

School District 79 (Cowichan Valley) 2012 Carbon Neutral Action Report



Executive Summary

The Cowichan Valley School District is continuing to reduce the amount of Greenhouse Gas Emissions that it produces. To this end, School District 79 has undertaken many measures to reduce its carbon footprint. In 2008 a full time Energy Manager was hired to reduce energy consumption and lower the district's carbon footprint. In 2009 the district adopted a policy on Resource Management and Sustainability and formed a Sustainability Committee whose mandate is to deal with issues that contribute to the district's carbon footprint. Long term reduction goals have been adopted which fall in line with the BC Energy Plan and Bill 44-2007: Greenhouse Gas Reduction Targets Act. Many mechanical system upgrades have been undertaken which continue to significantly reduce the district's carbon footprint. The district has continued to work on bus routing to reduce driving distances. The district is also working with BC Hydro on a Workplace Conservation Awareness program to encourage energy efficient practices across the district.

2012 Greenhouse Gas Emissions

The total Greenhouse Gas Emissions for 2012 were 3,026 tonnes CO₂e. 68.37% of this came from stationary fuel combustion and electricity, 27.86% came from mobile fuel combustion and 3.77% came from supplies.

Offsets Applied to Become Carbon Neutral in 2012

Of the total Greenhouse Gas Emissions 594 tonnes CO₂e resulted from the operation of school buses. As a result of this the total GHG Emissions that were offset to become Carbon Neutral for 2012 was 2,432 tonnes CO₂e. This resulted in a payment of \$60,800.00 plus HST which was paid to the Pacific Carbon Trust.

Changes to Greenhouse Gas Emissions and Offsets Reporting from Previous Years

Following the public release of School District 79 Cowichan Valley's 2011 Carbon Neutral Action Report, it was determined that the total emissions for the 2011 calendar year were under reported, due to late arrival of billing data, by 60 tonnes CO₂e.

The difference in offsets have been purchased from the Pacific Carbon Trust and applied against our 2011 emissions. The total Greenhouse Gas Emissions for 2011 were 3,580 tonnes CO₂e, of that 2,916 tonnes CO₂e required the purchase of offsets.

Emissions Reduction Activities

Actions Taken to Reduce Greenhouse Gas Emissions in 2012

The Bus fleet has been switched over to tires with lower rolling resistance. This has resulted in fuel savings of more than 3% for the whole fleet. The Transportation Department has also continued to work on bus routes. This has resulted in a further reduction in the annual distance travelled by the bus fleet.

The Operations Department has completed a number of lighting and lighting control projects throughout the district to reduce electrical consumption. A number of heating system projects have been undertaken so that systems operate more efficiently.

A Continuous Optimization project was implemented at one facility that will give a natural gas reduction of more than 30% annually.

Two oil furnaces were replaced with natural gas boilers which are more efficient and have much lower carbon emissions.

All computers in computer labs across the district now have Power Management Software installed.

Plans to Continue Reducing Greenhouse Gas Emissions 2013 – 2014

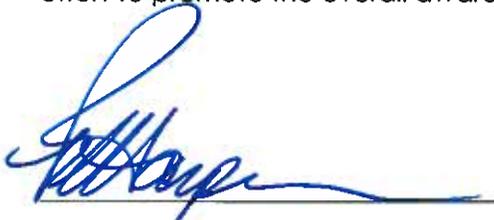
The district will continue to implement projects in an effort to continue reducing energy consumption and greenhouse gas emissions.

Lighting projects which will eliminate interior Metal Halide light fixtures will be implemented as well as continuing to install lighting controls where appropriate.

The district has received Carbon Neutral Capital Project funding that is going towards the installation of a Biomass boiler plant. This will result in a large reduction in Greenhouse Gas emissions since it is being installed at a facility that is currently heated by fuel oil.

The Transportation Department will continue to monitor routing in an effort to reduce driving distances.

The communication of Energy Efficient and Sustainable practices will continue district wide in an effort to promote the overall awareness of sustainability issues.



