

# Board of Education of School District No. 27 (Cariboo-Chilcotin) 2010 Carbon Neutral Action Report

## Executive Summary

The Board of Education of School District No. 27 continued to take positive action toward our goals of reducing greenhouse gas during the 2010 calendar year. The Environmental Stewardship Committee met throughout the year to discuss the current actions of the District and encourage further actions that will reduce our effect on global warming. The Committee provides all stakeholder groups an opportunity to exchange and share ideas that not only reduce greenhouse gases (GHG), but also produce more environmentally conscious and responsible students. The benefits of limiting our greenhouse gas production has also had a positive effect on our budget, monitoring and limiting the consumption of the GHG's has allowed us to save dollars that can be put back into other efficiency projects or directly back into student education.



## 2010 Greenhouse Gas Emissions

During the 2010 year our School District produced 4,688.41 tonnes CO<sub>2</sub>e. Since the initial release of the Greenhouse Gas Targets Act in 2008, our District has monitored and aggressively attempted to reduce our overall Carbon production. The 4,688.41 tonnes of CO<sub>2</sub>e as reported in 2010 represent an overall reduction since 2008 of over 16% of total Carbon output. This equates to a total elimination of almost 1,000 tonnes CO<sub>2</sub>e within two years, something that we are extremely proud of as stewards of our planet.

It was estimated that stationary fugitive emissions from cooling do not comprise more than 0.01% of our organization 4,688.41 total emissions and an ongoing effort to collect or estimate emissions from this source would be disproportionately onerous. For this reason, emissions from this source have been deemed out-of-scope and have not been included in our organizations total greenhouse gas emissions profile.

## Offsets Applied to become Carbon Neutral in 2010

As required by section 7 of the Carbon Neutral Government Regulation, we have purchased 3,396.85 tonnes CO<sub>2</sub>e equivalent offsets from the Pacific Carbon Trust. This purchase fulfils our commitment to be Carbon Neutral during the 2010 year, and compliant with the Greenhouse Gas Targets Act.

As required by section 5 of the Carbon Neutral Government Regulation, 1,291.56 tonnes CO<sub>2</sub>e of emissions resulting from the operation of school buses were reported as part of our greenhouse gas emissions profile in 2010. However, they were not offset as they are out-of-scope under section 4(2) (c) of the Carbon Neutral Government Regulation.



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## Emissions Reduction Activities



The School District investigated and implemented various forms of mechanical systems within the past year to reduce our overall greenhouse gas production. An upgrade at Mile 108 Elementary School was started to install a geothermal heat pump system to substantially lower the Greenhouse gas production at that facility. At Williams Lake Secondary a new high efficiency condensing boiler system was installed to replace an older inefficient heating system, as well, our District collaborated with BC Hydro to perform a lighting audit and redesign study to reduce the electrical consumption in this same building.

Within the 2010 year, four solar hot water systems were installed within different schools to highlight the power of solar energy, even in our northern region. The solar heating systems will allow us to reduce our carbon output and allow our students to study the energy that can be harnessed from the sun. The Solar installations were aided by grants from Solar BC and the Public Sector Energy Conservation Agreement (PSECA) allowing the installation to be completed at minimal capital outlay by the District.

The District continued its program of upgrading older inefficient lighting systems in portions of at least five buildings, substantially reducing the electrical consumption at our facilities.



## Plans to Continue Reducing Greenhouse Gas Emissions 2011 - 2013

School District No. 27 has secured funding to install Biomass boiler systems at two educational facilities during the 2011 year. The installation of these two systems is projected to substantially reduce our carbon footprint for years to come. The new systems will allow us to operate these two remote facilities on carbon neutral fuel, getting these particular buildings as close to neutral as theoretically possible. In addition, the biomass fuel will come from local sources further reducing the transportation carbon production and aiding the local forestry industry.

We are also planning the introduction of our first solar wall to collect energy from the sun to preheat the ventilation air entering into Williams Lake Senior Secondary, further reducing the need to operate carbon intensive boilers. In addition we have applied for grants to install our first Photo Voltaic (power generation) solar system, and hope to have it up and operational later this year.

Our Environmental Stewardship committee has forwarded recommendations to our Board of Trustees to move forward with an aggressive anti-idling program to reduce our carbon production across our entire fleet even though our school buses are considered out of scope.



