

Carbon Neutral Action Report School District No. 33 (Chilliwack)

Executive Summary

Since October 2008, the school district has integrated an Energy Manager into its Operations and Maintenance staff and also linked a Director of Instruction to the Energy Manager position in order to share information with teachers and students in the district. The district has developed a team that will work under the direction of the Secretary-Treasurer to continue to focus on environmental issues from both an operational and instructional perspective. Specifically, the Energy Manager will focus on energy management while the Director of Instruction will work on expanding environmental learning into the classroom.

Since October of 2008, we have introduced measures to reduce our carbon footprint. We have reduced running times of our exhaust fans and air-handlers in all of our 35 sites. We have begun the installation of digital controls to our exterior and parking lot lighting systems whose operation is determined by an astronomical clock plus photocell plus an annual schedule. In schools without Digital Control of the lighting an astronomical time clock with photocell has been provided to the site. In 2009 all sites with DDC control of the lighting will also have current-transducers installed to allow monitoring of the lighting to verify the lights are on only when necessary and also enabling us to control lighting periods on a specific schedule. All Secondary and Middle Schools have been evaluated to have their Domestic Hot water upgraded to on-demand-heating instead of using storage tanks and boilers. All Secondary and Middle Schools having more than 2 Million BTU boilers have had combustion efficiency adjustments performed just prior to the heating season. All sites using Direct Digital Controls (DDC) and radiators are now using the radiators only to preheat the buildings instead of using fans and air-handlers to provide the heat. This results in significant power savings throughout the district. A new technology has been applied to the District where we can instantly put all facilities into night-setback mode in the event of a "snow-day" or early dismissal or Professional Days instead of being left in the occupied mode. Any new packaged boilers will be a condensing type using at least 93% efficiency and heat pumps will be considered as a source of domestic hot water instead of boilers. We are planning a 5 site lighting retrofit in 2009 pending funding from PSECA. In addition, all mercury-vapour lamping found in gymnasiums and science areas will be replaced by T5 high-output lamps by the end of 2009.

Objectives

Beyond the objectives of reducing emissions throughout the organization, we also intend to link environmental curriculum to increase awareness of students and staff.

Part 1: Actions Taken to Reduce Greenhouse Gas Emissions in 2008

Overview

Performed combustion efficiency tests on all large boilers. Made on-demand heating a district standard instead of replacing boilers with new boilers. Performed efficiency programming of all DDC equipment to ensure optimum performance of all heating units. Upgraded all exterior and building lighting to use astronomical time clocks instead of 7 day clocks.

1.1 Mobile Fuel Combustion

A hybrid 72 passenger bus has been purchased as a pilot project.

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Replaced # of TYPE OF VEHICLE with MORE EFFICIENT VEHICLE/Hybrid	Complete	Reduction in bus fuel costs by measuring consumption data.C157	We have had some initial issues with the batteries for this bus and currently are awaiting replacements.
Provided driver training to reduce fuel use	In progress	We intend to see a reduction in fuel costs measured by a review of consumption and mileage data.	Our transportation department is providing ongoing training to all of our bus drivers. This will be done through our driver training program as well as additional Pro-d for drivers.
Initiated new fleet maintenance program (could include – changing filters, checking tire pressure, regular check-ups)	In progress	Reduction in fuel consumption and repair costs.	Comprehensive maintenance program at 2,000 4,000 and 6,000Kms per vehicle.
Established anti-idling behaviour change program (e.g. signs, stickers, messages)	Complete	We want all drivers to change their behaviours around this issue. It will result in lower fuel costs and less emissions.	All drivers have been mandated to turn off engines during normal idle times. Signs have been erected and all drivers have been trained.

1.2 Stationary fuel combustion and electricity

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Undertaken workstation tune-ups to help staff understand what they can do to reduce personal energy use	In progress	We are installing automated shutdown software on all computer equipment so that computers will automatically shutdown when not in use. It is anticipated this will result in annual savings of approximately \$80,000.	Technicians are installing this software on applicable equipment. This will be completed by summer of 2009.
Undertaken Monitor turn-off challenge	In progress	While this measure will save energy costs, it is hoped that turning a monitor "on" will become part of the process of logging on process	
Replaced # computers with EnergyStar models	In progress	As computers/monitors are replaced, they are replaced with EnergyStar models. This will result in savings of about 200 watts per monitor.	
Used air dry setting on dishwashers	Complete	Reduced energy consumption.	
Turned off lights in unused rooms	In progress	Unoccupied rooms will be unlit resulting in energy savings.	Wall stickers have been placed by every light switch in an effort to remind staff and students to turn lights off when a room is not in use.
Replaced Refrigerators (EnergyStar rated appliance)	in progress		

Replaced other appliances (with EnergyStar rated appliance)	In progress		
Installed multi-function devices (and removed stand-alone printers/faxes)	In progress	Will consider the use of multi-function devices in order to save energy and reduce paper costs.	Throughout the district we are looking to reduce the number of stand-alone printers and install multi-function copier/printer/scanners.
Replaced standard bulbs with CFLs	Complete	This is a district standard.	
Undertaken lighting retrofit	Complete	Required lighting retrofits have been completed, resulting in lower energy consumption.	
Implemented server virtualization	In progress	A technology review is being undertaken.	
Utilized desk-top power management settings on computer	Complete	Reduced energy consumption.	
Initiated corporate computer shut-down/wake-up for maintenance	In progress	Reduced energy consumption when computers are not in use.	
Undertaken building energy audit at LOCATION(s)	In progress	This is being implemented at 1 secondary, 1 middle and 3 elementary schools.	