Robert Harper, Secretary-Treasurer

School District 79 Cowichan Valley - 2012 Carbon Neutral Action Report

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	Steps Taken	Steps Planned	Start Year	End Year
Mobile Fuel Combustion (Fleet and other)					
Behaviour change program					
Provide fleet driver training to reduce fuel use	Ongoing/In Progress	All new drivers coming online are trained. Refresher courses are run for all drivers.	Continued training for all new drivers and refreshers for existing drivers.	2009	No End Date (Continuous)
Introduce anti-idling policy and/or raise anti-idling awareness for fleet drivers (e.g., signs, stickers, messages)	Ongoing/In Progress	Anti-idling packages supplied to drivers and ongoing training. 3 minute automatic shut down has been initiated on all buses.	Refreshers, current materials and statistics will be provided.	2009	No End Date (Continuous)
Encourage carpooling in fleet vehicles	Ongoing/In Progress	Carpooling is continually encouraged.	Continue promoting carpooling.	2008	No End Date (Continuous)
Promote alternatives to fleet vehicle travel where possible (e.g., bicycles, public transit, walking)	Ongoing/In Progress	Have continued to work with local transit to encourage schedule merging.	Continue collaboration with local transit.	2011	No End Date (Continuous)
Other Mobile Fuel Combustion Actions					
Produce more efficient bus routes	Ongoing/In Progress	Continue to adjust bus routes to minimize annual travel distance.	Continue to adjust bus routes to minimize annual travel distance.	2009	No End Date (Continuous)
Make adjustments to bus fleet to increase fuel efficiency	Ongoing/In Progress	Maximum speeds are set on bus computers based on route requirements. Low rolling resistance tires have been installed on all buses resulting in more than 3% improvement in fuel economy.	Continue to explore new ways to improve fuel efficiency.	2009	No End Date (Continuous)
Vehicle fuel efficiency					
Replace vehicles with more fuel-efficient models	Ongoing/In Progress	4 of 39 buses replaced with the new DPF system and SCR system. Replaced 2 maintenance vehicles with more fuel efficient models.	Vehicle replacement will continue as budget allows.	2008	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	Completed (in Previous Year)				No End Date (Continuous)
Perform regular fleet maintenance to improve fuel-efficiency	Ongoing/In Progress	Oil, Lube and filter changes on: buses every 4000 km, operations vehicles every 4000km. Tune-ups as required. This is all done by mechanics in house.	Maintain current maintenance schedules.	2008	No End Date (Continuous)
Stationary Fuel Combustion, Electricity					
Behaviour change program					
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress	Green Tips distributed district wide on a regular basis.	Green Tips distributed district wide on a regular basis.	2008	No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress	Green Tips distributed district wide on a regular basis.	Green Tips distributed district wide on a regular basis.	2008	No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Ongoing/In Progress	Green Tips distributed district wide on a regular basis.	Green Tips distributed district wide on a regular basis.	2008	No End Date (Continuous)
Encourage staff to use air dry setting on dishwashers	Not Yet Evaluated				No End Date (Continuous)
Provide tips to staff on saving energy in the office while working outside of regular business hours	Ongoing/In Progress	Green Tips distributed district wide on a regular basis.	Green Tips distributed district wide on a regular basis.	2008	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress	Green Tips distributed district wide on a regular basis. 13 sites involved in Workplace Conservation Awareness program.	Green Tips distributed district wide on a regular basis. Add more sites to Workplace Conservation Awareness program.	2008	No End Date (Continuous)
Promote hot water conservation	Ongoing/In Progress	Turn down temperature on domestic hot water where ever possible.	Turn down temperature on domestic hot water where ever possible.	2008	No End Date (Continuous)
IT power management					

