



# School District No. 46 (Sunshine Coast)

## 2011 Carbon Neutral Action Report

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### Executive Summary

The Board of Education of School District No. 46 (Sunshine Coast) supports and encourages sustainable practices and actions towards carbon neutrality. The school district's values state that; "Environmental sustainability is key to both responsible citizenship and a healthy future, and we play a fundamental role in advancing it through education, from our schools on out to our local and global communities."

A key objective for School District No.46 (Sunshine Coast) with its stated value is educating employees and students to become socially responsible community leaders by promoting behavioural changes for environmental sustainability for today and into the future. By introducing environmental educational programs, we hope to enable all learners to use critical thinking to solve problems, make informed decisions, and understand the potential consequences of decisions and to take actions to ensure the sustainability of the environment. These programs should allow all students and employees to understand personal, local and global environmental issues, develop respect for self and all living species, and develop skills necessary for learning about and understanding the environment so they feel empowered to take personal actions, and continue learning throughout their lives.

Planning for reducing greenhouse gas (GHG) emissions from operations occurred at a number of levels and resulted in the following four key actions in preparation for carbon neutrality continuing in 2011 with ongoing continuation into the future:

1. Discussion of district-wide activities towards carbon neutrality became a standing item on the agendas of Administrative and Principals' meetings.
2. Requirement that all contracts and agreements that the district enters into must adhere to sustainable practices (bus contracts in particular).
3. Change to electronic communication to reduce paper for meeting agendas and presentations for both staff and the Board of Education.
4. Evaluations by trade persons assess all options with respect to finding the most sustainable and green cost effective energy consumption.

### Overviews

#### 2011 Greenhouse Gas Emissions

• Mobile Fuel Combustion (Fleet and other mobile equipment) =	152.00 tonnes CO <sub>2</sub> e
• Stationary Fuel Combustion and Electricity (Building) =	1231.00 tonnes CO <sub>2</sub> e
• Supplies (Paper) =	46.00 tonnes CO <sub>2</sub> e
• Fugitive Emissions =	0.00 tonnes CO <sub>2</sub> e
<b><u>Total 2011 Greenhouse Gas Emission</u></b>	<b><u>1429.00 tonnes CO<sub>2</sub>e</u></b>

It was estimated that stationary fugitive emissions from cooling do not comprise more than 0.01% of School District No. 46 (Sunshine Coast) 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 School District No. 46 (Sunshine Coast) total greenhouse gas emissions profile.

## Offsets Applied to Become Carbon Neutral in 2011

- Total 2011 Greenhouse Gas Emissions = 1429.00 tonnes CO<sub>2</sub>e
- Emission Which Do Not Require Offsets = <5.00> tonnes CO<sub>2</sub>e
- Changes To Greenhouse Gas Emissions And Offsets Reporting  
From Previous Years = 34.00 tonnes CO<sub>2</sub>e

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<u>Total Offset Purchased</u>	1459.00 tonnes CO <sub>2</sub> e
<u>Total Offset Investment (before taxes)</u>	\$36,475 cdn

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As required by section 5 of the Carbon Neutral Government Regulation, 5 tonnes CO<sub>2</sub>e of emissions resulting from the operation of school buses of were reported as part of our greenhouse gas emissions profile 2011. However, they were not offset as they are out-of-scope under section 4 (2) (c) of the Carbon Neutral Government Regulation.

## Actions Taken to Reduce Greenhouse Gas Emissions in 2011

Some specific initiatives that School District No. 46 (Sunshine Coast) undertaken in 2011 with regard to reducing greenhouse gas (GHG) emissions towards carbon neutrality from operations.

### Ongoing Initiatives Prior Years Continued in 2011

Continued with:

- Lighting upgrades in schools.
- Upgrades and additions to DDC controls in schools.
- Installation of multifunction devices (fax, copier, scan) in all worksites and schools.
- Installation of default auto sleep functions on computers, monitors and CPUs.
- Required Energy Star rated model computer and appliance renewals.
- Use of 30% post consumer recycled paper for printers and photocopiers.
- Reduced vehicle emissions through carpooling.
- Use of electronic document library for filing documents.
- Regular maintenance of fleet vehicles.

### New Initiatives Implemented in 2011

- Raising the level of awareness for carbon sustainability through staff and student education and dialogue to inform and encourage sustainable practices and support behaviour change.
- Evaluated mechanical systems and began developing a program to upgrade where necessary.
- Ensured shutdown of computers outside of regular business hours.
- Encouraged the use of electronic documents rather than printed-paper documents.
- Encouraged the utilization of web conferencing.
- Awareness for use of recycled paper noted in footer of district correspondences.

- Began recommissioning of existing mechanical systems and upgrades to high efficiency boilers.