1.3 Supplies

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Committed to use 100% recycled paper	In progress		
Initiated automatic double sided printing	In progress	Reduced paper consumption.	On available printers this is set as the default setting.
Developed document library (online and one printed copy) for large documents	In progress	This will result in reduced paper consumption.	Ongoing efforts are being made to make documents available online rather than by email.
Used collaborative software to edit on-line	In progress	Reduced paper consumption and reduced meeting costs - i.e.. Travel time, mileage charges	
Re-used non-confidential scrap paper	In progress	Reduced paper consumption.	
Used laptops/tablets	In progress		
Restructured a process to use less paper	In progress	Reduced paper consumption and lower energy costs resulting from less printing. The Board is currently considering moving to "paperless" board meetings to set an example for the district.	
Using electronic distribution of payslips	In progress	By the end of the year 100% of permanent staff will receive their payslips electronically. They are encouraged to not print them.	We have provided staff access to computers in general locations for those staff without regular computer access.

1.4 Travel				
Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken	
Set a X% Travel reduction goal	In progress	20% in travel	Budgets have been reduced accordingly.	
Trained staff in the use of Live Meeting (or other desktop collaborative software)	In progress	Approximately 5% of staff have been trained. Our technology review will result in increased opportunities in this area.		
Mandated car pooling to government meetings	In progress			
1.5 Employee Engagement				
Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken	
Provided climate change education	In Progress	Students and staff will have improved attitudes when it comes to energy conservation.	This is currently under development.	
Provided conservation education	In Progress	Students and staff already have improved attitudes when it comes to conservation.		
Held contests to change behaviour/make pledges	In Progress	Create increased awareness in schools.	Currently considering the format of this initiative.	
1.6 Sustainability Actions (others)				
Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken	
Took water conservation measures – low flow showers or toilets, fix leaks	Completed	Reduced consumption of energy and water.	This is a new implementation and no data is available at this time.	
Ran dishwasher only when full	Completed	Reduced consumption of energy and water.		
Improved recycling measures	In progress	Less waste into landfill.		
Used re-usable dishes	In progress	Less waste into landfill.		
Adopted low-carbon contracting practices	In progress	Less carbon emissions.		
Part 2: Plans to Continue Reducing Greenhouse Gas Emissions 2009 -- 2011				
Overview	We will work closely with contractors and our purchasing agent to promote purchases of EnergyStar compliant equipment.			
2.1 Mobile Fuel Combustion				
Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Replace # of TYPE OF VEHICLE with MORE EFFICIENT VEHICLE/Hybrid	In Progress	Reduction in bus fuel costs measured by comparing consumption data.		
Provide driver training to reduce fuel use	In Progress	We intend to see a reduction in fuel costs measured by a review of consumption and mileage data.	Our transportation department is providing ongoing training to all of our bus drivers. This will be done through our driver training program as well as additional Pro-d for drivers.	

Initiate new fleet maintenance program (could include – changing filters, checking tire pressure, regular check-ups)	Planned	Reduced emissions through the installation of particulate filters on buses.	Ensuring that all new buses have diesel oxidation catalyst (DOC's) as standard equipment.
Encourage car pooling in fleet vehicles	Planned	Reduced costs for fleet vehicles.	Where possible we are encouraging staff to carpool. Budgets have been reduced in this area.

2.2 Stationary Fuel Combustion (including electricity)

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Undertake workstation tune-ups to help staff understand what they can do to reduce personal energy use	Planned	Staff become energy conscious and we see our initiatives accepted and implemented throughout the district		Fall 2009
Supply power bars – to turn off power to non-essential items when not in use (e.g. phone chargers)	In Progress	Reduced energy consumption.		Spring 2009
Undertaken Monitor turn-off challenge	In progress	While this measure will save energy costs, it is hoped that turning a monitor "on" will become part of the process of logging on process		Fall 2009
Replace # computers with EnergyStar models	In progress	As computers/monitors are replaced, they are replaced with EnergyStar models. This will result in savings of about 200 watts per monitor.		
Ask staff to close blinds daily	In Progress	Reduced cooling costs.	Promotes energy awareness.	Fall 2009
Replace other appliances (with EnergyStar rated appliance)	In Progress	Reduced energy consumption.		
Install multi-function devices (and remove stand-alone printers/faxes)	In progress	Will consider the use of multi-function devices in order to save energy and reduce paper costs.	Throughout the district we are looking to reduce the number of stand-alone printers and install multi-function copier/printer/scanners.	Spring 2010
Install motion activated lights	Planned	Reduced energy consumption.	This measure will be incorporated into the three new schools being planned in the district.	Fall 2011

2.3 Supplies

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Commit to use 100% recycled paper	Planned			
Change document template margins				
Commit to hold paperless meetings	Planned	Reduced costs of energy from less printing, reduced paper consumption.	This is currently under consideration by the Board.	Fall 2009

2.4. Travel

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Set a X% Travel reduction goal	Planned	20% in travel	Budgets have been reduced accordingly.	2009-10
Install Video Conferencing facilities	Planned			2010-11

2.5. Employee Engagement

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Provide climate change Information	In Progress	Students and staff will have improved attitudes when it comes to energy conservation.	This is currently under development.	2009-10
Provide conservation education	In Progress	Students and staff already have improved attitudes when it comes to conservation.		2009-10
Hold contests to change behaviour/make pledge	In Progress	Create increased awareness in schools.	Currently considering the format of this initiative.	2009-10

2.6. Sustainability Actions (others)

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Improve recycling measures	In progress	Less waste into landfill.		2009-10
Use re-usable dishes	In progress	Less waste into landfill.		2009-10
Adopt low-carbon contracting practices	In progress	Less carbon emissions.		2009-10