting incoming and outgoing FAX documents to electronic email, and targeting fleet fuel consumption behavioural changes in our efforts to reduce GHG emissions.

2010 Green House Gas Emissions

Mobile Combustion Emissions for 2010 amounted to 395 tons CO₂.

Building Emissions contributed 6,038 tons CO₂.

Office supplies amounted to only 15 tons CO₂.

Total emissions were therefore 6,573 tons of CO₂ which included a Offset Exemption of BioCO₂ of 12 tons.

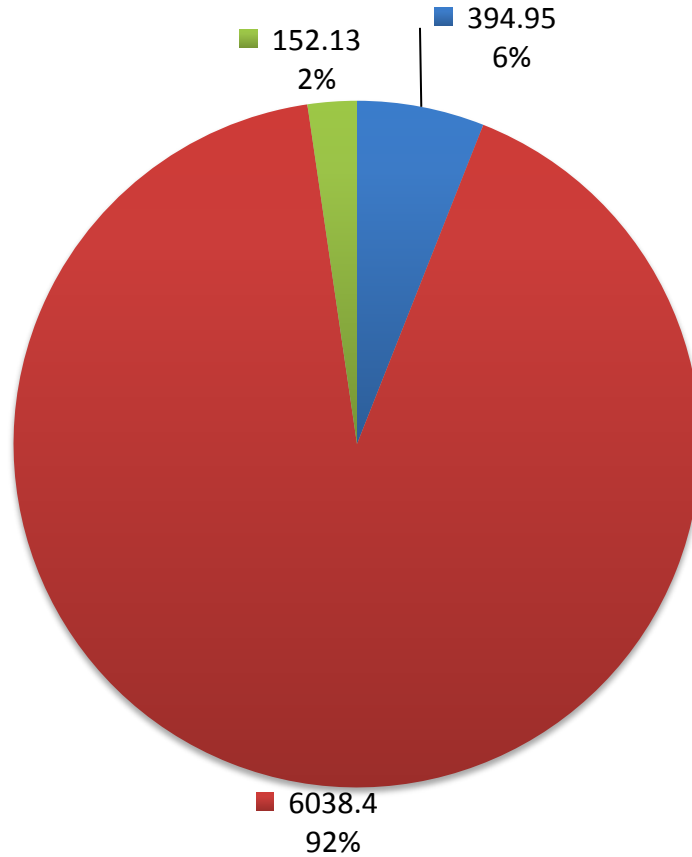
Offsets Applied to become Carbon Neutral in 2010

Carbon offsets were purchased to remain carbon neutral at a cost of \$164,325.

Plans to Continue Reducing Greenhouse Gas Emissions 2011 – 2012

- Continuation of the HVAC boiler and furnace replacements.
- Implementing recommendations provided by the District Sustainability Committee.
- Replacing light fixtures and lamps with BC Hydro Power Smart Express approved products.

School District No. 57
Greenhouse Gas Emissions by Source
for the 2010 Calendar Year (tCO₂e*)



Total Emissions: 6585.48

- Mobile Fuel Combustion (Fleet and other mobile equipment)
- Stationary Fuel Combustion and Electricity (Buildings)
- Supplies (Paper)

Offsets Applied to Become Carbon Neutral in 2010

Total offsets purchased: **6573.3**. Total offset investment: **\$164,332.50**. Emissions which do not require offsets: **12.18** **

*Tonnes of carbon dioxide equivalent (tCO₂e) is a standard unit of measure in which all types of greenhouse gases are expressed based on their global warming potential relative to carbon dioxide.

** Under the *Carbon Neutral Government Regulation of the Greenhouse Gas Reduction Targets Act*, all emissions from the sources listed above must be reported. As outlined in the regulation, some emissions do not require offsets.

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Actions Towards Carbon Neutrality

The actions listed below contribute to a reduction in greenhouse gas emissions from sources for which public sector organizations are responsible under the carbon neutral government regulation of the *Greenhouse Gas Reduction Targets Act*.