## Plans to Continue Reducing Greenhouse Gas Emissions 2012 – 2013

Going forward, over the next three years, School District No. 46 (Sunshine Coast) will develop protocols, policy and regulations to support key areas of greenhouse gas reduction. Examples include:


- Complete all lighting retrofits.
- Further explore geothermal feasibilities at multiple sites.
- Add HVAC system override controls to allow for more consistent use of night setback.
- Establish school based Sustainability Committees to support district activities and to support sustainable practices.
- Begin to replace district vehicles with more fuel-efficient vehicles.
- Reduce District fleet to minimum required levels.
- Retrofit mechanical systems with VFD motors and condensing boilers.
- Additional lighting level controls.

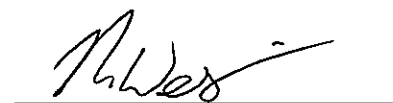
Becoming carbon neutral in 2011 - 2013 is an important goal towards School District No. 46 (Sunshine Coast) sustainability goals in the following ways:

- It encourages all members of the organization to work on this together to be more successful and unified in our efforts towards carbon neutrality.
- Carbon sustainability practices provide good modeling for students and the wider community.
- Carbon sustainability demonstrates fiscal responsibility by using recycled materials, monitoring and reducing consumables and analyzing and reducing utilization of vehicles.

Some anticipated financial, environmental, and social benefits related to reducing GHG emissions include:

- Social - bringing together various employees and employee groups with students for a common purpose.
- Financial – working toward energy efficiency will result in savings.
- Environmental – expanding school recycling programs, reducing fuel and gas consumption, and monitoring travel will support the initiatives of the activities Sunshine Coast local governments.

  
Patrick Bocking  
Superintendent of Schools

  
Nicholas Weswick  
Secretary Treasurer

### School District No. 46 (Sunshine Coast)

# School District 46 (Sunshine Coast) - 2011 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 (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
<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	0 % of vehicles are fuel- efficient models	Have evaluated present vehicles. Due to budget challenges, no vehicles were replaced in 2011. One vehicle was removed from service.	Fuel efficient vehicles will be purchased as fleet is renewed. The plan is to replace 5 vehicles in 2012 and remove 4 from service completely.	2012	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	Ongoing/In Progress	100 % of vehicles down-sized since start year indicated	The school district does not maintain their bussing transportation of students. This service is provided by a contractor.	Ongoing with service to be provided by a contractor.	Started before 1995	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	Peform regular maintenance on all fleet vehicles at either 5,000 kms or 6 month intervals.	Ongoing with performing regular maintenance on all fleet vehicles at either 5,000 kms or 6 month intervals.	Started before 1995	No End Date (Continuous)
Replace small maintenance vehicles with more fuel-efficient models	Ongoing/In Progress	0 % of small maintenance vehicles are fuel-efficient	Have evaluated present vehicles. Due to budget challenges, no vehicles were replaced in 2011	Fuel efficient vehicles will be purchased as fleet is renewed. The plan is to replace 5 vehicles in 2012 and remove 4 from service completely.	2012	No End Date (Continuous)
<b>Behaviour change program</b>						
Provide fleet driver training to reduce fuel use	Ongoing/In Progress	100 % of current drivers are trained	Provide training to staff with regards to ant-idling, warming up of vehicles, and driving within posted speed limits	Driver training and long term fleet plan/policy for staff is being planned for 2012	2012	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		Regulation to be developed from board policy committee	Ongoing enforcement and reminder to employees	2012	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	None	Considering adding this to buildings that are going through energy reduction upgrades.	2012	No End Date (Continuous)
<b>Owned buildings</b>						
Establish energy performance baseline for owned buildings	Completed in 2011	100 % of owned buildings have an established energy performance baseline	Calculated baselines for electricity, natural gas and propane.	Performing ongoing regression analysis to ensure we do not stray from our baseline.	2012	No End Date (Continuous)
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	In Development	0 % of owned buildings are certified LEED NC Gold or LEED NC Platinum	None	None		
Incorporate integrated design process into new construction or during renovations of owned buildings	In Development		None	None		
Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	Ongoing/In Progress	100 Restricted use of ozone depleting substances.			Started before 1995	No End Date (Continuous)
Perform energy retrofits on existing, owned buildings	Ongoing/In Progress	25 % of owned buildings have undergone energy retrofits since start year indicated	Lighting retrofits, HVAC controls tuned, exterior lighting controls.	Boiler upgrades at 4 buildings, DDC controls recommissioning, complete remaining lighting retrofits.	2012	No End Date (Continuous)
<b>Retrofitting owned buildings</b>						
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	0 % of retrofits since start year indicated had heating, cooling, and ventilation systems upgrades	None	Boiler upgrades at 4 buildings, DDC controls recommissioning.	2012	2012