School District 79 Cowichan Valley - 2012 Carbon Neutral Action Report

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Install power management software which shuts down computers outside of regular business hours	Completed (in Reporting Year)	Power management software has been installed on all computers in computer labs across the district. Any new computers have power management set up before being put on line.		2009	2012
Implement server virtualization	In Development	I.T. developing plan for the district.	Plan still in development stage.	2010	No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Ongoing/In Progress	Sleep settings are set when computers are added to system.	Sleep settings are set when computers are added to system.	2008	No End Date (Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices as part of a print management strategy	Completed (in Previous Year)				No End Date (Continuous)
Apply auto-sleep settings on printers, fax machines, and/or multi-function devices	Ongoing/In Progress	Sleep settings are set when computers are added to system.	Sleep settings are set when computers are added to system.	2008	No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress	All new computers are ENERGY STAR rated.	All new computers are ENERGY STAR rated.	2008	No End Date (Continuous)
Owned buildings					
Establish energy performance baseline for owned buildings	Completed (in Previous Year)				No End Date (Continuous)
Register for performance labelling/certification for operations and maintenance of owned buildings (e.g., LEED EB:O&M)	Not Yet Evaluated				No End Date (Continuous)
Register for performance labelling/certification for commercial interiors of owned buildings (e.g., LEED CI)	Not Yet Evaluated				No End Date (Continuous)
Perform energy retrofits on existing, owned buildings	Ongoing/In Progress	Replace two oil furnaces with natural gas boilers. Install new unit ventilators at two sites. Install DDC system on heating at one site. Upgrade windows and building envelope at one site. Multiple lighting and lighting controls projects across the district. Implementation of Continuous Optimization Program at one site	Mechanical, control and lighting system upgrades to be undertaken at multiple sites for 2013 - 2014.	2009	No End Date (Continuous)
Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	Ongoing/In Progress	Maintain communication with staff regarding tracking of refrigerant during maintenance. Go through process to hire a refrigeration mechanic.	Hire a Heating Mechanic with a Refrigeration Certification. Establish a tracking protocol.	2010	2014
Planning/management					
Reduce office space (square meters) per employee	Not Yet Evaluated				No End Date (Continuous)
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	Ongoing/In Progress	Evaluate sites for future implementation.	Pulse metering at 7 sites by end of 2014. Investigate real time metering in conjunction with BC Hydro Smart Meters.	2009	No End Date (Continuous)
Retrofit details for owned buildings					
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	3 different HVAC projects took place across the district.	Continue upgrades to old and inefficient HVAC systems.	2008	No End Date (Continuous)
Upgrade lighting systems during retrofits	Ongoing/In Progress	Many different lighting projects took place across the district including changing light fixtures out and installing lighting controls. All T12 light fixtures have been replaced in schools across the district.	Replace interior Metal Halide fixtures. Continue to install lighting controls.	2008	No End Date (Continuous)
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	Every retrofit included installation and adjustment to control systems.	Control system upgrades to take place with every mechanical and/or lighting system retrofit.	2008	No End Date (Continuous)

School District 79 Cowichan Valley - 2012 Carbon Neutral Action Report

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Improve building insulation (including windows) during retrofits	Ongoing/In Progress	Upgrading of windows and building envelope during one of our major mechanical retrofits.	Work on applications for building envelope projects. Continue window replacement projects.	2009	No End Date (Continuous)
Supplies (Paper)					
Behaviour change program					
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	In Development	Have begun training of staff to use Wordpress.	Continue to train new staff that will be using Wordpress.	2010	No End Date (Continuous)
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress	All committees are encouraged to hold paperless meetings.	All committees will continue to be encouraged to hold paperless meetings.	2009	No End Date (Continuous)
Electronic media in place of paper					
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	In Development	Develop new school district website. Start developing Wordpress for all collaboration.	Expand Wordpress for everyone who works with online collaboration.	2010	No End Date (Continuous)
Use electronic document library for filing common documents	In Development	Working on District Library.	Continue to expand District Library.	2010	No End Date (Continuous)
Switch to an electronic payroll notification system in place of paper pay stubs	Ongoing/In Progress	Majority of staff have been put on electronic payroll notification system.	All staff will be on electronic payroll notification system by the end of 2013.	2009	2013
Paper Type					
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	Staff are encouraged to purchase paper with recycled content.	Staff will continue to be encouraged to purchase paper with recycled content.	2009	No End Date (Continuous)
Purchase 100% post-consumer recycled paper	Ongoing/In Progress	Staff are encouraged to purchase paper with recycled content.	Staff will continue to be encouraged to purchase paper with recycled content.	2009	No End Date (Continuous)
Printer/document settings					
Switch networked printers and photocopiers to automatic double-sided	In Development	Some systems are set to print double sided.	Develop district wide standard.	2010	No End Date (Continuous)

