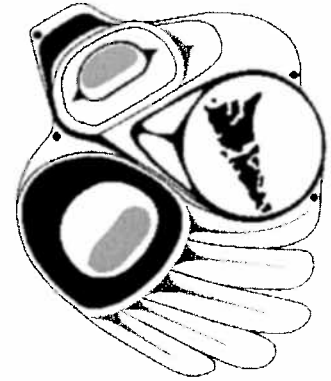



# School District 50 (Haida Gwaii) - 2012 Carbon Neutral Action Report



## Executive Summary

2012 was a year of extreme weather for Haida Gwaii – and even earthquakes—which remind us of how small and vulnerable we are. Placed in a remote, fragile and unique ecosystem, School District 50 (Haida Gwaii) is endeavouring to be a leader in sustainable practises and carbon neutrality. We see around us in severe winter storms, coastal erosion and tidal flooding the implications of climate change and want to actively engage in this problem of our era. We see that, as an institution dedicated to education, we must make sure our staff and students are full participants in the solutions we develop and actions we take. SD 50 has moved to a virtually all electronic format for letters, memos, and similar items. As much as possible, we are reducing the numbers of meetings, conferences, and the like that require physical travel. Along with other stakeholder groups of Haida Gwaii, we are working to replace the islands’ diesel oil electrical power grid with green technologies. We are hopeful that viable and sustainable formats will replace our reliance on oil over the next decade. Finally, we are looking ahead to gradual replacement and elimination of inefficient or oversized vehicles, equipment and buildings. This continues to be a challenge as a small, remote district with no staff assigned to environmental initiatives but an area we nonetheless take very seriously. Further community issues to consider include the lack of public transportation, distance between villages, and the increasing demand for electricity by all consumers. School District 50 is an active participant in all these discussions.



Angus Wilson, Superintendent of Schools

May 2013

Date

## Overview

### Greenhouse Gas Emissions in 2012

Total emissions for SD 50 in 2012 were 658.33 tonnes of Carbon Dioxide, down significantly from 2010 (862.65t). While smaller than many other institutions, SD 50 is a disproportionately large polluter on a per capita basis. Large, older buildings with old heating systems are the most significant factor in considering our GHG emissions. Indeed, building emissions account for over 98% of our footprint and emissions from other sources, in particular vehicles and supplies amount to less than 2% of our footprint. New heating systems are already noted at several buildings for having lower emissions than our legacy systems. As an example, a comparably sized ‘modern’ building costs about 65% of the monetary costs of an older building to heat (In 2010, forty year old Tahayghen Elementary cost \$85 000 to heat while twelve year old Sk’aadgaa Naay Elementary cost \$55 000, for example) . Another consideration is that our buildings were designed for considerably larger student populations than they currently house; thus, our emissions are quite high on a ‘per capita’ basis—we have over 17,000 square metres of building space for about 750 employees and students.

# Totals Calendar Year 2012, School District 50 - Haida Gwaii

	Measure	Quantity	Greenhouse Gases in Tonnes				
			CO <sub>2</sub>	BioCO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	tCO <sub>2</sub> e <sub>1</sub>
<b>Scope 1 (Direct) Emissions</b>							
Mobile Combustion (Fleet)	Litres	4,502.00	9.89	0.34	0.00	0.00	11.09
Stationary Combustion, Reported <sup>3</sup>	GigaJoules	9,177.59	583.42	12.72	0.01	0.02	603.52
<b>Scope 2 (Indirect) Emissions</b>							
Purchased Energy, Reported <sup>3</sup>	GigaJoules	4,970.50	34.30	0.00	0.00	0.00	34.30
<b>Scope 3 (Business Travel and Office Paper) Emissions</b>							
Office Paper	Packages	1,600.00	9.42	0.00	0.00	0.00	9.42
<b>Total Emissions, Calendar Year 2012</b>			<b>637.03</b>	<b>13.06</b>	<b>0.01</b>	<b>0.03</b>	<b>658</b>
<b>Carbon Neutral or Offset Exempt</b>			<b>0.00</b>	<b>13.06</b>	<b>0.00</b>	<b>0.00</b>	<b>13</b>
<b>Total for Offsets<sup>4</sup></b>			<b>637.03</b>	<b>0.00</b>	<b>0.01</b>	<b>0.03</b>	<b>645</b>

