Carbon Neutral Action Report - Overview for 2013

This is the 2013 Carbon Neutral Action Report (CNAR) for School District No. 83, North Okanagan Shuswap. This report contains our 2013 emissions profile, offsets purchased, the actions we have taken in 2013 to reduce our GHG emissions and our plans to continue reducing emissions in 2014 and beyond.

By June 30, 2014, School District No. 83 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 2013 emissions were 3,375, the bus fleet exemption was 1,127. With the equivalent of 2,248 tonnes of non-exempt Carbon being reported into SMARTTool, we were required to purchase offsets of $56,200 plus GST, to make School District 83, Carbon Neutral

Emissions and Offsets Summary:

School District No. 83 - GHG Emissions and Offsets for 2013 (TCO2E)	
GHG Emissions created in calendar year 2013 (from SMARTTool Homepage)	
Total Emissions	*3,375*
Total Emissions for Offsets	*2,248*
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 2012 reporting year (if applicable – from May 15 Invoice):	
Credit Owing	*0*
Total Emissions for Offsets for the 2013 Reporting Year (from Offset Invoice):	2,248

Emissions Reduction Activities

Actions Taken to Reduce Greenhouse Gas Emissions in 2013

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.

CO^2 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.

With the mandate to reduce our Carbon Footprint, we have engineered and designed HVAC upgrades for three schools using Geothermal Ground Source Heat Pumps.

The roof replacement program committed to add 2" of isocyanurate insulation on roofs where required, increasing the R value to 20++ and reducing energy costs through heat loss.

Plans to Continue Reducing Greenhouse Gas Emissions 2014 – 2015

Our primary goal is to reduce our dependency on fossil fuels and lower our carbon footprint. One proven method is converting HVAC systems to ground source heat pumps. With this in mind, just considering our three MSUP submissions, we would reduce our carbon footprint by:

- Eagle River Secondary - 129 total tonne CO2 savings.
- Hillcrest Elementary – 85+ total tonne CO2 savings.
- Armstrong Elementary – 65+ total tonne CO2 savings.

According to Engineering, the total potential reduction would be 229+/- total tonne CO2.

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.

Date: June 13, 2014

Glenn Borthistle
Superintendent, SD83, North Okanagan Shuswap

2013 Carbon Neutral Action Report (CNAR) - Part 2 ACTIONS

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Updated Friday, May 30, 2014
https://fluidsurveys.com/surveys/cas-z/2013-cnar-form-bps-actions/07a5eb5a2a655f186b38b12ec09193cd/

Page 1

Please complete the following sections of the 2013 Carbon Neutral Action Report form. Save your work frequently to prevent it from being lost. You can also save a copy for your own use as either a WORD or PDF file using the buttons at the bottom of each page.

This is Part 2 of the Carbon Neutral Action Report form. This section reports on actions taken to reduce emissions during the 2013 calendar year. This information will be included in your final Carbon Neutral Action Report posted on the Ministry of Environment website.

When the form is complete press the submit button on the last page to automatically submit the information to the Climate Action Secretariat (CAS). Do not press submit before you are ready – this may result in a loss of work.

In addition to completing this survey (Part 1 2), you are required to submit your completed Overview (Executive Summary) and Self-Certification Checklist. The 2013 Overview template was included in the email sent and can also be found on the LiveSmart leaders Community.

Please ensure you meet the following reporting deadlines:

A DRAFT 2013 CNAR is due to CAS by March 31, 2014. The draft is comprised of the Overview ONLY (no excutive sign-off required).

The FINAL 2013 CNAR is due to CAS by May 30, 2014. The final 2013 CNAR includes Part 1 Part 2 survey form and Overview.

The Self-Certification Checklist is due to CAS by May 15, 2014.
For more information about the Carbon Neutral Government process, please refer to *Becoming Carbon Neutral 2013*, or should you have any questions please contact climateactionsecretariat@gov.bc.ca.

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 2013:

Performed energy retrofits on existing buildings

Yes

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

No

Undertook an evaluation of overall building energy use.

Yes

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

Boiler Replacements @ Eagle River Secondary and Shuswap Middle Schools
HVAC Controls - through Continuous Optimization Plan/Hydro/Stantec/Kimco
@ PV Secondary School, Shuswap Middle School, Sullivan, Jackson and AL Fortune sites.

2) Mobile Fleet Combustion (Fleet and other vehicles):

Indicate which actions were taken in 2013:

Do you have a fleet?

Yes

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

No

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:

Continuous driver training and education.
No idle policy.
Monitor, evaluate and change Bus Routes for best efficiency.

3) Supplies (Paper):

Indicate which actions were taken in 2013:

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:

Continue to expand our electronic storage and filing programs.

Actions Taken to Reduce Emissions - continued

Explain how you plan to continue minimizing emissions in 2014 and future years:

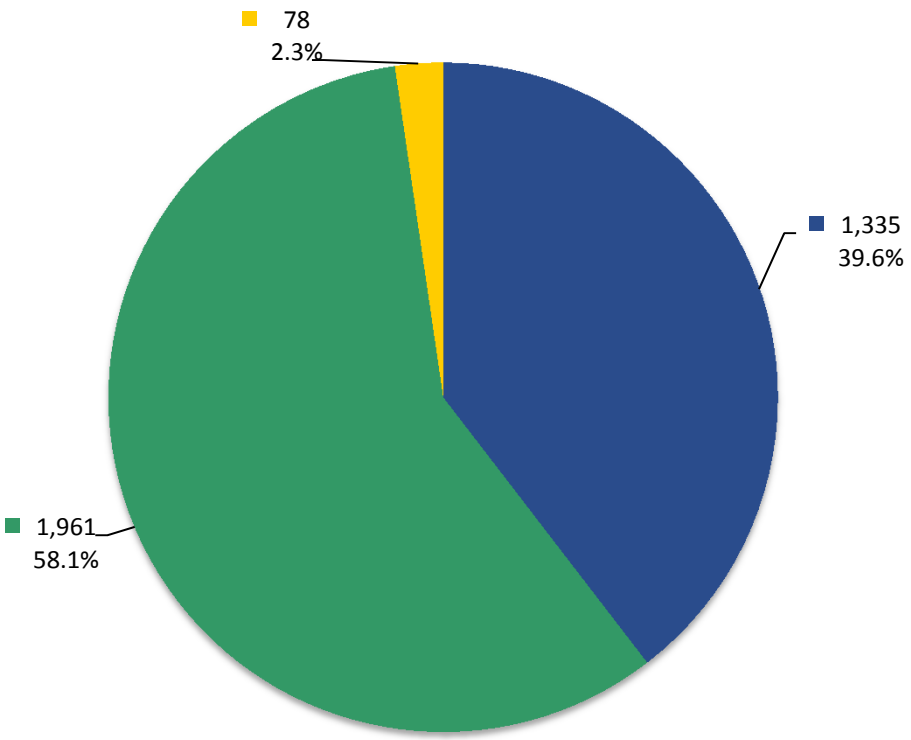
All new buildings to be designed and built to Leed Gold Standards.

Annual energy consumption reviews.

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 2013 Calendar Year (tCO_2e*)



Total Emissions: 3,375

- 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 2013 (Generated May 21, 2014 4:17 PM)

Total offsets required: **2,248**. Total offset investment: $**56,200**. Emissions which do not require offsets: **1,127** **

*Tonnes of carbon dioxide equivalent (tCO_2e) 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.