## School District 46 (Sunshine Coast) - 2011 Carbon Neutral Action Report

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
Upgrade lighting systems during retrofits	Ongoing/In Progress	50	% of retrofits since start year indicated had lighting systems upgrades	Lighting retrofits at the maintenance shop and other small renos.	Lighting retrofits at 4 buildings.	2012	2013
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	100	% of retrofits since start year indicated had control system upgrades or adjustments	Continuous ongoing controls tuning.	District wide recommissioning of DDC controls.	2012	2012
Improve building insulation (including windows) during retrofits	Ongoing/In Progress	20	% of retrofits since start year indicated had insulation improvements	Envelope remediation projects at 2 buildings. Had insulation added.	Replacing last set of single glazed windows at Elphinstone Secondary School.	2012	2012
Install an on-site renewable energy demonstration project	In Development	0	% of retrofits since start year indicated had on-site renewable energy components	None	Applying for grants and incentives for such projects.	2012	No End Date (Continuous)
<b>IT power management</b>							
Install power management software which shuts down computers outside of regular business hours	In Development	0	% of computers shut down automatically outside of regular business hours	None	Plan to work with the I.T. Department to achieve 100% shutdown.	2012	2012
Implement server virtualization	In Development			None	None		
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices	Ongoing/In Progress	70	% reduction in printers, copiers, and/or fax machines since start year indicated	Ongoing as needed.	Ongoing as needed.	Started before 1995	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	50	% of fridges are ENERGY STAR rated	New appliance purchases are energy star rated.	New appliance purchases are energy star rated.	Started before 1995	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	100	% of new appliance purchases are energy star rated.	New appliance purchases are energy star rated.	New appliance purchases are energy star rated.	Started before 1995	No End Date (Continuous)
<b>Behaviour change program</b>							
Help staff reduce personal energy use through "workstation tune-ups"	Ongoing/In Progress	0	% of current staff have completed a workstation tune-up	Ongoing staff awareness.	Plan to develop "green team" or school based energy ambassadors. This will be part of their focus.	2012	No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress			Ongoing staff awareness.	Plan to develop "green team" or school based energy ambassadors. This will be part of their focus.	2012	No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Ongoing/In Progress			Ongoing staff awareness.	Plan to develop "green team" or school based energy ambassadors. This will be part of their focus.	2012	No End Date (Continuous)
Encourage staff to use air dry setting on dishwashers	Ongoing/In Progress			Ongoing staff awareness.	Plan to develop "green team" or school based energy ambassadors. This will be part of their focus.	2012	No End Date (Continuous)
Provide tips to staff on saving energy in the office while working outside of regular business hours	Ongoing/In Progress			Ongoing staff awareness.	Plan to develop "green team" or school based energy ambassadors. This will be part of their focus.	2012	No End Date (Continuous)
Encourage use of stairs instead of elevators	Ongoing/In Progress			Ongoing staff awareness.	Plan to develop "green team" or school based energy ambassadors. This will be part of their focus.	2012	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress			Ongoing staff awareness.	Plan to develop "green team" or school based energy ambassadors. This will be part of their focus.	2012	No End Date (Continuous)
Promote hot water conservation	Ongoing/In Progress			Ongoing staff awareness.	Plan to develop "green team" or school based energy ambassadors. This will be part of their focus.	2012	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
<b>Supplies (Paper)</b>						
<b>Printer/document settings</b>						
Switch networked printers and photocopiers to automatic double-sided	Ongoing/In Progress	50 % of network printers or photocopiers are set to automatic double-sided	Develop protocol to set default to double sided upon installation of new machines and existing machines that are capable of duplex printing.	Continue ongoing with purchase of future machine with duplex printing capability.	2010	No End Date (Continuous)
Reduce default margin size in standard document templates (e.g., letters, briefing notes, forms, etc.)	Ongoing/In Progress		Have encouraged reduction of margins in documents, and also the reduction of font sizes to reduce paper usage.	Continue ongoing	2009	No End Date (Continuous)
<b>Electronic media in place of paper</b>						
Use electronic document library for filing common documents	Ongoing/In Progress		Currently utilizing document library in First Class	Continue to expand this procedure, and to implement a Document Management System and Workflow System	2009	No End Date (Continuous)
Post materials online that were previously printed	Ongoing/In Progress		Board, Principal and administration meeting information distributed electronically Continue to expand this procedure 2009 No End Date (Continuous)	Board, Principal and administration meeting information distributed electronically Continue to expand this procedure 2009 No End Date (Continuous)	2009	No End Date (Continuous)
<b>Behaviour change program</b>						
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	In Development		None	Continue to expand this procedure as technology grows	2011	No End Date (Continuous)
Encourage re-use of scrap paper	Ongoing/In Progress		Ongoing staff awareness	Ongoing staff awareness	Started before 1995	No End Date (Continuous)

## School District 46 (Sunshine Coast) - 2011 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 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.

