

Board Of Education of School District #60 (Peace River North)

2011 Carbon Neutral Action Report

Executive Summary

Peace River North School District is entering its 11th year of energy conservation resulting in a reduction of over 40% in electricity used for lighting, 15% less for heating and 12% less for natural gas appliances since the program was initiated. With the completion of direct digital control and all of the pre 1980 furnaces replaced by the end of 2010 the district compiled in 2011 an updated inventory of all locations that would provide the maximum greenhouse gas savings in future changes. We will continue our relationship with B.C. Hydro as a Power Smart Partner to reduce energy consumption. The district continues to grow and with the addition of 1500 square meters of new space the energy use is still below 2008 levels.

2011 Greenhouse Gas Emissions

Total emissions generated by the operations of School District #60 totaled 4,232.51 tonnes of CO₂. Buildings accounted for 2481.71 tCO₂; fleet emissions were 1493.26 tCO₂; indirect emissions totaled 116.14 tCO₂, paper accounted for 92.07 tCO₂ and biomass added another 49.32 tCO₂.

Offsets Applied to Become Carbon Neutral in 2011

Total emissions for all sources generated by School District #60 were 4222 tCO₂e. As required by section 5 of the Carbon Neutral Government Regulation 1259 tonnes CO₂e 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. School District #60 has applied the balance of 2963 tCO₂e to become carbon neutral in 2011.

Changes To Greenhouse Gas Emissions and Offsets From Previous Years

School District #60 overpaid by 184 tonnes in 2010.

Actions Taken To Reduce Greenhouse Gas Emissions in 2011

Areas targeted in 2011 include

- Replacement of eight low efficiency furnace units with high efficiency units
- Replacement of seven older boiler systems with smaller high efficiency condensing boilers
- Reducing water consumption through the installation of low flow sensor faucets and low consumption toilets during renovations
- Replacement of 8 inefficient hand dryers with high efficiency models
- Direct digital control systems were recalibrated to ensure efficiency
- Continued replacement of exit signs with self-powered units

Looking Forward

The district understands and appreciates the need to become carbon neutral and is fully committed to working toward this objective. An education component for both staff and students is currently being implemented, additional funding opportunities are actively explored and ministry funding for facilities is being requested and as provided applied to energy reduction. High efficiency furnace units are presently being installed and mechanical engineering on lower performing sites is underway. On site staff are being provided with instruction on facilities maintenance to increase efficiency and partnering with outside agencies to provide student involvement. A 2.5 KW voltaic solar panel array has been installed and will be used both as a saving stream and for educational purposes in the classroom.

Submitted By:



Doug Boyd

Secretary Treasurer, SD #60



"TOGETHER WE LEARN"

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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 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Mobile Fuel Combustion (Fleet and other mobile equipment)							
Vehicle fuel efficiency							
Replace vehicles with more fuel-efficient models	Ongoing/In Progress	50	% of vehicles are fuel- efficient models	no funding	continue with replacement as funding is available	2000	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	In Development	0	% of vehicles down-sized since start year indicated	continuation of "upsizing" smaller busses with larger busses making less trips	continue as funding permits	2009	No End Date (Continuous)
Perform regular fleet maintenance specifically to improve fuel-efficiency	Ongoing/In Progress	100	% of vehicles are subject to regular maintenance for fuel efficiency	regular maintenance and documentation of all district vehicles	continuation of regular maintenance program	Started before 1995	No End Date (Continuous)
Behaviour change program							
Provide fleet driver training to reduce fuel use	Ongoing/In Progress	100	% of current drivers are trained	yearly training sessions scheduled	on going professional development training	2007	No End Date (Continuous)
Introduce anti-idling policy and/or raise anti-idling awareness for fleet drivers (e.g., signs, stickers, messages)	In Development			install anti-idling signage in parking lots	continuation of anti-idling signage and education with driver fleet training.	2010	No End Date (Continuous)
Encourage carpooling in fleet vehicles	Ongoing/In Progress			continuation of two fleet vehicles to transport staff to rural schools	continue carpooling	2008	No End Date (Continuous)
Promote alternatives to fleet vehicle travel where possible (e.g., bicycles, public transit, walking)	In Development			installation of bike racks and shower facilities at requested locations	re-evaluate previous actions; if the need is there for more bike racks will supply the same.	2010	No End Date (Continuous)
Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)							
Owned buildings							
Establish energy performance baseline for owned buildings	Ongoing/In Progress	100	% of owned buildings have an established energy performance baseline	Building energy use is recorded and compared monthly using the Fame program. Previously used Energy Manager	continuation of energy management software	2008	No End Date (Continuous)
Retrofitting owned buildings							
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	65	% of retrofits since start year indicated had heating, cooling, and ventilation systems upgrades	Ongoing replacement of 8 older furnaces with energy efficient models. Upgraded three boiler plants with smaller higher efficiency units.	continue until all older furnaces and boilers are replaced as funding allows	2007	2014
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	100	% of retrofits since start year indicated had control system upgrades or adjustments	DDC controls have been in operation throughout the district since 2002 and resulted in a 20% savings over previous years. However as with all digital controls the systems need recommissioning; we are in the process of recalibrating and assuring the initial operation as engineered	continuation of recalibration and determining operation	2009	No End Date (Continuous)
Improve building insulation (including windows) during retrofits	Ongoing/In Progress	20	% of retrofits since start year indicated had insulation improvements	replacement of all exterior windows in two older buildings	continue replacment of windows/exterior doors as funding permits	2008	No End Date (Continuous)