## Offsets Applied to Become Carbon Neutral in 2012

Total Emission offsets have been applied to become neutral for 2012. Our total emissions for offsets is 645 tonnes as reported in SMARTTool; this is a notable drop from 2011, which was over 700, which in turn was a decline from the previous year.

## Emissions Reduction Activities 2012

- Maintain limits on off island travel; reduced on-island travel with most meetings now skyped/teleconferenced, etc.; utilisation of Elluminate as an alternate to off island trips.
- Replaced one 'over-capable' vehicle with a new, more efficient four cylinder model. It is noted that five years ago we had seven district vehicles and now we have four. Any further gains will only be in replacement with more efficient vehicles, not reduction in numbers.
- Meetings are now virtually paperless – agendas are emailed or posted on our website as appropriate, with no shared physical copies. PC/CCing of documents has been replaced by EC (electronic copies) for all but the most significant legal documents. Our public board meetings now feature iPads for the public to use to follow the agenda and attachments.
- Extensive work on heating systems at two of our schools to improve efficiency of heating and domestic hot water, utilisation of speed drives. Replacement of one Diesel Oil furnace with Propane. Continued work to upgrade insulation, windows, etc. in our older buildings.
- Work with students on environmentally themed programmes, including BC Hydro powersmart, Farm to School, and a number of local initiatives in this



GMD Greenhouse

area. A considerable portion of our food is locally sourced. As an education organisation, we view it as our mandate to educate our students, staff and community on science and benefits of being environmentally responsible.

- Continue to be a member of the HGCEC working on reducing the island's dependence on oil. Reliability will be a consideration, as the islands are plagued by 'brown outs' which damage many of our electrical components, including heating systems and electrical panels, increasing our costs and decreasing our energy efficiency.

### **Plans to Continue Reducing Greenhouse Gas Emissions 2012 – 2014**

Looking ahead, we plan to reduce the footprint of the district by continuing to reduce the number of face to face meetings, replace current vehicles, computers and other appliances with more efficient models, and continue to improve the efficiency of our buildings by replacing outmoded heating systems or complete building replacement. Solar panels are being installed on, or planned, for several of our buildings. As our enrolment declines, our emissions per square metre will continue to increase unless we begin to rationalise our building envelope. This challenging work is already in the planning stages.

As an institution of education, we also recognise that educating our staff and students will be key. We already work with BC Hydro in our secondary schools with reducing lighting costs and various food initiatives to relate our consumption to environmental impact for all of our students, but we need to do more with our employees and staff to educate and empower them to make wise decisions on equipment use and utilise their innovative ideas.

