



# School District No. 23 (Central Okanagan) – 2015 Carbon Neutral Action Report

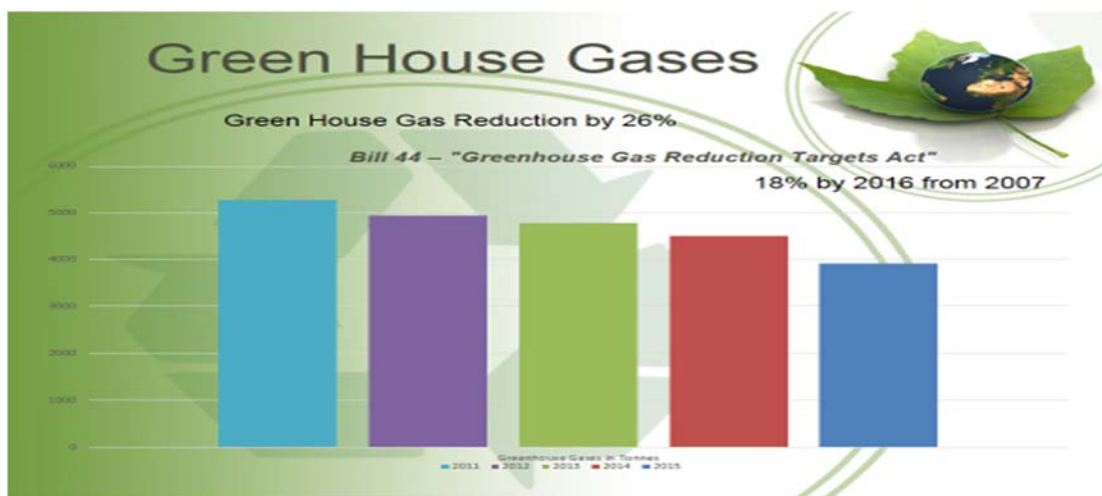
*“Together We Learn”*

As the finalized, This Carbon Neutral Action Report for the period January 1st, 2015 to December 31st, 2015 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2015 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2016 and beyond. By June 30th, 2015, the School District No.23 final CNAR will be posted to our website at [www.sd23.bc.ca](http://www.sd23.bc.ca)

One of our foremost accomplishments is that SD23 has lowered its greenhouse gas emissions by 26 per cent below 2007 levels. British Columbia’s [Greenhouse Gas Reduction Targets Act \(GGRTA\)](#) legislated in 2007 by the Province of British Columbia, the GGRTA requires all of BC’s public sector organizations (PSOs) by law to be carbon neutral by 2010 – this includes all BC school districts and post-secondary institutions. The GGRTA sets aggressive targets for reducing greenhouse gas emissions (GHGs). In 2007, Environment Minister Barry Penner announced that the B.C. Government has reviewed and accepted the recommendations of the Climate Action Team (CAT) for interim greenhouse gas reduction (GHG) targets. School District No.23 is well on track to meet our 2020 GHG targets.

***GHG reduction target;***

- 6 per cent below 2007 levels by 2012
- 18 per cent below 2007 levels by 2016
- 33 per cent below 2007 levels by 2020





In 2015, the compressed natural gas (CNG) school bus fleet expands and continues to hold the promise in reducing carbon emissions and saving Diesel costs. CNG school buses are also appealing because the maintenance on these engines is reduced and the slow-fill fueling system is



