



School District 10, Arrow Lakes
Ministry of Education

Walter Posnikoff
Superintendent/Secretary Treasurer

Carbon Neutral Action Report
Executive Summary:

School District No. 10 (Arrow Lakes) is a small rural dispersed district in the province with seven (7) buildings of varied ages and size that it maintains, nine (9) busses in the fleet, seven (7) gas driven passenger and/or small cargo vehicles, three (3) grounds maintenance machines, and 140 computers, forty-two (42) laptops, seven (7) servers. Efforts to improve energy efficiencies and energy consumption in the buildings, bussing, small cargo and passenger vehicles and computer technology have, in part, been implemented or are planned to be implemented. Building refits with energy efficiency windows and doors, computer controlled HVAC of the buildings, a propane fueled bus, greater efficiency ballasts for lighting, are some examples of the actions the district has taken and will continue to take to gain greater efficiencies in energy consumption. The completion of the Nakusp Elementary schools computer laboratory replacement with thin client devices resulting in significant power savings is evidence of ongoing systemic change. This report details more specifically the actions taken.

Behaviors in the District are also beginning to change. Evidence of this can be seen in the reduction in paper consumption in our Facilitated Learning Centers and central office. The purchase of recycled paper products, utilizing technologies to facilitate meetings rather than travelling for face-to-face meetings, are a few examples of the human behavioral changes.

Overviews:

Actions Taken to Reduce Green House Gas Emissions in 2009

The district reduced its bus fleet by two 72 seat busses effectively reducing fleet emissions by approximately 18%. Optimizing bus runs and school schedules facilitated this reduction. Implementation of thin client technology and power management policies at an elementary school reduced computer lab power consumption by 87%.

Operational Changes in 2009

Continued training to “power off after use” led to a significant cultural change which resulted in a yet unmeasured reduction in power usage.



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Plans to Continue Reducing Greenhouse Gas Emissions 2010-2012

Retrofits of two schools heating plants including boiler replacements and latent heat capture are projected to result in significant energy savings. Engineering of the retrofits is complete and construction will commence as soon as funding and contractual services are secured.

The replacement of roofing structures at a school which will include re-insulation will result in improved energy conservation at this school. Work is scheduled to commence during July, 2010.

