

# School District 79 (Cowichan Valley) 2011 Carbon Neutral Action Report

COWICHAN VALLEY  
SCHOOL DISTRICT



## Executive Summary

The Cowichan Valley School District is continuing to move towards carbon neutrality. To this end, School District 79 has undertaken many measures to reduce its carbon footprint. In 2008 a full time Energy Manager was hired to reduce energy consumption and lower the district's carbon footprint. In 2009 the district adopted a policy on Resource Management and Sustainability and formed a Sustainability Committee whose mandate is to deal with issues that contribute to the district's carbon footprint. Long term reduction goals have been adopted which fall in line with the BC Energy Plan and Bill 44-2007: Greenhouse Gas Reduction Targets Act. Many mechanical system upgrades have been undertaken which continue to significantly reduce the district's carbon footprint. The district has continued to work on bus routing to reduce driving distances. The district is also working with BC Hydro on an Energy Awareness Behaviour program to encourage energy efficient practices across the district.

## 2011 Greenhouse Gas Emissions

The total Greenhouse Gas Emissions for 2011 were 3,520.28 tonnes CO<sub>2</sub>e. 71.6% of this came from stationary fuel combustion and electricity, 24.9% came from mobile fuel combustion and 3.5% came from supplies.

## Offsets Applied to Become Carbon Neutral in 2011

Of the total Greenhouse Gas Emissions 664 tonnes CO<sub>2</sub>e resulted from the operation of school buses. As a result of this the total GHG Emissions that were offset to become Carbon Neutral for 2011 was 2856 tonnes CO<sub>2</sub>e. This resulted in a payment of \$71,400.00 plus HST which was paid to the Pacific Carbon Trust.

## Changes to Greenhouse Gas Emissions and Offsets Reporting from Previous Years

Following the public release of School District 79 Cowichan Valley's 2010 Carbon Neutral Action Report, it was determined that the total emissions for the 2010 calendar year were under reported, due to late arrival of billing data, by 136 tonnes CO<sub>2</sub>e.

The difference in offsets have been purchased from the Pacific Carbon Trust and applied against our 2010 emissions.

The total Greenhouse Gas Emissions for 2010 were 3,578 tonnes CO<sub>2</sub>e, of that 2,779 tonnes CO<sub>2</sub>e required the purchase of offsets.

## **Emissions Reduction Activities**

### **Actions Taken to Reduce Greenhouse Gas Emissions in 2011**

By working on bus routes district wide the Transportation Department was able to further reduce annual bus travel distances.

The Operations Department has done a number of lighting and lighting control projects to reduce the district's electrical consumption. Many heating system projects have been undertaken to make systems operate more efficiently.

Six oil furnaces were replaced with natural gas furnaces which are more efficient and have much lower carbon emissions.

The I.T. Department installed Power Management Software on the computers in all of the Elementary School computer labs this year. All computers in computer labs across the district now have Power Management Software installed.

### **Plans to Continue Reducing Greenhouse Gas Emissions 2012 – 2014**

The district will continue to implement projects in an effort to continue reducing energy consumption and greenhouse gas emissions.

Lighting projects which will eliminate the last T12 fluorescent fixtures as well as many interior Metal Halide light fixtures will be implemented.

Mechanical system upgrades will be undertaken in a number of facilities. Capital plan submissions are being prepared for the replacement of some of the district's oldest and least carbon friendly heating plants.

The Transportation Department will continue to monitor routing in an effort to reduce driving distances.

The communication of Energy Efficient and Sustainable practices will continue district wide in an effort to promote the overall awareness of sustainability issues.

A handwritten signature in blue ink, appearing to read 'R. Harper', is written over a horizontal line.

Robert Harper, Secretary-Treasurer

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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 *Greenhouse Gas Reduction Targets Act*.

Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
<b>Mobile Fuel Combustion (Fleet and other mobile equipment)</b>							
<b>Vehicle fuel efficiency</b>							
Replace vehicles with more fuel-efficient models	Ongoing/In Progress	64	% of vehicles are fuel- efficient models	2 of 39 buses replaced with the new DPF system and SCR system.	4 buses will be replaced with the new DPF system and SCR system in 2012. Vehicle replacement will continue as budget allows.	2000	No End Date (Continuous)
Perform regular fleet maintenance specifically to improve fuel-efficiency	Ongoing/In Progress	100	% of vehicles are subject to regular maintenance for fuel efficiency	Oil, Lube and filter changes on: busses every 4000 km, operations vehicles every 2800km. Tune-ups as required. This is all done by mechanics in house.	Maintain current maintenance schedules.	Started before 1995	No End Date (Continuous)
Replace small maintenance vehicles with more fuel-efficient models	Ongoing/In Progress	50	% of small maintenance vehicles are fuel-efficient	Replaced 2 maintenance vehicles with more fuel efficient models.	Continually replace vehicles as budgets allow.	2008	No End Date (Continuous)
<b>Behaviour change program</b>							
Provide fleet driver training to reduce fuel use	Ongoing/In Progress	100	% of current drivers are trained	All new drivers coming online are trained. Refresher courses are run for all drivers.	Continued training for all new drivers and refreshers for existing drivers.	2009	No End Date (Continuous)
Introduce anti-idling policy and/or raise anti-idling awareness for fleet drivers (e.g., signs, stickers, messages)	Ongoing/In Progress	100	% of current drivers are trained	Anti-idling packages supplied to drivers and ongoing training.	Refreshers, current materials and statistics will be provided.	2009	No End Date (Continuous)
Encourage carpooling in fleet vehicles	Ongoing/In Progress	100	% of staff encouraged to carpool	Carpooling is continually encouraged.	Continue promoting carpooling.	2007	No End Date (Continuous)
Promote alternatives to fleet vehicle travel where possible (e.g., bicycles, public transit, walking)	Ongoing/In Progress	100	% of staff encouraged to use alternative transit	Worked with local transit to encourage schedule merging.	Continue collaboration with local transit.	2011	No End Date (Continuous)
<b>Other Mobile Fuel Combustion Actions</b>							
Produce more efficient bus routes	Ongoing/In Progress			Increased load sizes and reduce kilometers travelled.	Plan for further reduction of kilometers travelled.	2009	No End Date (Continuous)
Encourage slower and more efficient driving	Ongoing/In Progress	100	% of drivers encouraged to drive more efficiently	Maximum speeds are set on buses and training is ongoing	Provide monthly printouts of driving habits to drivers to encourage more efficient driving habits.	2009	No End Date (Continuous)
Direct deliveries to school sites	Ongoing/In Progress			When possible items are shipped direct to sites where they are needed.	Continue to use individual site delivery.	2004	No End Date (Continuous)
<b>Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)</b>							
<b>Planning/management</b>							
Enroll in a building energy benchmarking program (e.g., GREEN UP)	Ongoing/In Progress	100	% of buildings with benchmarking	Compare building performance with other similar buildings through SD Energy Managers.	Establish a province wide benchmark.	2009	No End Date (Continuous)
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	Ongoing/In Progress	11	% of buildings have a real time metering system installed	Pulse metering installed at 3 sites in 2011.	Pulse metering at 7 sites by 2014. Investigate real time metering in conjunction with BC Hydro Smart Meters.	2009	No End Date (Continuous)
<b>Owned buildings</b>							