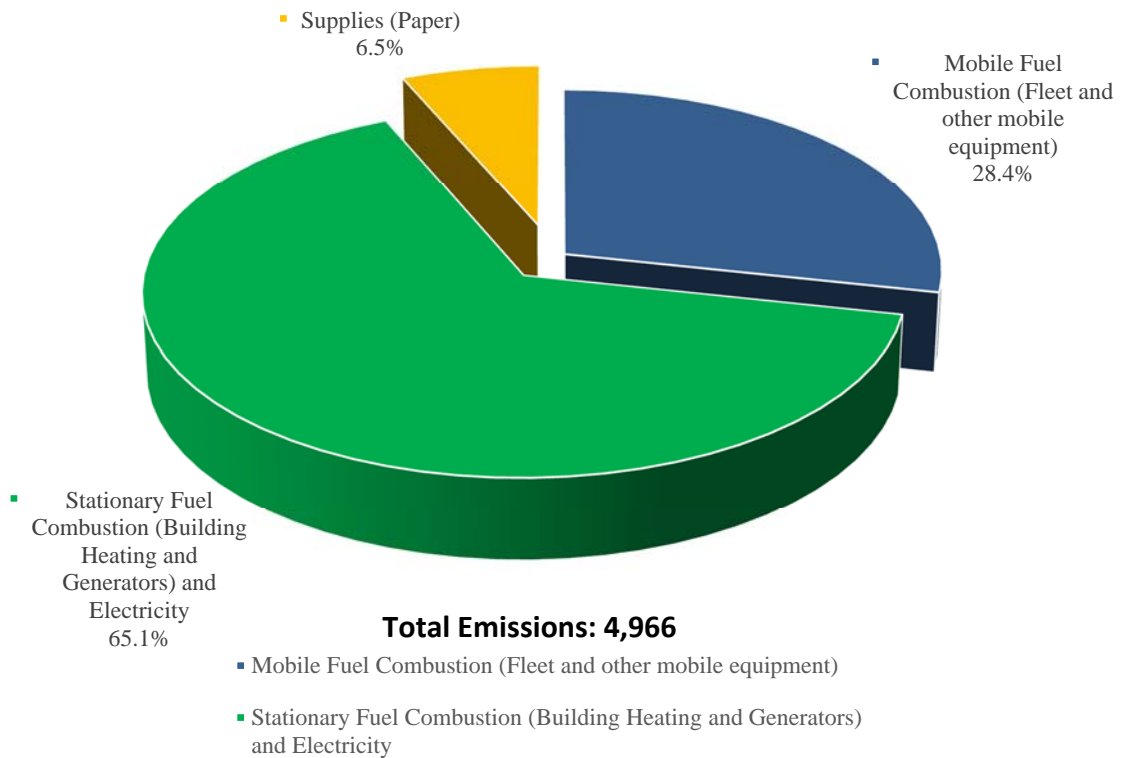
efficient by saving labour hours. Currently, CNG is priced 25% less than diesel. The price of a diesel litre equivalent (DGE) of CNG has become increasingly lower than the price of a litre of diesel. Although the market price of natural gas was fairly volatile in the previous decade, it is expected to stabilize at a level highly competitive with diesel. It now appears the price of natural gas has decoupled from diesel prices. Although financial viability is an important determinant of the achievable potential, several of these segments/scenarios have other important advantages that improve CNG School Buses prospects. For example, the environmental advantage of a CNG School Bus is calculated at 19% in greenhouse gas (GHG) emission reductions. In the context of operating vehicles in the Okanagan Valley, these environmental advantages translate into health advantages which can be fundamental to our environmentally conscious citizens.

In 2015, continuing old boilers replacement with condensing boilers results in less natural gas used. Highly efficient made in British Columbia condensing boilers use less fuel and have lower running costs than other boilers. Higher efficiency levels are made possible by extracting heat contained in the combustion gases, which would otherwise have been lost to the atmosphere. Constable Neil Bruce Middle School Condensing Boiler project achieved an amazing 45% natural gas reduction level the first year of operations. Energy saving equivalent of one 350 student school per year of natural gas usage. A total of 900Gj of natural gas was saved. It is concluded that some standardized low temperature boiler designs and good maintenance practices, as well as the development of control standards for energy demand and greenhouse gas emissions are necessary to improve the energy efficiency in all school buildings. School District 23 is committed to learn from these energy results and share its knowledge in a collaborative environment.

In 2016, LED lighting upgrades will reduce SD23's electrical consumption. LED lighting projects are estimated to reduce the exterior lighting energy costs for those facilities by 80%. School District 23 is excited about the significant energy savings we will achieve and the positive impact on our annual operational costs as a result of this electrical energy initiative.

