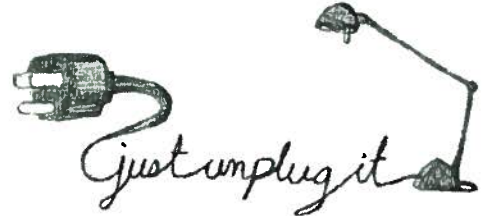


SD83 North Okanagan-Shuswap – 2014 Carbon Neutral Action Report

Executive Summary

As an educational organization in our region, School District 83 believes that we are accountable for providing leadership in environmental responsibility for our community.

As a commitment to our ecology, the North Okanagan-Shuswap School District has three primary goals: demonstrate a commitment for understanding sustainability, modelling green stewardship, and implementing effective environmental action.



The district is in the fourth year of participation in the Workplace Conservation Awareness Program (WCA) sponsored by BC Hydro and continues to focus on the theme “Just Unplug It” to reduce the number of appliances and equipment that are plugged in and drawing electricity. As well, the district has distributed improved shutdown procedures at the school level during school breaks has promoted the “no lights lunch” initiative at schools on Earth Day with a number of schools participating. In order to help the district reach its overall goal to reduce electricity usage in kilowatt hours (kWh) by 5% when compared to the baseline year.

Schools have implemented a number of programs to meet the reduction target including events such as “sweater days,” and identifying specific items such as space heaters and computer peripherals that could be unplugged permanently or when not in use to reduce electrical usage in school buildings. The district Green Team has a representative at each school who sponsors activities and raises awareness at each school site in order to change individual employee behaviour. Schools have undertaken a number of other initiatives to reduce the carbon footprint at their sites such as gardening and recycling programs.

To reduce our carbon footprint, the district created an Energy Policy in 2011 and remains committed to an overall five year energy reduction target of 16%. Environmental stewardship is taken into consideration in an increasing number of executive decisions.

Through Policy, all employees and students are responsible to conserve energy, help build a society that is environmentally sustainable, and to reduce our Carbon Footprint. To support these endeavours we continue to work with a number of agencies to promote initiatives in support of behavioural change.

Glenn Borthistle
Superintendent SD83, North Okanagan Shuswap



Carbon Neutral Action Report - Overview for 2014

This is the 2014 Carbon Neutral Action Report (CNAR) for School District No. 83, North Okanagan Shuswap. This report contains our 2014 emissions profile, offsets purchased, the actions we have taken in 2014 to reduce our GHG emissions and our plans to continue reducing emissions in 2015 and beyond.

By June 30, 2015, School District No.83's final CNAR will be posted to our website at www.sd83.bc.ca.

As required by the Carbon Neutral Government Regulations, all of our Carbon Emissions were reported through input into SMARTTool. Our total 2014 emissions were 3,119, the bus fleet exemption was 954. With the equivalent of 2,165 tonnes of non-exempt Carbon being reported into SMARTTool, we purchased offsets of \$54,125 plus GST, to make School District 83, Carbon Neutral

Emissions and Offsets Summary:

School District No. 83 - GHG Emissions and Offsets for 2014 (TCO2E)	
GHG Emissions created in calendar year 2014 (from SMARTTool Homepage)	
Total Emissions	3,119
Total Emissions for Offsets	2,165
Adjustments to GHG Emissions Reported in Previous Years (from SMARTTool Homepage)	
Total Emissions	0
Total Emissions for Offsets	0
Credit owing from PCT at end of 2013 reporting year (if applicable – from May 15 Invoice):	
Credit Owing	0
Total Emissions for Offsets for the 2014 Reporting Year (from Offset Invoice):	2,165



Emissions Reduction Activities

Actions Taken to Reduce Greenhouse Gas Emissions in 2014

Schools start at staggered times to give the Buses a larger window of time to travel between bus routes. With the use of GPS Technology, all bus routes are designed to be as efficient as possible which reduces mileage, time, and the number of buses required to safely transport our students to school.

GPS technology is installed in all Maintenance vehicles. The Department has started to monitor travel with the goal being a reduction of “windshield time”. This is complimented by refined planned work weekly schedules.

CO² Sensors monitor the air quality in the classrooms; therefore fresh air is introduced into the space as needed rather than by a fixed and constant amount. This not only reduces heating and cooling loads, but it allows additional fresh air to be delivered if air quality deteriorates. Air quality is better, and the amount of fossil fuels required to temper the outside air is diminished which also reduces Carbon Emissions.

Upgrades have been made to the exterior and interior lighting in many of our schools. We have added controls to the outside lights so areas other than the main entrances are turned off between 12:00am and 5:00am. As an added benefit, incidents of vandalism are down as there is reduced activity in areas surrounding “dark schools”. The lighting level requirements in hallways are lower during class times. Controls have been added to hallway lights to automatically lower the light levels. These lighting initiatives will save the district 150,000 KWh annually in electricity.

By polling the activity on our LAN, we determined that 30% of the computers that were on were not actively being used. As a result we installed computer power management software in 2300 PC's to shut the computers off if they were inactive for 2 hours. By ensuring all the computers are actually used during the day, and are off on weekends and evenings we estimate an annual savings of 400,000 KWh of electricity.

The new MV Beattie Elementary School in Enderby was built to LEED Gold Standards. This facility is heated with Geothermal Ground Source Heat Pumps. Our HVAC engineers have been monitoring the energy use and have found it to be one of the lowest energy schools in the province.