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School District No. 27 will continue in our efforts for years to come to find efficiencies in our buildings and operations. We are also excited to be in an era of student and staff awareness that will result in a direct impact on our overall reduction of greenhouse gases now, and for the future. The operational School District "Environmental Stewardship Committee" ensures that the decisions made for today will also include a detailed investigation of the environmental impacts for those generations that follow.

Social responsibility and experiential learning is a large part of the educational system today. School District No. 27 believes that we all have a global social responsibility to share with the Government of British Columbia to limit carbon production and be carbon neutral. Lifelong learning allows us to learn from our past and keep moving forward enabling us to leave our planet a better place for all. This global view and the leadership role we are taking now will allow for a brighter future. The students of today will become the citizens that tomorrow will think beyond the town, province, or country they live in and become stewards of the earth for generations to come.



Bonnie Roller, CGA

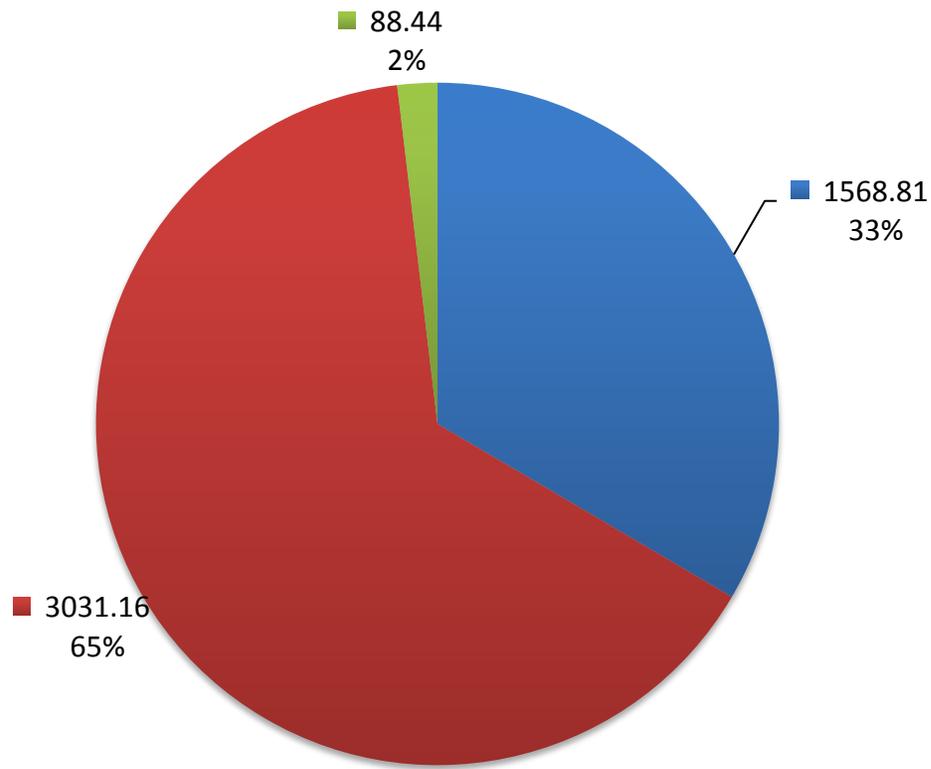
Secretary Treasurer

Board of Education of School District No 27



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Board of Education of School District # 27 (Cariboo-Chilcotin)  
 Greenhouse Gas Emissions by Source  
 for the 2010 Calendar Year (tCO<sub>2</sub>e\*)



**Total Emissions: 4688.41**

- 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: **3396.85**. Total offset investment: **\$84,921.25**. Emissions which do not require offsets: **1291.56** \*\*