Action	Status (as of 12/31/10)	Performance to Date (as of 12/31/10)		Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
Mobile Fuel Combustion (Fleet and other mobile equipment)							
Vehicle fuel efficiency							
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	Ongoing/In Progress	6	% of vehicles down-sized since start year indicated	Three vehicles were downsized in 2010 to more efficient models. We will continue to assess our need for fleet vehicles as our schools and demographics change	Continue to assess fleet vehicle needs as our schools and demographics change	2009	No End Date (Continuous)
Perform regular fleet maintenance to improve fuel-efficiency	Ongoing/In Progress	100	% of vehicles are subject to regular maintenance for fuel efficiency	All units are assessed monthly to maximize efficiency and fuel economy. This is a comprehensive check of tire pressure, oil changes, filter changes and scheduled servicing	Continue to do monthly reporting and maintenance on each unit.	2008	No End Date (Continuous)
Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)							
Planning/management							
Reduce office space (square meters) per employee	In Development			We have been closing and re-purposing properties in order to reduce the fiscal and environmental cost of maintaining these properties	Further reduction and closing of properties, including removal of portables is planned for summer 2011.	2009	No End Date (Continuous)
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	Ongoing/In Progress	4	% of buildings have a real time metering system installed	This is currently used for load shedding to reduce peak demand on electrical systems.	More properties may be included upon evaluation	1999	No End Date (Continuous)
Owned buildings							
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	Ongoing/In Progress			Applied for LEED NC Gold Certification at new Duchess Park Secondary School.	No new schools planned for.	2010	No End Date (Continuous)
Incorporate integrated design process into new construction or during renovations of owned buildings	Ongoing/In Progress	50	% of buildings built or renovated since start year indicated used the integrated design process	Duchess Park Secondary School incorporated LEED Gold NC design.	All stakeholders are consulted during renovations, including maintenance tradesmen and consultants, on all renovation projects.	2006	No End Date (Continuous)
Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	Ongoing/In Progress			Inventory of all refrigerant systems was undertaken.	Monitor refrigerant systems, maintain and repair as necessary.	2010	No End Date (Continuous)
Complete energy retrofits on existing, owned buildings	Ongoing/In Progress	60	% of owned buildings have undergone energy retrofits since start year indicated	Building Energy Management Control Systems have been implemented	Future retrofits will be based on funding availability	Started before 1995	No End Date (Continuous)
Retrofitting owned buildings							
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress			We have replaced 12 furnaces and 8 air handling units in two locations with more efficient models.	38 additional furnaces are planned for replacement in summer 2011, along with a number of condensing boilers and hot water coils to 3 other schools.	2010	2011

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Action	Status (as of 12/31/10)	Performance to Date (as of 12/31/10)	Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
Upgrade lighting systems during retrofits	Ongoing/In Progress		As funding is made available, locations are receiving upgrades to their lighting systems	Lighting upgrades to Kelly Road Secondary and P.G.S.S. Secondary will be completed in Spring 2011. This will result in 110,000 kwh saved.	2010	2011
Upgrade/adjust control systems during retrofits	Ongoing/In Progress		All locations are on some form of control system. These are evaluated on an ongoing basis and monitored for improvements and performance.	Continue with commissioning and balancing of all systems.	Started before 1995	No End Date (Continuous)
Improve building insulation (including windows) during retrofits	Ongoing/In Progress		Applied spray foam insulation to exterior walls for pilot project in one facility.	Monitor performance of pilot project and duplicate efforts once funding is made available.	2010	No End Date (Continuous)
Install an on-site renewable energy demonstration project	Ongoing/In Progress		Application for 2.5kw Photovoltaic (PV) system through SolarBC sent through for approval.	Approval granted for project, installation to occur this summer, 2011.	2010	2011
IT power management						
Implement server virtualization	In Development		Testing is underway to reduce the number of servers through consolidation of services where possible	We will continue to investigate opportunities in this area	2009	No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress		21 Elementary schools have been upgraded over the last three years. CRT Monitors have been replaced with LCD monitors at most sites	The remainder of elementary schools will be upgraded as part of the Evergreening program.	2007	2012
Appliances and electronic devices						
Replace refrigerators with ENERGY STAR models or source ENERGY STAR models for future purchases	Ongoing/In Progress		This information was not tracked. All new fridges are Energy Star approved.	Continue buying Energy Star appliances.	2008	No End Date (Continuous)
Replace other appliances or electronic devices with ENERGY STAR models or source ENERGY STAR models for future purchases	Ongoing/In Progress		As equipment is evaluated and deemed necessary to replace, it is replaced with ENERGY STAR equipment where applicable	We will continue to make these upgrades as needed	2008	No End Date (Continuous)
Behaviour change program						
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress		Whenever possible staff are encouraged to unplug electrical equipment when not in use.	This will be an ongoing process that could possibly include and more formal form of notification.	2007	No End Date (Continuous)
Promote hot water conservation	Ongoing/In Progress		Hot water supply is limited to custodial use only in school facilities during school breaks.	This process will continue.	2009	No End Date (Continuous)
Other Stationary Fuel Combustion and Electricity Actions						
Complete energy retrofits on existing, owned buildings	In Development			n/a	2010	No End Date (Continuous)
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	In Development			n/a	2010	No End Date (Continuous)
Upgrade lighting systems during retrofits	In Development			n/a	2010	No End Date (Continuous)
Upgrade/adjust control systems during retrofits	In Development			n/a	2010	No End Date (Continuous)
Improve buildings insulation (including windows) during retrofits	In Development			n/a	2010	No End Date (Continuous)