Mr. Walter Posnikoff,
Superintendent of Schools
School District 10, Arrow Lakes

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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 <i>Greenhouse Gas Reduction Targets Act</i> .						
Action	Status (as of 12/31/09)	Performance to Date (as of 12/31/09)	Steps Taken in 2009	Steps Planned for 2010 -2012	Start Year	End Year
Mobile Fuel Combustion (Fleet and other mobile equipment)						
Vehicle fuel efficiency						
Replace vehicles with more fuel-efficient models	In Development		Busses available are not suited for our driving conditions	We will continue to evaluate alternate fuel and high efficiency vehicles for consideration.	2009	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	Ongoing/In Progress	33	% of vehicles down-sized since start year indicated	We reduced our fleet by two busses and maximized ridership to lower carbon output per student.(FTE)	2008	No End Date (Continuous)
Perform regular fleet maintenance to improve fuel-efficiency	Complete	100	% of vehicles are subject to regular maintenance for fuel efficiency	Vehicles are inspected every 2000 km's tires are checked daily	1990	No End Date (Continuous)
Replace small maintenance vehicles with more fuel-efficient models	In Development		We do not have the resources to make these changes	We do not have the resources to make these changes	2008	2012
Behaviour change program						
Provide fleet driver training to reduce fuel use	Complete	100	% of current drivers are trained	To reinforce good driving habits with training for all drivers	2008	No End Date (Continuous)
Introduce anti-idling policy and/or raise anti-idling awareness for fleet drivers (e.g., signs, stickers, messages)	Complete	100		Driver training continues to include this message.	2008	No End Date (Continuous)
Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)						
Planning/management						
Reduce office space (square meters) per employee	In Development			The evaluation of administrative space requirements is ongoing.	2009	No End Date (Continuous)
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	Ongoing/In Progress	90	% of buildings have a real time metering system installed	Continue to expand the components of HVAC being monitored, analyzed and controlled.	2003	2011
Owned buildings						
Establish energy performance baseline for owned buildings	Ongoing/In Progress	75	% of owned buildings have an established energy performance baseline	audits in three schools (NSS, NES, LESS) were redone in '09 for review	2009	No End Date (Continuous)
Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	Ongoing/In Progress			HVAC contractor(Paradise Controls) is monitoring refrigerant through out the District	2006	No End Date (Continuous)
Retrofitting owned buildings						
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	0	% of retrofits (captured above) had heating, cooling, and ventilation systems upgrades	2009 was a planning year for HVAC upgrades at Nakusp Secondary and Egdewood Elementary	2010	2011
Improve building insulation (including windows) during retrofits	Ongoing/In Progress	0	% of retrofits (captured above) had insulation improvements	Three new exterior doors at Nakusp Secondary and four new exterior doors at Lucerne	2010	2011
IT power management						
Install power management software which shuts down computers outside of regular business hours	Ongoing/In Progress	30	% of computers shut down automatically outside of regular business hours	Implementation of WOL clients on desktop computing.	2009	2011
Implement server virtualization	In Development			Training of key staff in implementation of virtualization technologies.	2009	2010
Apply auto-sleep settings on computer monitors and CPUs	Ongoing/In Progress	100	% of computers have auto-sleep settings applied	Implementation of a Managed Services Solution that facilitates in part User State Management	2009	No End Date (Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices	Ongoing/In Progress	10	% reduction in printers, copiers, and/or fax machines since start year indicated	We continued to remove legacy printing devices from operation, primarily through attrition.	2009	2012
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress	80	% of computers are ENERGY STAR rated	Continued replacement of legacy computer hardware with ENERGY STAR rated equipment.	2002	No End Date (Continuous)
Appliances and electronic devices						
Replace refrigerators with ENERGY STAR models or source ENERGY STAR models for future purchases	In Development	40		as needed replacements	2000	No End Date (Continuous)
Behaviour change program						
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress			some success with auxiliary heaters	2008	No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Ongoing/In Progress			some success with blinds	2008	No End Date (Continuous)
Promote hot water conservation	Ongoing/In Progress			laundry done on cool setting	2008	No End Date (Continuous)
Other Stationary Fuel Combustion and Electricity Actions						
Desktop Virtualization	Complete			Reduced CPU count in NES lab from 30 to 2 using thin client appliances.	2009	2009
Supplies (Paper)						
Paper Type						
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	100	% of total paper purchased contains 30% recycled content	Standard Practice	2002	No End Date (Continuous)
Printer/document settings						
Switch networked printers and photocopiers to automatic double-sided	In Development	0			2010	No End Date (Continuous)
Apply "print and hold" settings to networked printers to eliminate unclaimed print jobs	In Development				2010	No End Date (Continuous)
Electronic media in place of paper						
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Ongoing/In Progress	100	% of staff workstations with software installed	Continued to update and improve CMS functionality	2005	No End Date (Continuous)
Use electronic document library for filing common documents	In Development				2009	2011
Post materials online that were previously printed	Complete			Where possible all materials are now published online.	2008	No End Date (Continuous)
Switch to an electronic payroll notification system in place of paper pay stubs	Complete	100		When requested and applicable all staff receive payroll notification electronically.	2005	No End Date (Continuous)
Behaviour change program						
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Ongoing/In Progress			LMS software implemented to deliver alternate programs, eliminating paper based courses.	2010	No End Date (Continuous)

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Action	Status (as of 12/31/09)	Performance to Date (as of 12/31/09)	Steps Taken in 2009	Steps Planned for 2010 -2012	Start Year	End Year
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress		Meeting agenda packages distributed electronically.	Improve online publication procedures.	2009	No End Date (Continuous)
Encourage re-use of scrap paper	Ongoing/In Progress		Encourage staff and students to re-use then recycle paper.	Continue with education programs.	2001	No End Date (Continuous)