## Emissions and Offsets Summary:

### School District 23 - Central Okanagan (Kelowna) Greenhouse Gas Emissions by Source



#### Offsets Applied to Become Carbon Neutral in 2015 (Generated May 25, 2016 5:01 PM)

Total offsets required: **3,977**. Total offset investment: **\$99,425**. Emissions which do not require offsets:

\*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.

Fig 1) Emissions Source Report

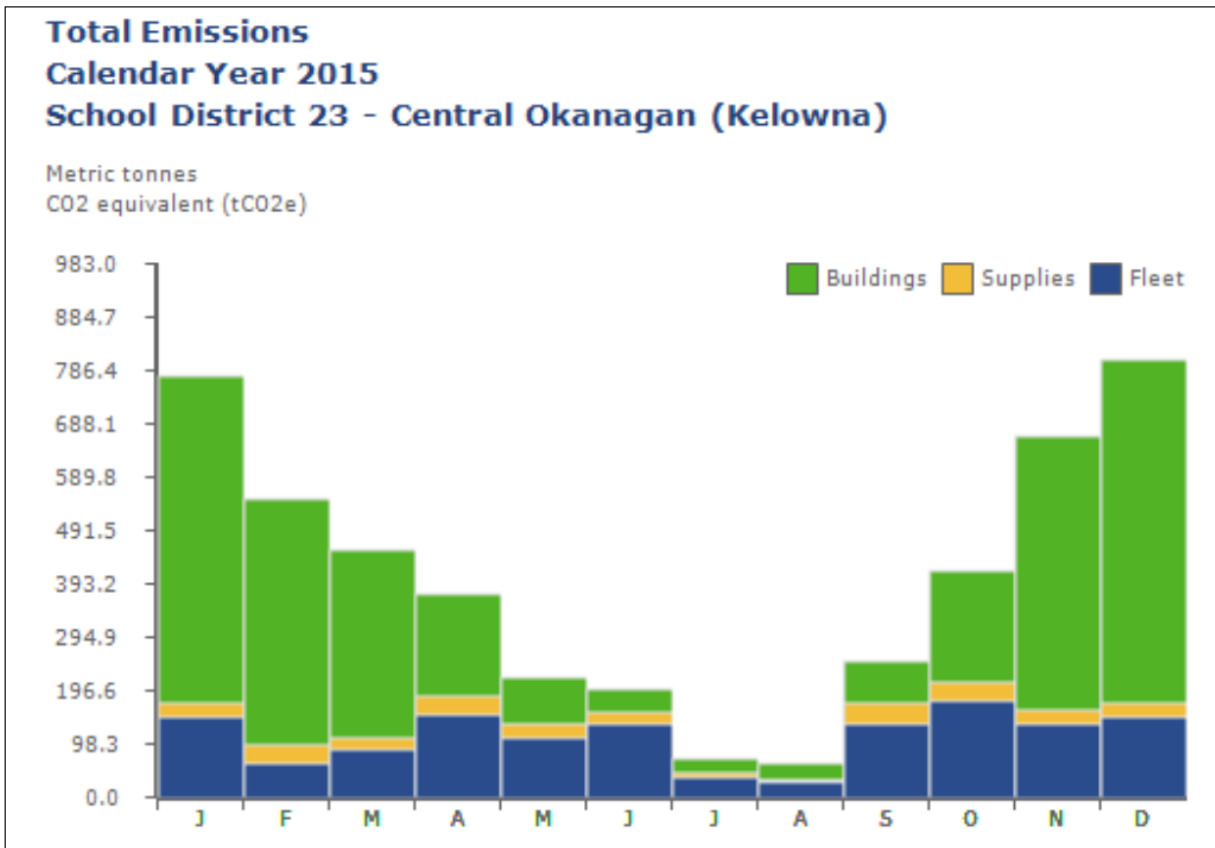


Fig 2) Green House Gas Emission from Fleet, Supplies & Buildings


<b>School District 23 - Central Okanagan GHG Emissions and Offsets for 2015 (TCO2E)</b>	
<b>GHG Emissions created in calendar year 2013</b>	
Total Emissions	4966 tCO <sub>2</sub> e
Total Emissions for Offsets	3977 tCO <sub>2</sub> e
<b>Adjustments to GHG Emissions Reported in Previous Years</b>	
Total Emissions	0 tCO <sub>2</sub> e
Total Emissions for Offsets	0 tCO <sub>2</sub> e
<b>Total Emissions for Offset for the 2015 Reporting Year</b>	
Grand Total Offsets (tCO <sub>2</sub> e)	3977 tCO <sub>2</sub> e



**Retirement of Offsets:**

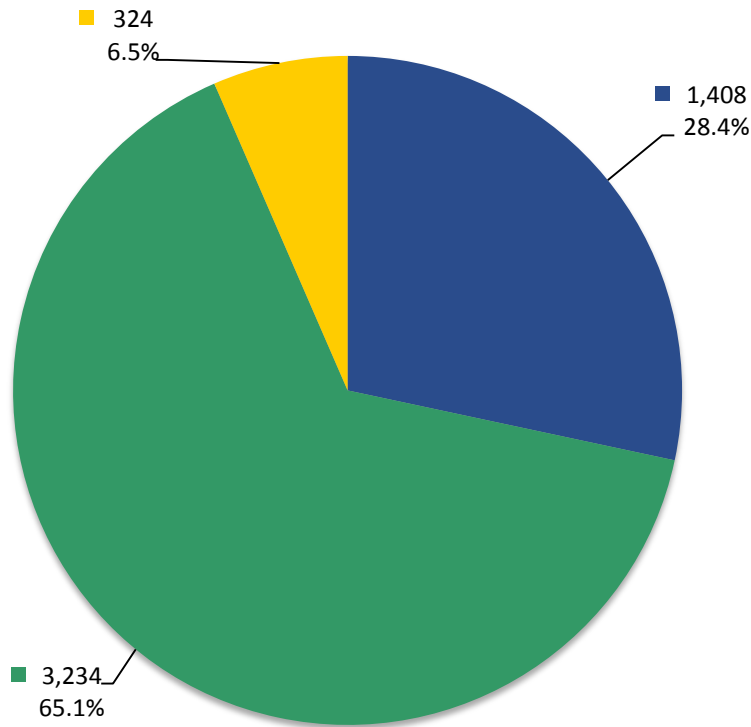
In accordance with the requirements of the Greenhouse Gas Reduction Targets Act and Carbon Neutral Government Regulation, *School District 23 - Central Okanagan* is responsible for arranging for the retirement of the offsets obligation reported above for the 2015 calendar year, together with any adjustments reported for past calendar years. The Organization hereby agrees that, in exchange for the Ministry of Environment ensuring that these offsets are retired on the Organization's behalf, the Organization will pay the associated invoice to be issued by the Ministry in an amount equal to \$25 per tonne of offsets retired on its behalf plus GST.

**Executive sign-off:**

	May 26, 2016
_____ Signature	_____ Date

Kevin Kaardal	Superintendent of Schools/CEO
_____ Name (please print)	_____ Title

**School District 23 - Central Okanagan (Kelowna)  
Greenhouse Gas Emissions by Source  
for the 2015 Calendar Year (tCO<sub>2</sub>e\*)**



**Total Emissions: 4,966**

- 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 2015 (Generated May 26, 2016 9:02 AM)**

Total offsets required: **3,977**. Total offset investment: **\$99,425**. Emissions which do not require offsets: **989** \*\*

\*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.