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Action	Status (as of 12/31/10)	Performance to Date (as of 12/31/10)		Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
Replace computers with Energy Star models during regular computer upgrades	In Development				n/a	2010	No End Date (Continuous)
Supplies (Paper)							
Paper Type							
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	70	% of total paper purchased contains 30% recycled content	We currently purchase 30% recycled paper where we can.	Continue Program.	2010	No End Date (Continuous)
Printer/document settings							
Switch networked printers and photocopiers to automatic double-sided	In Development				/	2011	No End Date (Continuous)
Apply "print and hold" settings to networked printers to eliminate unclaimed print jobs	In Development				/	2011	No End Date (Continuous)
Electronic media in place of paper							
Use electronic document library for filing common documents	Ongoing/In Progress			In various areas, we are in the process of eliminating paper copies of documents in favour of electronic libraries on our server. Areas include but are not limited to student discipline system, student transfers, kindergarten registration, job applications, detention tracking, timesheets pay statements and T4s	We will continue to evaluate the possibilities for this item.	2008	No End Date (Continuous)
Post materials online that were previously printed	Ongoing/In Progress			All documents relating to the facilities or that is required for viewing by staff and the public is made available on our website and our intranet. This may include facility information, answers to questions and other commonly used documents.	All departments will continue to provide information in this manner.	2009	No End Date (Continuous)
Behaviour change program							
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress			Committees have instructed attendees to bring their laptops for note taking and minute distribution.	Continuation of the program.	2010	No End Date (Continuous)

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Actions to Reduce Provincial Emissions and Improve Sustainability

The actions listed below contribute to a reduction in greenhouse gas emissions from sources that fall outside of the reporting requirements defined in the carbon neutral government regulation of the *Greenhouse Gas Reduction Targets Act*. Public sector organizations can optionally use this section to report on actions that will help British Columbia meet its provincial greenhouse gas reduction targets, engage the public, and improve environmental sustainability across all aspects of their organization.

Action	Status (as of 12/31/10)	Performance to Date (as of 12/31/10)	Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
Business Travel						
Policy and budgeting						
Create a low-carbon travel policy or travel reduction goal	Ongoing/In Progress		Monitored and reported on fuel consumption to each individual driving a maintenance vehicle.	Attempt to reduce our fleet consumption by 10% from the previous year.	2009	2011
Virtual meeting technology						
Install web-conferencing software (e.g., Live Meeting, Elluminate, etc.)	Ongoing/In Progress		Whenever possible, we have used web-conferencing for training sessions, meetings and other long distance discussions.	More action may be taken to formalize the use of web based communication	2008	No End Date (Continuous)
Behaviour change program						
Train staff in web-conferencing	Ongoing/In Progress		Training and setup instructions were made available online to access our web-conferencing software.	Continue monitoring and evaluation of web-conference software.	2009	No End Date (Continuous)
Train staff in video-conferencing or provide technical support for video-conferencing set-up	In Development		Training and setup instructions were made available online to access our web-conferencing software.	Provide additional training and instructions as required.	2010	No End Date (Continuous)
Education, Awareness, and Engagement						
Team-building						
Create Green, Sustainability, Energy Conservation, or Climate Action Teams with executive endorsement	In Development			Committee will be meeting on a regular basis to recommend initiatives to the Board of Education.	2011	No End Date (Continuous)