## School District 50 Haida Gwaii - 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
<b>Mobile Fuel Combustion (Fleet and other)</b>					
<b>Behaviour change program</b>					
Provide fleet driver training to reduce fuel use	Not Yet Evaluated				No End Date (Continuous)
Introduce anti-idling policy and/or raise anti-idling awareness for fleet drivers (e.g., signs, stickers, messages)	Completed (in Previous Year)				No End Date (Continuous)
Encourage carpooling in fleet vehicles	Ongoing/In Progress	Difficult in a large remote district; staff are encouraged to co-ordinate travel.	Difficult in a large remote district; staff are encouraged to co-ordinate travel.	2008	No End Date (Continuous)
<b>Vehicle fuel efficiency</b>					
Replace vehicles with more fuel-efficient models	Ongoing/In Progress	Ford Transit Van purchased.	Possibly one more vehicle to be replaced in 2014.	2011	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	Ongoing/In Progress	One V8 van replaced with four cylinder model.	Possible additional replacement.	2010	No End Date (Continuous)
Perform regular fleet maintenance to improve fuel-efficiency	Ongoing/In Progress	Regular maintenance schedule for all work vehicles.	Regular maintenance schedule for all work vehicles.	2008	No End Date (Continuous)
<b>Stationary Fuel Combustion, Electricity</b>					
<b>Behaviour change program</b>					
Help staff reduce personal energy use through "workstation tune-ups"	Ongoing/In Progress	Most have been through 'tune up'.	Completed 2013.	2011	2013
Ask staff to unplug electrical equipment or switch off power bars when not in use	Completed (in Previous Year)				No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Completed (in Previous Year)				No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Completed (in Previous Year)				No End Date (Continuous)
Encourage staff to use air dry setting on dishwashers	Completed (in Previous Year)				No End Date (Continuous)
Provide tips to staff on saving energy in the office while working outside of regular business hours	Completed (in Reporting Year)	Completed 2012		2011	2012
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Completed (in Previous Year)				No End Date (Continuous)
Promote hot water conservation	Ongoing/In Progress	Upgrade/Replace DHW at SNES and QCSS in 2011/12.	Review other facilities; replace as feasible.	2011	No End Date (Continuous)
<b>IT power management</b>					
Install power management software which shuts down computers outside of regular business hours	Completed (in Previous Year)				No End Date (Continuous)
Implement server virtualization	Completed (in Previous Year)				No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Completed (in Previous Year)				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	Ongoing/In Progress	As replaced throughout district.	Ongoing as available.	2008	2014
Apply auto-sleep settings on printers, fax machines, and/or multi-function devices	Completed (in Previous Year)				No End Date (Continuous)
Replace computers with ENERGY STAR models during regular	Completed (in				No End Date

## School District 50 Haida Gwaii - 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
computer upgrades	Previous Year)				(Continuous)
<b>Owned buildings</b>					
Establish energy performance baseline for owned buildings	Not Yet Evaluated				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)
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	Not Yet Evaluated				No End Date (Continuous)
Perform energy retrofits on existing, owned buildings	Ongoing/In Progress	All renovations and refits are planned to include disposal of materials, in addition to upgrading energy systems etc. Further shared services is a feature of several of our buildings.	Further potential for shared services in Masset and Sandspit.	2009	No End Date (Continuous)
<b>Planning/management</b>					
Reduce office space (square meters) per employee	Ongoing/In Progress	Initiated conversation with NWCC to rent redundant space from the District in underutilised buildings. Rental of some properties and sale of others completed 2011.	Ongoing rental possibilities being explored.	2008	No End Date (Continuous)
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	Ongoing/In Progress	As available for replacement.	As available for replacement.	2008	No End Date (Continuous)
<b>Retrofit details for owned buildings</b>					
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	Replaced Oil burning furnace at GMD Secondary with Propane Oct 2012. Upgrades to speed drives at QCSS.	Replace other boiler at GMD	2008	2014
Upgrade lighting systems during retrofits	Ongoing/In Progress	Electrical reworking ongoing at several sites.	Ongoing upgrades; Solar Panel System alternative at one site in 2013.	2008	No End Date (Continuous)
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	Ongoing replacement throught district including housing.	Ongoing.	2008	No End Date (Continuous)
Improve building insulation (including windows) during retrofits	Ongoing/In Progress	New insulation at one older building 2012; previous year replaced windows.	Ongoing replacement of insulation in older buildings as part of AFG.	2008	No End Date (Continuous)
<b>Supplies (Paper)</b>					
<b>Behaviour change program</b>					
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Ongoing/In Progress	Job Action had slowed confirmation of training.	Completion by June 2012; monitor after this point.	2011	2013
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress	Use of Skype, iPads, etc.	Ongoing.	2009	No End Date (Continuous)
<b>Electronic media in place of paper</b>					
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Ongoing/In Progress	Use of Thoughtstream, PPT, scanned documentation, etc.	Continued expansion. Further efforts to reduce photocopying etc by teacher staff.	2010	2010
Use electronic document library for filing common documents	Ongoing/In Progress	Non critical documents stored both online and in direct computer hard drives.	Ongoing.	2008	No End Date (Continuous)
Switch to an electronic payroll notification system in place of paper pay stubs	Completed (in Previous Year)				No End Date (Continuous)
<b>Other Paper Supplies Actions</b>					
Use of phone conferences/eliminate/adobe direct/google dox to reduce/replace paper at meetings	Ongoing/In Progress	Further utilisation of virtual systems, Skype, online (cloud) documentation for meetings.	Ongoing.	2009	No End Date (Continuous)