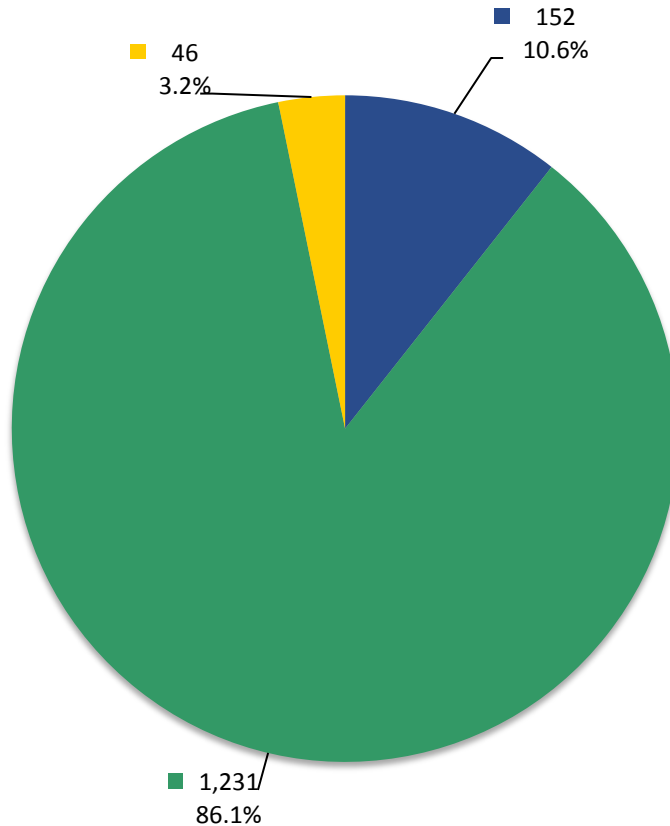
Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)	Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
<b>Business Travel</b>						
<b>Virtual meeting technology</b>						
Install web-conferencing software (e.g., Live Meeting, Elluminate, etc.)	Ongoing/In Progress	100 % of computers have web-conferencing software installed	Used conferencing software as needed	Continuos staff awareness	2012	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	In Development		Some schools have "green" teams	Continue to expand on "green" teams and energy ambassadors for all facilities with assistance from BC Hydro	2012	No End Date (Continuous)
Provide resources and/or dedicated staff to support teams	In Development		Some schools have "green" teams	Continue to expand on "green" teams and energy ambassadors for all facilities with assistance from BC Hydro	2012	No End Date (Continuous)
Providing behaviour change education/training to teams (e.g., community-based social marketing)	In Development		Some schools have "green" teams	Continue to expand on "green" teams and energy ambassadors for all facilities with assistance from BC Hydro	2012	No End Date (Continuous)
<b>Awards/Recognition</b>						
Establish a sustainability/green awards or recognition program	In Development		None	Continue to expand on "green" teams and energy ambassadors for all facilities with assistance from BC Hydro	2012	No End Date (Continuous)
<b>Staff Professional Development</b>						
Support green professional development (e.g., workshops, conferences, training)	In Development		None	Continue to expand on "green" teams and energy ambassadors for all facilities with assistance from BC Hydro	2012	No End Date (Continuous)
<b>Staff awareness/education</b>						
Provide education to staff about the conservation of water, energy, and raw materials	In Development		None	Continue to expand on "green" teams and energy ambassadors for all facilities with assistance from BC Hydro	2012	No End Date (Continuous)
Provide green tips on staff website or in newsletters	In Development		None	Will add energy information and tips to District website	2012	No End Date (Continuous)
<b>Other Sustainability Actions</b>						
<b>Water conservation</b>						
Establish a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models	Ongoing/In Progress		Continued to install low flow toilets when replacing broken ones. Shut off irrigation sytems when not needed.	Continue to replace fixtures with more efficient models	Started before 1995	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		Recycling at some facilities	Recycling at all facilities	2012	No End Date (Continuous)
<b>Procurement (non-paper supplies)</b>						
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	In Development			Considering the feasibility of moving to green products	2012	2013
<b>Commuting to and from home</b>						

**School District 46 (Sunshine Coast) - 2011 Carbon Neutral Action Report**

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
Offer staff a compressed work week	Ongoing/In Progress		Custoial staff work compressed work weeks during break periods	Custoial staff work compressed work weeks during break periods	Started before 1995	No End Date (Continuous)



## School District 46 - Sunshine Coast Greenhouse Gas Emissions by Source for the 2011 Calendar Year (tCO<sub>2</sub>e\*)



**Total Emissions: 1,428**

- 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 12:14 PM)**

Total offsets required: **1,424**. Total offset investment: **\$35,600**. Emissions which do not require offsets: **5** \*\*

\*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.