\*Tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) 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 Neutral 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
<b>Mobile Fuel Combustion (Fleet and other mobile equipment)</b>							
<b>Vehicle fuel efficiency</b>							
Replace vehicles with more fuel-efficient models	Ongoing/In Progress	90	% of vehicles are fuel- efficient models	Two vehicles were purchased to replace older inefficient ones.	Continue to replace older inefficient vehicles with newer units.	2006	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	Ongoing/In Progress	10	% of vehicles down-sized since start year indicated	New vehicles were purchased with "right-sizing" principles.	Continue the "Right-Sizing" principle for new vehicle purchases.	2006	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	Preventive maintenance procedures of fleet continued.	Continue with preventive maintenance procedures.	2000	No End Date (Continuous)
<b>Behaviour change program</b>							
Introduce anti-idling policy and/or raise anti-idling awareness for fleet drivers (e.g., signs, stickers, messages)	In Development				Work with Environmental Stewardship committee to produce an anti-idling policy to present to the Board of Education.	2010	2012
Encourage carpooling in fleet vehicles	Ongoing/In Progress			All staff are encouraged to carpool in district vehicles when possible.	Work with district staff to encourage continued use of carpooling.	2008	No End Date (Continuous)
<b>Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)</b>							
<b>Planning/management</b>							
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	In Development	0	% of buildings have a real time metering system installed		District would like to start implementing real time monitoring of buildings starting with largest facilities and fuel consumers first.	2011	No End Date (Continuous)
<b>Owned buildings</b>							
Establish energy performance baseline for owned buildings	In Development	0	% of owned buildings have an established energy performance baseline		Energy consumption was collected and compiled into master database for all District sites.	2011	No End Date (Continuous)
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	In Development				All new construction projects will be built to LEED Gold standard.	2009	No End Date (Continuous)
Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	In Development			Procedures currently in place to try to prevent any fugitive emissions from escaping.	Procedures currently in place to try to prevent any fugitive emissions from escaping.	2008	No End Date (Continuous)
Complete energy retrofits on existing, owned buildings	Ongoing/In Progress	20	% of owned buildings have undergone energy retrofits since start year indicated	Retrofitted several buildings with more efficient lighting and HVAC systems.	Continue to identify sites requiring efficiency upgrades.	2006	No End Date (Continuous)
<b>Retrofitting owned buildings</b>							
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	33	% of retrofits since start year indicated had heating, cooling, and ventilation systems upgrades	Upgraded Mile 108 Elementary with a new geothermal heating , and upgraded Williams Lake Secondary with new high Efficiency Boilers.	Continue to identify and complete mechanical upgrades.	2005	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
Upgrade lighting systems during retrofits	Ongoing/In Progress	67	% of retrofits since start year indicated had lighting systems upgrades	Worked with BC Hydro's Powersmart program to upgrade lighting in buildings.	Continue working with BC Hydro to upgrade lighting systems.	2003	No End Date (Continuous)
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	33	% of retrofits since start year indicated had control system upgrades or adjustments	Worked with control contractor to ensure retrofits operate as efficiently as possible.	Continue to examine and re-commission HVAC control systems to operate as efficiently as possible.	2008	No End Date (Continuous)
Improve building insulation (including windows) during retrofits	Ongoing/In Progress	33	% of retrofits since start year indicated had insulation improvements	During the re-roofing of a high school extra insulation was installed to improve the buildings insulation.	Where applicable add more insulation to roofing contracts and start replacing older windows and doors with newer efficient ones.	2010	No End Date (Continuous)
Install an on-site renewable energy demonstration project	Ongoing/In Progress	13	% of retrofits since start year indicated had on-site renewable energy components	Solar Hot water systems were installed at four schools.	Continue to identify opportunities to install solar and other renewable energy projects.	2010	No End Date (Continuous)
<b>IT power management</b>							
Implement server virtualization	Ongoing/In Progress	98	% of servers have been virtualized since start year indicated	Ongoing Virtualization - 98 % Complete	100% Virtualization where technically possible	2007	2011
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices	In Development			Working with staff to train on operation of multi-function devices.	Working with staff to train on operation of multi-function devices.	2006	No End Date (Continuous)
<b>Appliances and electronic devices</b>							
Replace refrigerators with ENERGY STAR models or source ENERGY STAR models for future purchases	Ongoing/In Progress	35	% of fridges are ENERGY STAR rated	All new appliances were purchased had the ENERGY STAR rating.	Continue purchasing appliances with the ENERGY STAR rating.	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			All new appliances were purchased had the ENERGY STAR rating.	Continue purchasing appliances with the ENERGY STAR rating.	2008	No End Date (Continuous)
Replace desk lamp incandescent bulbs with compact fluorescent (CFL) bulbs or source more efficient desk lamps for future purchases	Ongoing/In Progress			No incandescent bulbs being purchased.	All incandescent bulbs are being replaced with CFL bulbs. No new incandescent bulbs are being purchased.	2008	No End Date (Continuous)
<b>Supplies (Paper)</b>							
<b>Paper Type</b>							
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	100	% of total paper purchased contains 30% recycled content	Revision of purchasing policy to only purchase paper with minimum 30% recycled content.	Continue purchasing minimum 30% recycled paper.	2009	No End Date (Continuous)
<b>Printer/document settings</b>							
Switch networked printers and photocopiers to automatic double-sided	In Development	10	% of network printers or photocopiers are set to automatic double-sided	Research into computer policy options need to be completed (how it will be accomplished).	Research into computer policy options.	2010	2012
<b>Behaviour change program</b>							
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Ongoing/In Progress	25	% of staff currently have received collaborative software training	All staff have been provided access to the District SharePoint services.	Ongoing training and staff awareness of the power of collaborative software.	2008	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
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress		Trustees have access to all their documentation online.	Further Expansion will require training and specific targeted projects.	2008	No End Date (Continuous)
Encourage re-use of scrap paper	In Development					