## School District 50 Haida Gwaii - 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
<b>Paper Type</b>					
Purchase 30% post-consumer recycled paper	Completed (in Previous Year)				No End Date (Continuous)
Purchase 40% post-consumer recycled paper	Not Yet Evaluated				No End Date (Continuous)
Purchase 100% post-consumer recycled paper	Not Yet Evaluated				No End Date (Continuous)
<b>Printer/document settings</b>					
Switch networked printers and photocopiers to automatic double-sided	Not Yet Evaluated				No End Date (Continuous)

## School District 50 Haida Gwaii - 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
<b>Business Travel</b>					
<b>Behaviour change program</b>					
Train staff in web-conferencing	Completed (in Previous Year)				No End Date (Continuous)
Encourage staff to consider virtual attendance/presentation at events where possible	Completed (in Previous Year)				No End Date (Continuous)
Encourage carpooling to meetings	Completed (in Previous Year)				No End Date (Continuous)
<b>Policy and budgeting</b>					
Create a low-carbon travel policy or travel reduction goal	In Development	Early Draft. There are inherent issues with use of, for example, hybrids, EVs, and public transit in an area where these are non-existent.	Modified Policy.	2011	2014
<b>Virtual meeting technology</b>					
Install web-conferencing software (e.g., Live Meeting, Elluminate, etc.)	Completed (in Previous Year)				No End Date (Continuous)
Make desktop web-cameras available to staff	Completed (in Previous Year)				No End Date (Continuous)
<b>Education, Awareness, and Engagement</b>					
<b>Awards/Recognition</b>					
Establish a sustainability/green awards or recognition program	Not Yet Evaluated				No End Date (Continuous)
<b>Staff Professional Development</b>					
Support green professional development (e.g., workshops, conferences, training)	Ongoing/In Progress	Part of Education System Mandate.	Ongoing.	2008	No End Date (Continuous)
Include green options in employee performance measurement system	Not Yet Evaluated				No End Date (Continuous)
<b>Staff awareness/education</b>					
Provide education to staff about the science of climate change	Ongoing/In Progress	This is an essential part of Science, Social Studies and Planning Curriculae	Ongoing.	2008	No End Date (Continuous)
Provide education to staff about the conservation of water, energy, and raw materials	Ongoing/In Progress	This is an essential part of Science, Social Studies and Planning curriculae.	Ongoing.	2008	No End Date (Continuous)
Provide green tips on staff website or in newsletters	Ongoing/In Progress	As available or emergent.	Ongoing.	2008	No End Date (Continuous)
Provide sustainability education during new staff orientation	Completed (in Previous Year)				No End Date (Continuous)
<b>Other Sustainability Actions</b>					
<b>Adaptation to Climate Change</b>					
Assessed whether extreme weather events and/or long term changes in climate will affect the organization's business areas	In Development	Climate change is having a significant impact on Haida Gwaii. Winter storms are extremely severe, leading to power outages, physical damage to plant, wear and tear, no access to transportation, etc.	Assigning budget line item to cover average storm damages allowances.	2012	2014
Integrated considerations of extreme weather events and/or long term changes in climate into the organization's decision making.	In Development	Budget considerations -- allocating funds to respond to unexpected climate events (and also earthquakes).	Solar Panels at one school, battery back ups at all schools. Budget for extreme events.	2012	2014
<b>Building construction, renovation</b>					