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Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
IT power management							
Install power management software which shuts down computers outside of regular business hours	Ongoing/In Progress	20	% of computers shut down automatically outside of regular business hours	investigated software, Windows policy settings	Continue testing of windows group policies	2010	No End Date (Continuous)
Implement server virtualization	Ongoing/In Progress	75	% of servers have been virtualized since start year indicated	new servers are virtualized	continue to virtualize as appropriate	2009	No End Date (Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices	In Development	0	% reduction in printers, copiers, and/or fax machines since start year indicated	testing variety of models. Have not found a reliable model	try new brand	2010	No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress			purchasing refurbished computers from CFSBC	continue to reuse	2010	No End Date (Continuous)
Appliances and electronic devices							
Replace refrigerators with ENERGY STAR models or source ENERGY STAR models for future purchases	Ongoing/In Progress	60	% of fridges are ENERGY STAR rated	New purchases are required to be energy star models	ongoing requirement of energy star rating	2009	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	20	% of other appliances are ENERGY STAR rated	users purchasing newer models are encouragd to ensure the energy star rating where possible	ongoing requirement of energy star rating	2009	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			30% of lighting in crawl space has been changed to either CFL or flourescent from incandescent	continue to replace incandescent lighting in all crawl spaces to more energy efficint.	2009	2012
Behaviour change program							
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress			written rminders to turn off all unused equipment	continuation of reminders	2009	No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Ongoing/In Progress			custodians close "moveable tackboards" over windows nightly. Locations with exterior insulated shutters close automatically as controlled by the direct digital controls.	continuation of reminders	2008	No End Date (Continuous)
Encourage staff to use air dry setting on dishwashers	Completed in 2011			reminders	continuation of reminders	2008	No End Date (Continuous)
Supplies (Paper)							
Paper Type							
Purchase 30% post-consumer recycled paper	In Development	5	% of total paper purchased contains 30% recycled content	recycled content paper is being used and monitored; problems with clogging printers and copiers in the past	continued use	2008	No End Date (Continuous)
Printer/document settings							
Apply "print and hold" settings to networked printers to eliminate unclaimed print jobs	In Development	5	% of network printers have 'print and hold' settings applied	testing in one school	roll out in cooperation with schools	2010	No End Date (Continuous)
Behaviour change program							

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Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)	Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress		User education	Modelling of practice, user education	2008	No End Date (Continuous)
Encourage re-use of scrap paper	Ongoing/In Progress		reusing paper to make notepads	scrap paper used in classrooms from recycle boxes	2007	No End Date (Continuous)

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Actions to Reduce Provincial Emissions and Improve Sustainability