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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
<b>Business Travel</b>						
<b>Virtual meeting technology</b>						
Install web-conferencing software (e.g., Live Meeting, Elluminate, etc.)	Ongoing/In Progress	15 % of computers have web-conferencing software installed	Where Necessary Elluminate and Communication Server software has been implemented.	Installation of Communication Server into More Sites, and setting up of Virtual Classrooms.	2009	No End Date (Continuous)
Make desktop web-cameras available to staff	Ongoing/In Progress	10 % of staff have access to a desktop web-camera	Senior staff and Principals have access to web cameras.	Installation of Communication Server into more sites as necessary.	2009	No End Date (Continuous)
Install video-conferencing units in meeting rooms or provide mobile video-conferencing units	Ongoing/In Progress	10 % of meeting rooms have access to video-conferencing equipment	Four classrooms across the District have been outfitted as dedicated video/web Conferencing labs.	Installation of Communication Server into more sites as necessary.	2009	No End Date (Continuous)
<b>Behaviour change program</b>						
Train staff in web-conferencing	Ongoing/In Progress	20 % of staff are trained web-conferencing	Those requiring skills provided training, or IT Staff deals with operation of Equipment.	Those requiring skills provided training, or IT Staff deals with operation of Equipment.	2009	No End Date (Continuous)
Train staff in video-conferencing or provide technical support for video-conferencing set-up	Ongoing/In Progress	100 % of staff are trained in video-conferencing or have access to technical support	Those requiring skills provided training, or IT Staff deals with operation of Equipment.	Those requiring skills provided training, or IT Staff deals with operation of Equipment.	2009	No End Date (Continuous)
Encourage staff to consider virtual attendance/presentation at events where possible	Ongoing/In Progress		Where available, meetings are held virtually.	Increase the number of available meetings held virtually by expanding use of Communication Server.	2009	No End Date (Continuous)
Encourage carpooling to meetings	Ongoing/In Progress		All district staff are encouraged to carpool.	Continue encouragement of carpooling.	2008	No End Date (Continuous)
<b>Education, Awareness, and Engagement</b>						
<b>Team-building</b>						
Create Green, Sustainability, Energy Conservation, or Climate Action Teams with executive endorsement	Ongoing/In Progress		School District formed a "Environmental Stewardship" committee to provide high level guidance to the District regarding "Green" efficiencies. The Environmental Stewardship Committee met 3 times during 2010 to discuss and report out green activities of the District.	Continue with the Environmental Stewardship meetings to provide district with high level direction.	2009	No End Date (Continuous)
<b>Staff Professional Development</b>						
Support green professional development (e.g., workshops, conferences, training)	In Development		The District is working in conjunction with Solar BC to provide solar energy workshops in 2011.	Attend solar workshops as planned.	2010	No End Date (Continuous)
<b>Other Sustainability Actions</b>						
<b>Waste reduction/diversion</b>						
Implement a hazardous waste reduction and disposal strategy	Ongoing/In Progress		The School District offers a once yearly disposal of hazardous materials from schools.	Continue with program.	2007	No End Date (Continuous)
<b>Indoor air quality</b>						

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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
Enforce a scent-free policy (e.g., no strong perfumes, deodorants, etc.)	Ongoing/In Progress		Individual sites have own guidelines regarding scent free policy.	Continue to encourag a sent free environment.	2008	No End Date (Continuous)