School District 79 Cowichan Valley - 2012 Carbon Neutral Action Report

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

Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Business Travel					
Behaviour change program					
Train staff in web-conferencing	Ongoing/In Progress	I.T. staff have been trained and are available for meeting set-up.	Continue to have I.T. staff available for meeting set-up.	2008	No End Date (Continuous)
Encourage staff to consider virtual attendance/presentation at events where possible	Ongoing/In Progress	Staff encouraged to access video conferencing when ever possible.	Continue to encourage staff to access video conferencing when ever possible.	2009	No End Date (Continuous)
Encourage carpooling to meetings	Ongoing/In Progress	Carpooling encouraged when ever possible.	Continue to encourage carpooling.	2009	No End Date (Continuous)
Encourage alternative travel to meetings (e.g., bicycles, public transit, walking)	Ongoing/In Progress	Alternative travel encouraged when ever possible.	Continue to encourage alternative travel.	2009	No End Date (Continuous)
Policy and budgeting					
Create a low-carbon travel policy or travel reduction goal	Not Yet Evaluated				No End Date (Continuous)
Virtual meeting technology					
Install web-conferencing software (e.g., Live Meeting, Elluminate, etc.)	Ongoing/In Progress	Software loaded when required.	Software available to all staff as required.	2008	No End Date (Continuous)
Make desktop web-cameras available to staff	Completed (in Previous Year)				No End Date (Continuous)
Install video-conferencing units in meeting rooms or provide mobile video-conferencing units	Completed (in Previous Year)				No End Date (Continuous)
Education, Awareness, and Engagement					
Awards/Recognition					
Establish a sustainability/green awards or recognition program	Ongoing/In Progress	This is done through the BC Hydro WCA program.	Expand program to include all sites.	2010	No End Date (Continuous)
Staff Professional Development					
Support green professional development (e.g., workshops, conferences, training)	Not Yet Evaluated				No End Date (Continuous)
Staff awareness/education					
Provide education to staff about the science of climate change	Ongoing/In Progress	Information available through BC Hydro Education programs.	Continue participating in BC Hydro programs.	2008	No End Date (Continuous)
Provide education to staff about the conservation of water, energy, and raw materials	Ongoing/In Progress	Information available through BC Hydro Education programs, BC Green Games, Lights Out Canada and other programs.	Continue to look for sources of information.	2010	No End Date (Continuous)
Provide green tips on staff website or in newsletters	Ongoing/In Progress	Green Tips distributed through district e-mail.	Continue to distribute Green Tips through district e-mail.	2009	No End Date (Continuous)
Provide sustainability education during new staff orientation	Not Yet Evaluated				No End Date (Continuous)
Team-building					
Create Green, Sustainability, Energy Conservation, or Climate Action Teams with executive endorsement	Ongoing/In Progress	BC Hydro WCA program was in place. One half of the schools in the district are on the WCA program. Other schools have internal Green Teams or sustainability clubs.	Expand WCA program to include all school sites.	2009	No End Date (Continuous)
Provide resources and/or dedicated staff to support teams	Ongoing/In Progress	Energy Manager and BC Hydro programs.	Energy Manager and BC Hydro programs.	2009	No End Date