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Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	Ongoing/In Progress			Maintain communication with staff regarding tracking of refrigerant during maintenance	Establish a tracking protocol.	2010	2013
Perform energy retrofits on existing, owned buildings	Ongoing/In Progress	38	% of owned buildings have undergone energy retrofits since start year indicated	Replaced 6 oil furnaces with natural gas units. Upgrades to mechanical systems at 7 sites. Install lighting controls in gymnasiums.	Mechanical, control and lighting system upgrades scheduled for multiple sites for 2012 - 2014.	2009	No End Date (Continuous)
<b>Retrofitting owned buildings</b>							
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	30	% of retrofits since start year indicated had heating, cooling, and ventilation systems upgrades	10 different HVAC projects took place across the district.	Continue upgrades to old and inefficient HVAC systems.	2009	No End Date (Continuous)
Upgrade lighting systems during retrofits	Ongoing/In Progress	15	% of retrofits since start year indicated had lighting systems upgrades	Replace T12 fluorescent fixtures with T8 fluorescents. Replace any standard incandescent lamps with CFL lamps.	Complete replacement of T12 fluorescent fixtures in the last active facility. Replace interior Metal Halide fixtures.	1998	No End Date (Continuous)
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	90	% of retrofits since start year indicated had control system upgrades or adjustments	All HVAC projects contained DDC upgrades. Lighting controls were added to any gymnasium that didn't already have them.	DDC upgrades to take place in conjunction with all HVAC retrofits.	1998	No End Date (Continuous)
Improve building insulation (including windows) during retrofits	Ongoing/In Progress	6	% of retrofits since start year indicated had insulation improvements	Some small building envelope work done in conjunction with HVAC projects.	Work on applications for building envelope projects. Start window replacement projects.	2009	No End Date (Continuous)
<b>IT power management</b>							
Install power management software which shuts down computers outside of regular business hours	Ongoing/In Progress	75	% of computers shut down automatically outside of regular business hours	Project started to install power management software in elementary schools.	Complete installation in elementary schools.	2009	2012
Implement server virtualization	In Development				Planning	2010	No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Ongoing/In Progress	95	% of computers have auto-sleep settings applied	Sleep settings are set when computers are added to system.	Sleep settings are set when computers are added to system.	1998	No End Date (Continuous)
Apply auto-sleep settings on printers, copiers, fax machines, and/or multi-function devices	Ongoing/In Progress	100	% of devices have auto-sleep settings applied	Sleep settings are set when computers are added to system.	Sleep settings are set when computers are added to system.	1998	No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress	95	% of computers are ENERGY STAR rated	All new computers are ENERGY STAR rated.	All new computers are ENERGY STAR rated.	2004	No End Date (Continuous)
<b>Appliances and electronic devices</b>							
Replace refrigerators with ENERGY STAR models or source ENERGY STAR models for future purchases	Ongoing/In Progress	15	% of fridges are ENERGY STAR rated	All new refrigerators purchased have ENERGY STAR rating.	All new refrigerators purchased have ENERGY STAR rating.	2000	No End Date (Continuous)
Replace other appliances or electronic devices with ENERGY STAR models or source ENERGY STAR models for future purchases	Ongoing/In Progress			All new electronic purchases have ENERGY STAR rating.	All new electronic purchases have ENERGY STAR rating.	2000	No End Date (Continuous)
Replace desk lamp incandescent bulbs with compact fluorescent (CFL) bulbs or source more efficient desk lamps for future purchases	Ongoing/In Progress			CFL lamps are standard replacement for all incandescent lamps.	CFL lamps are standard replacement for all incandescent lamps.	2006	No End Date (Continuous)