We are also building a new administration building with ground source heat pumps and LEED Gold Standards. This new building will incorporate three other buildings that we will be able to close completely. We are anticipating a large energy savings with this effort.



Plans to Continue Reducing Greenhouse Gas Emissions 2015 and beyond

With the mandate to reduce our Carbon Footprint, our engineers are evaluating 12 school sites to see if they are suitable for Ground Source Heat Pump systems.

Because our five largest schools are responsible for 40%+ the District's energy consumption, our second strategy is to optimize the existing HVAC equipment at these facilities. Engineering, in partnership with BC Hydro's Continuous Optimization Program (COP) have completed an analysis of these facilities and will recommend steps to take to reduce energy consumption. Potentially by re – commissioning HVAC equipment savings could be 20% in natural gas and 12% in electricity. If we achieve the results indicated, carbon emissions will be reduced by 136 tonnes. Strategies learned during this mechanical retrofit will be implemented in future upgrades throughout the District. Implementing these strategies has begun, data monitoring will continue over the course of the year. Once the analysis is complete, actual savings will be determined.

New builds and renovations have all been planned and engineered with energy consumption as one of our main priorities.

2014 Carbon Neutral Action Report (CNAR) - Part 2 ACTIONS

Organization Name

School District No. 83, North Okanagan Shuswap

Actions Taken to Reduce Emissions

1) Stationary Fuel Combustion, Electricity (Buildings): Indicate which actions were taken in 2014:

Performed energy retrofits on existing buildings

Yes

Built or are building new LEED Gold or other "Green" buildings.

Yes

Undertook an evaluation of overall building energy use.

Yes

Please list any other actions taken to reduce emissions from Buildings:

New rooftop unit with complex DDC controls.

Building new non certified LEED Administration building

2) Mobile Fleet Combustion (Fleet and other vehicles): Indicate which actions were taken in 2014:

Do you have a fleet?

Yes

Replaced existing vehicles with more fuel efficient vehicles (gas/diesel)

Yes

Replaced existing vehicles with hybrid or electric vehicles

No

Reduced the overall number of fleet vehicles

Yes

Took steps to drive less than last year

Yes

Please list any other actions taken to reduce emission from fleet:

Ongoing training and monitoring of the anti idling program.

Route changes focussing on least time and most efficient use of school busses

3) Supplies (Paper):Indicate which actions were taken in 2014:

Used less paper than previous year

Yes

Used only 100% recycled paper

No

Used some recycled paper

Yes

Used alternate source paper (Bamboo, hemp, etc.)

No

Please list any other actions taken to reduce emissions from paper use:

(No response)

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Actions Taken to Reduce Emissions - continued

Explain how you plan to continue minimizing emissions in 2015 and future years:

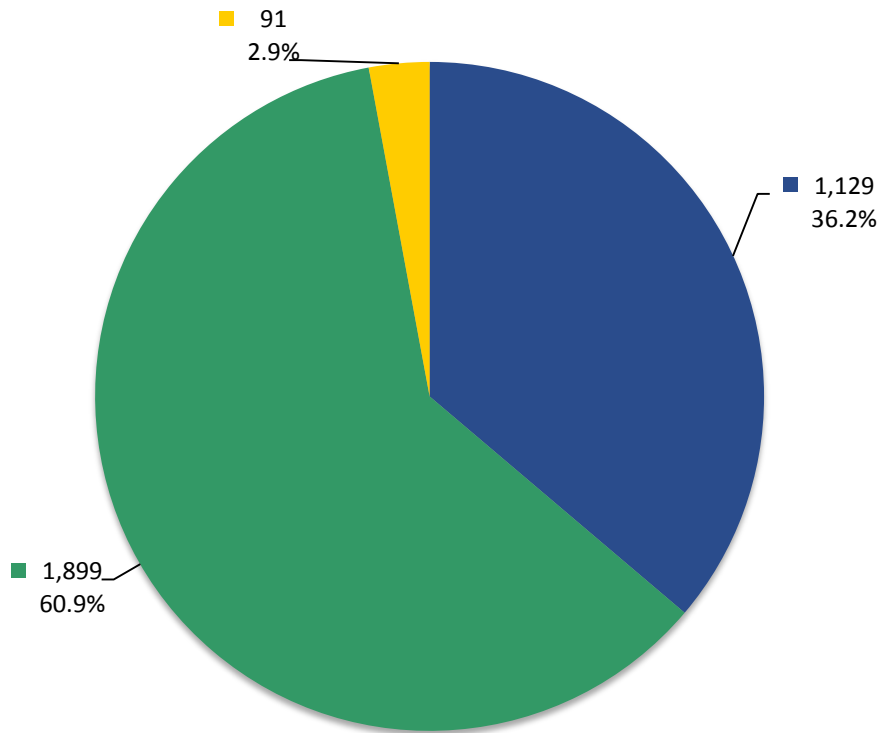
Continue to evaluate bus routes.

Continue training and monitoring for best results.

If you wish to list any other "sustainability actions" outside of buildings, fleet, paper and travel check "yes". This reporting is optional.

No

**School District 83 - North Okanagan-Shuswap
Greenhouse Gas Emissions by Source
for the 2014 Calendar Year (tCO₂e*)**



Total Emissions: 3,119

- 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 2014 (Generated June 23, 2015 3:45 PM)

Total offsets required: **2,165**. Total offset investment: **\$54,125**. Emissions which do not require offsets: **954** **

*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.