## School District 50 Haida Gwaii - 2012 Carbon Neutral Action Report

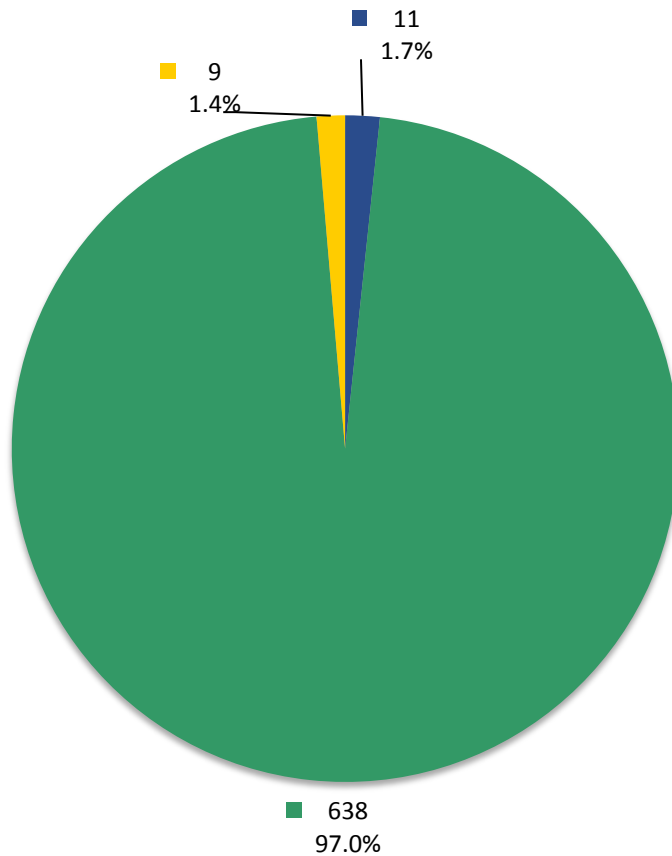
### Actions to Reduce Provincial Emissions and Improve Sustainability

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
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	Not Yet Evaluated				No End Date (Continuous)
<b>Commuting to and from home</b>					
Introduce telework/work from home policy	Ongoing/In Progress	Only applicable to a very few employees in a traditional school system.	None.	2008	No End Date (Continuous)
Offer staff a compressed work week	Completed (in Previous Year)				No End Date (Continuous)
Provide secure bicycle storage	Completed (in Previous Year)				No End Date (Continuous)
<b>Procurement (non-paper supplies)</b>					
Incorporate minimum recycled content standards into procurement policy for consumable, non-paper supplies (e.g., writing instruments, binders, toner cartridges, etc.)	Completed (in Previous Year)				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.)	Completed (in Reporting Year)	Procedure is to have minimum recycled content for various items like furniture, computers, etc.		2011	2012
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	Completed (in Previous Year)				No End Date (Continuous)
<b>Waste reduction/diversion</b>					
Put in place an operations policy to facilitate the reduction and diversion of building occupant waste from landfills or incineration facilities	Ongoing/In Progress	Policy by 2011. Composting, use of recycled paper, etc.	Ongoing.	2008	No End Date (Continuous)
Implement a hazardous waste reduction and disposal strategy	Completed (in Previous Year)				No End Date (Continuous)
<b>Water conservation</b>					
Establish a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models	Completed (in Reporting Year)	Implemented. Replacing fixtures with most efficient models as necessary; lower flow cycles on boilers, high efficiency DHW, etc.		2011	2012
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	Ongoing/In Progress	Ongoing as replacements are needed.	Ongoing.	2008	No End Date (Continuous)



**School District 50 - Haida Gwaii  
Greenhouse Gas Emissions by Source  
for the 2012 Calendar Year (tCO<sub>2</sub>e\*)**



**Total Emissions: 658**

- 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 10:11 AM)**

Total offsets required: **645**. Total offset investment: **\$16,125**. Emissions which do not require offsets: **13** \*\*

\*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 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.