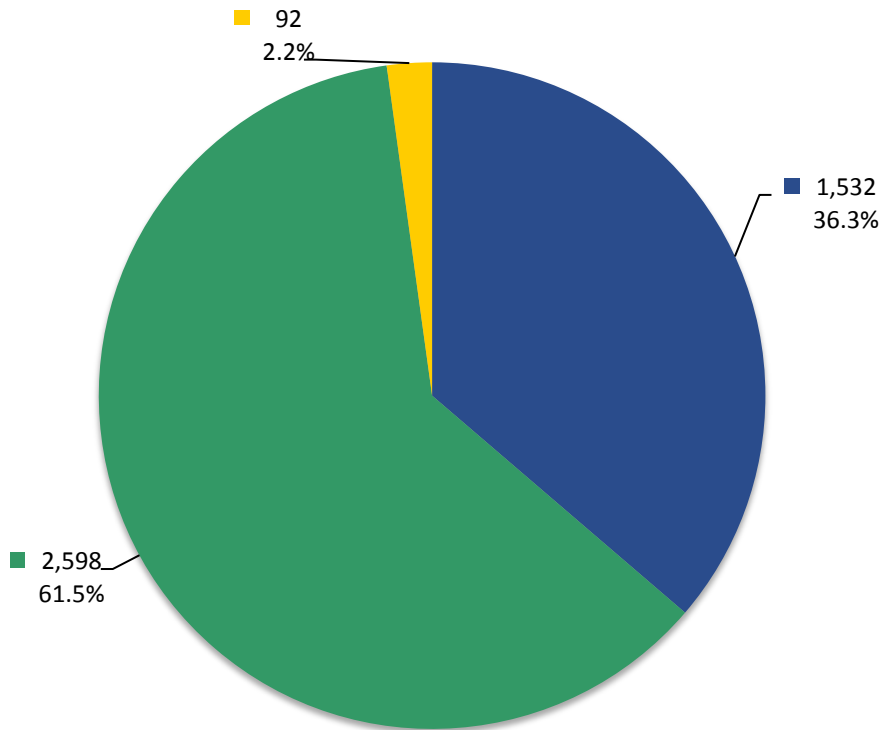
The actions listed below contribute to a reduction in greenhouse gas emissions from sources that fall outside of the reporting requirements defined in the carbon neutral government regulation of the *Greenhouse Gas Reduction Targets Act*. Public sector organizations can optionally use this section to 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 12/31/11)	Performance to Date (as of 12/31/11)	Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Business Travel						
Virtual meeting technology						
Make desktop web-cameras available to staff	Ongoing/In Progress	50 % of staff have access to a desktop web-camera	completed up to 50% install	purchase additional as requested	2009	No End Date (Continuous)
Behaviour change program						
Encourage staff to consider virtual attendance/presentation at events where possible	Ongoing/In Progress		increased sharing of online pro d offerings	continue to encourage staff to participate in this type of session	2009	No End Date (Continuous)
Encourage carpooling to meetings	Ongoing/In Progress		newsletters	newsletters	2009	No End Date (Continuous)
Education, Awareness, and Engagement						
Team-building						
Create Green, Sustainability, Energy Conservation, or Climate Action Teams with executive endorsement	In Development		procured the services of Destination Conservation in 7 of our schools.	Use feedback from the seven initial schools in the DC program to get the rest of the schools "on board" and expand the program	2010	No End Date (Continuous)
Providing behaviour change education/training to teams (e.g., community-based social marketing)	In Development		Destination Conservation mandate	as the Destination Conservation program expands we will have developed partnerships with outside expertise to bring to the classroom	2010	No End Date (Continuous)
Awards/Recognition						
Establish a sustainability/green awards or recognition program	In Development		There will be a year end awards and recognition ceremony to recognize the efforts of students and staff enrolled in the Destination Program	Encourage other schools to become involved in the Program	2010	No End Date (Continuous)
Staff Professional Development						
Support green professional development (e.g., workshops, conferences, training)	Ongoing/In Progress		staff attendance at workshops that would facilitate their knowledge of energy reduction	staff are encouraged to provide information on workshops that would be beneficial for their professional development	2011	No End Date (Continuous)
Other Sustainability Actions						
Water conservation						
Establish a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models	In Development		all replacement of faucets and toilets with low flow models	replace water faucets with sensor models; rural school urinals to a "waterless" model and toilets to low flow models	2011	No End Date (Continuous)
Put in place a potable water management strategy to reduce potable water demand of building-level uses such as cooling tower equipment, toilet fixtures, etc. and landscape features	In Development		installation of control shutoffs to outside taps limiting watering of flower beds.	continue with low flow toilet installation; urinals to "waterless"	2009	No End Date (Continuous)
Waste reduction/diversion						
Put in place an operations policy to facilitate the reduction and diversion of building occupant waste from landfills or incineration facilities	Ongoing/In Progress		paper, cardboard and juice box recycling since 2008	continuation of program	2008	No End Date (Continuous)

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Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)	Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Implement a hazardous waste reduction and disposal strategy	Ongoing/In Progress		procedures in place for the collection, storage and disposal of all hazardous waste	continued	2006	No End Date (Continuous)
Procurement (non-paper supplies)						
Establish green standards for goods that are replaced infrequently and/or may require capital funds to purchase (e.g., office furniture, carpeting, etc.)	In Development		use of marmoleum flooring to replace linoleim	investigate the use of any product to replace current practice.		
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	Ongoing/In Progress		all waste collection bags are made from recycled content	continued	2007	No End Date (Continuous)
Building construction, renovation, and leasing						
Establish a policy to reuse materials where possible and divert construction and demolition debris from landfills and incineration facilities	Ongoing/In Progress		materials that can be reused are actively put back into service; some material is donated via a "share shed" concept.	encourage reuse of materials that would be going to the landfill; give away program to continue	2011	No End Date (Continuous)
Commuting to and from home						
Offer staff a compressed work week	Ongoing/In Progress		maintenance staff have the opportunity to work 4/10 hour shifts in the summer	look for opportunities to make 4/10 hour shifts the norm	2005	No End Date (Continuous)
Provide shower or locker facilities for staff/students who commute by foot or by bicycle	Ongoing/In Progress		maintenance and custodial staff have lockers available.	investigate how much this option is being used to determine the need for showers.	2010	2012
Provide secure bicycle storage	In Development		evaluate current program to determine usage.	lockable area for staff to commute by bicycle; program is being evaluated to determine usage	2009	No End Date (Continuous)

**School District 60 - Peace River North (Fort St.John)
Greenhouse Gas Emissions by Source
for the 2011 Calendar Year (tCO₂e*)**



Total Emissions: 4,222

- Mobile Fuel Combustion (Fleet and other mobile equipment)
- Stationary Fuel Combustion (Building Heating and Generators) and Electricity
- Supplies (Paper)

Offsets Applied to Become Carbon Neutral in 2011 (Generated May 18, 2012 12:22 PM)

Total offsets required: **2,963**. Total offset investment: **\$74,075**. Emissions which do not require offsets: **1,259** **

*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.