School District 79 Cowichan Valley - 2012 Carbon Neutral Action Report

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
	Progress				(Continuous)
Providing behaviour change education/training to teams (e.g., community-based social marketing)	Ongoing/In Progress	This is done through the BC Hydro WCA program and other BC Hydro student education programs.	Expand program to include all sites.	2010	No End Date (Continuous)
Other Sustainability Actions					
Adaptation to Climate Change					
Assessed whether extreme weather events and/or long term changes in climate will affect the organization's business areas	Not Yet Evaluated				No End Date (Continuous)
Integrated considerations of extreme weather events and/or long term changes in climate into the organization's decision making.	Not Yet Evaluated				No End Date (Continuous)
Building construction, renovation					
Establish a policy to reuse materials where possible and divert construction and demolition debris from landfills and incineration facilities	Not Yet Evaluated				No End Date (Continuous)
Incorporate lifecycle costing into new construction or renovations	Ongoing/In Progress	Ministry Capital Asset Management program is in place and is used in assessing projects.	Continue to use Ministry Capital Asset Management program while assessing projects.	2010	No End Date (Continuous)
Commuting to and from home					
Encourage commuting by foot, bicycle, carpool or public transit	Ongoing/In Progress	Staff are encouraged to carpool or use alternative transportation. District participated in bicycle to work week.	Staff will continue to be encouraged to carpool or use alternative transportation.	2008	No End Date (Continuous)
Provide shower or locker facilities for staff/students who commute by foot or by bicycle	Ongoing/In Progress	Showers and lockers available at many sites.	Showers and lockers available at many sites.	2008	No End Date (Continuous)
Provide secure bicycle storage	Ongoing/In Progress	Bicycle storage available at all sites.	Bicycle storage available at all sites.	2008	No End Date (Continuous)
Procurement (non-paper supplies)					
Incorporate minimum recycled content standards into procurement policy for consumable, non-paper supplies (e.g., writing instruments, binders, toner cartridges, etc.)	Not Yet Evaluated				No End Date (Continuous)
Establish green standards for goods that are replaced infrequently and/or may require capital funds to purchase (e.g., office furniture, carpeting, etc.)	Not Yet Evaluated				No End Date (Continuous)
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	Ongoing/In Progress	Majority of cleaning products are eco-seal rated.	Majority of cleaning products are eco-seal rated.	2008	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	All sites have recycling programs in place and many sites have composting programs. We have expanding these programs across the district.	Develop complete waste, recycling and composting program for all sites across the district.	2008	No End Date (Continuous)
Implement a hazardous waste reduction and disposal strategy	Ongoing/In Progress	Hazardous waste disposed of through environmental contractors.	Hazardous waste disposed of through environmental contractors.	2008	No End Date (Continuous)
Water conservation					
Establish a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models	Ongoing/In Progress	Low flow fixtures used during renovations and retrofits.	Low flow fixtures used during renovations and retrofits.	2008	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	Not Yet Evaluated				No End Date (Continuous)

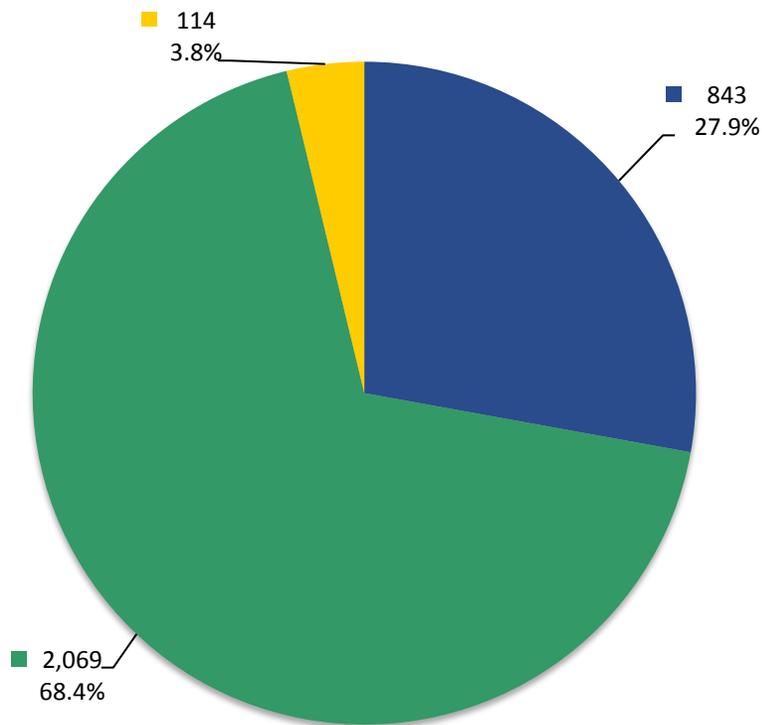
School District 79 Cowichan Valley - 2012 Carbon Neutral Action Report

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

Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Introduce a stormwater management landscape strategy (e.g., vegetated roofs, permeable paving, rain gardens, bioswales)	Not Yet Evaluated				No End Date (Continuous)

School District 79 - Cowichan Valley Greenhouse Gas Emissions by Source for the 2012 Calendar Year (tCO₂e*)



Total Emissions: 3,026

- 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 2012 (Generated May 31, 2013 12:10 PM)

Total offsets required: **2,432**. Total offset investment: **\$60,800**. Emissions which do not require offsets: **594** **

*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.