# 2015 Carbon Neutral Action Report Survey

Organization Name:

*School District No.23 (Central Okanagan)*

Please select your sector:

- School District

1) Stationary Sources (Buildings, Power Generators, Ext. Lighting) Fuel Combustion, Electricity use, Fugitive Emissions:

Please indicate which actions your PSO took in 2015:

Have developed an overall strategy/plan to reduce energy use in your organization's buildings inventory:

*Yes*

If Yes, please describe:

*Strategic planning for a comprehensive energy management plan includes 10 essential components to enhancing our energy management program:*

*Measure/benchmark current energy consumption.*

*Develop a school energy use profile*

*Complete a greenhouse gas (GHG) emissions inventory.*

*Build Energy Star teams*

*Set targets/goals.*

*Develop strategic action plans for improvement.*

*Strategic energy management plan.*

*Implement projects*

*Track, measure, and report.*

*Train, educate, and celebrate.*

Undertook evaluations of building energy use:

*Yes*

Performed energy retrofits on existing buildings:

*Yes*

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

Yes

Please list any other actions, programs or initiatives that your organization has introduced that support emissions reductions from buildings:

*Green Star Energy Schools*



2) Mobile Sources (Fleet, Off-road/Portable Equipment) Fuel Combustion:

Indicate which actions your PSO took in 2015:

Have put in place an operations policy/program to support systematic reductions in fleet related emissions:

(e.g., program to convert fleet to renewable fuels)

*Yes*

If Yes, please describe:

*Compressed Natural Gas Fleet has expanded to the new Recycling/Waste Hauler.*

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

*Yes*

Replaced existing vehicles with hybrid or electric vehicles:

*No*

Took steps to drive less than previous years:

*No*

Please list any other actions, programs or initiatives that your organization has introduced that support emissions reductions from fleet combustion:

*Fuel efficient mowing equipment.*

3) Supplies (Paper):

Indicate which actions your PSO took in 2015:

Have put in place an operations policy/program to facilitate a systematic reduction in paper-related emissions:

(e.g., policy to purchase 100% Recycled Content; default to double-sided printing)

*Yes*

If yes, please describe:

*Advanced photocopying equipment that allows users to login and track their consumption.*

Have put in place an operations policy/program to facilitate behavioural changes from paper use:

(e.g. awareness campaign to reduce paper use):

*Yes*

If yes, please describe:

*School staff are allotted coping credits to encourage conservation.*

Used only 100% recycled paper:

*No*

Used some recycled paper:

*Yes*

Used alternate source paper:

(e.g., bamboo, hemp, wheat etc.)

*Yes*

Please list any other actions, programs or initiatives that your organization has introduced that support emissions reductions from paper supplies:

*(No response)*

4) Other Sustainability Actions:

Please note that this section is optional

Business Travel

Created a low-carbon travel policy or travel reduction goal:

(low-carbon = lowest emission of greenhouse gas per kilometer per passenger)

*No*

Encouraged alternative travel for business:

(e.g. bicycles, public transit, walking)

*No*

Encouraged or allow telework/working from home:

*Yes*

Other:

*(No response)*

Education Awareness

Have a Green/Sustainability/Climate Action Team:

*Yes*

Supported green professional development:

(e.g. workshops, conferences, training)

*Yes*

Supported or provided education to staff about the science of climate change, conservation of water, energy and/or raw materials:

*Yes*

Other:

*(No response)*

## Adaptation Planning for Climate Risks

Have assessed whether increased frequency of extreme weather events and/or long term changes in climate will affect your organization's infrastructure, its employees and/or its clients:

*Yes*

Have incorporated these anticipated changes in climate into your organization's planning and decision making:

*Yes*

Other:

*(No response)*

## Other Sustainability Actions

Established a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models:

*Yes*

Have put in place an operations policy/program to facilitate the reduction and diversion of building occupant waste stream from landfills or incineration facilities:

(e.g., composting, collection of plastics, batteries)

*Yes*

Established green standards for goods that are replaced infrequently and/or may require capital funds to purchase:

(e.g., office furniture, carpeting, etc.)

*Yes*

Incorporated lifecycle costing into new construction or renovations:

*Yes*

Please list any other sustainability actions your organization has taken not listed above:

*(No response)*