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Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
<b>Behaviour change program</b>							
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress			Green Tips distributed district wide on a regular basis.	Green Tips distributed district wide on a regular basis.	2009	No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Ongoing/In Progress			Green Tips distributed district wide on a regular basis.	Green Tips distributed district wide on a regular basis.	2009	No End Date (Continuous)
Provide tips to staff on saving energy in the office while working outside of regular business hours	Ongoing/In Progress			Green Tips distributed district wide on a regular basis.	Green Tips distributed district wide on a regular basis.	2009	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress			Signs and stickers put up at sites involved in Workplace Conservation Awareness program.	Expand WCA program district wide.	Started before 1995	No End Date (Continuous)
Promote hot water conservation	Ongoing/In Progress			Turn down temperature on domestic hot water where ever possible.	Turn down temperature on domestic hot water where ever possible.	2007	No End Date (Continuous)
<b>Supplies (Paper)</b>							
<b>Paper Type</b>							
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	67	% of total paper purchased contains 30% recycled content	Staff are encouraged to purchase paper with recycled content.	Staff will continue to be encouraged to purchase paper with recycled content.	2009	No End Date (Continuous)
Purchase 100% post-consumer recycled paper	Ongoing/In Progress	11	% of total paper purchased contains 100% recycled content	Staff are encouraged to purchase paper with recycled content.	Staff will continue to be encouraged to purchase paper with recycled content.	2009	No End Date (Continuous)
<b>Printer/document settings</b>							
Switch networked printers and photocopiers to automatic double-sided	In Development				Develop district standard.	2010	2013
Apply "print and hold" settings to networked printers to eliminate unclaimed print jobs	Ongoing/In Progress	5	% of network printers have 'print and hold' settings applied	Utilized for confidential documents.	Develop district standard.	2009	No End Date (Continuous)
<b>Electronic media in place of paper</b>							
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	In Development	5	% of staff workstations with software installed		Develop district standard.	2010	No End Date (Continuous)
Use electronic document library for filing common documents	In Development				Working on District Library.	2010	No End Date (Continuous)
Post materials online that were previously printed	Ongoing/In Progress			Newsletters, notices and meeting information available online.	Continue expanding scope.	2009	No End Date (Continuous)
Switch to an electronic payroll notification system in place of paper pay stubs	Ongoing/In Progress			Some maintenance staff have been added to the system voluntarily. All other staff are on system.	Include the rest of maintenance staff on system.	2009	2013
<b>Behaviour change program</b>							
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	In Development	2	% of staff currently have received collaborative software training		Continue to develop district program.	2010	No End Date (Continuous)

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Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)	Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress		Majority of committee meetings are paperless. Projectors and/or Smart Boards installed in meeting rooms at School Board office.	All committees will continue to be encouraged to hold paperless meetings.	2009	No End Date (Continuous)
Encourage re-use of scrap paper	Ongoing/In Progress		Done with most non-secure documents.	Continue to encourage.	2010	No End Date (Continuous)

## School District 79 Cowichan Valley - 2011 Carbon Neutral Action Report

### Actions to Reduce Provincial Emissions and Improve Sustainability

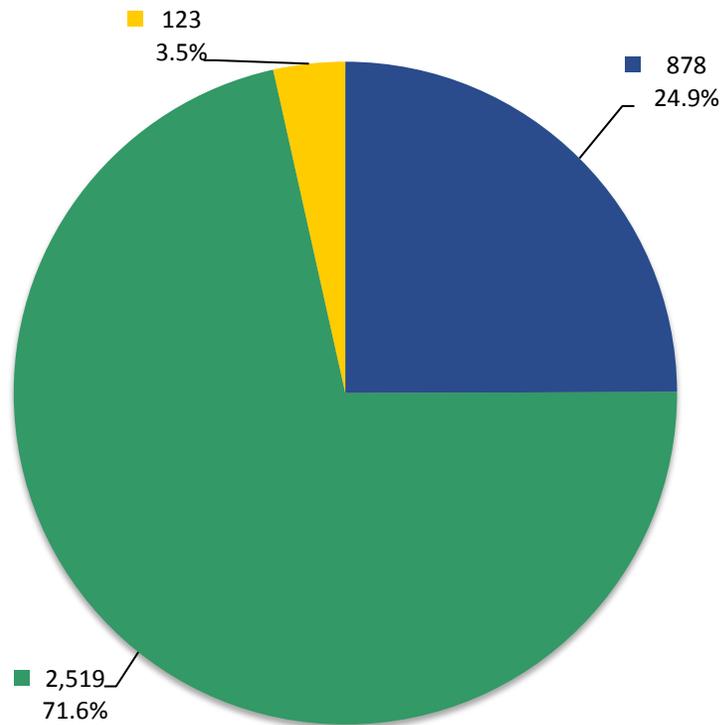
The actions listed below contribute to a reduction in greenhouse gas emissions from sources that fall outside of the reporting requirements defined in the carbon neutral government regulation of the *Greenhouse Gas Reduction Targets Act*. Public sector organizations can optionally use this section to report on actions that will help British Columbia meet its provincial greenhouse gas reduction targets, engage the public, and improve environmental sustainability across all aspects of their organization.

Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)	Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
<b>Business Travel</b>						
<b>Virtual meeting technology</b>						
Install web-conferencing software (e.g., Live Meeting, Elluminate, etc.)	Ongoing/In Progress	5 % of computers have web-conferencing software installed	Software loaded when required.	Software available to all staff as required.	2007	No End Date (Continuous)
Make desktop web-cameras available to staff	Completed in 2011	100 % of staff have access to a desktop web-camera	Web-cameras made available to all staff that don't already have them built into their computers.		2007	2011
Install video-conferencing units in meeting rooms or provide mobile video-conferencing units	Completed in 2011	100 % of meeting rooms have access to video-conferencing equipment	Meeting rooms with video conference capabilities available at all sites.		2007	2011
<b>Behaviour change program</b>						
Train staff in web-conferencing	Ongoing/In Progress	10 % of staff are trained web-conferencing	I.T. staff have been trained and are available for meeting set-up.	Continue to have I.T. staff available for meeting set-up.	2008	No End Date (Continuous)
Encourage staff to consider virtual attendance/presentation at events where possible	Ongoing/In Progress		Staff encouraged to access video conferencing when ever possible.	Continue to encourage staff to access video conferencing when ever possible.	2009	No End Date (Continuous)
Encourage carpooling to meetings	Ongoing/In Progress		Carpooling encouraged when ever possible.	Continue to encourage carpooling.	2009	No End Date (Continuous)
Encourage alternative travel to meetings (e.g., bicycles, public transit, walking)	Ongoing/In Progress		Alternative travel encouraged when ever possible.	Continue to encourage alternative travel.	2009	No End Date (Continuous)
<b>Education, Awareness, and Engagement</b>						
<b>Team-building</b>						
Create Green, Sustainability, Energy Conservation, or Climate Action Teams with executive endorsement	Ongoing/In Progress		BC Hydro WCA program was in place. The program was put on hold for this year due to teacher job action.	Expand program to include all sites.	2009	No End Date (Continuous)
Provide resources and/or dedicated staff to support teams	Ongoing/In Progress		Sustainability committee, Energy Manager and BC Hydro programs.	Sustainability committee, Energy Manager and BC Hydro programs.	2009	No End Date (Continuous)
Providing behaviour change education/training to teams (e.g., community-based social marketing)	Ongoing/In Progress		This is done through the BC Hydro WCA program which is on hold for 2011 due to teacher job action.	Expand program to include all sites.	2010	No End Date (Continuous)
<b>Awards/Recognition</b>						
Establish a sustainability/green awards or recognition program	Ongoing/In Progress		This is done through the BC Hydro WCA program which is on hold for 2011 due to teacher job action.	Expand program to include all sites.	2010	No End Date (Continuous)
<b>Staff Professional Development</b>						
Support green professional development (e.g., workshops, conferences, training)	In Development			Address in Sustainability committee.	2010	No End Date (Continuous)
<b>Staff awareness/education</b>						

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Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)	Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Provide education to staff about the science of climate change	Ongoing/In Progress		Information available through BC Hydro Education programs.	Continue participating in BC Hydro programs.	2002	No End Date (Continuous)
Provide education to staff about the conservation of water, energy, and raw materials	Ongoing/In Progress		Information available through BC Hydro Education programs, BC Green Games, Lights Out Canada and other programs.	Continue to look for sources of information.	2010	No End Date (Continuous)
Provide green tips on staff website or in newsletters	Ongoing/In Progress		Green Tips distributed through district e-mail.	Continue to distribute Green Tips through district e-mail.	2009	No End Date (Continuous)
<b>Other Sustainability Actions</b>						
<b>Water conservation</b>						
Establish a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models	Ongoing/In Progress		Low flow fixtures used during renovations and retrofits.	Low flow fixtures used during renovations and retrofits.	2004	No End Date (Continuous)
<b>Waste reduction/diversion</b>						
Put in place an operations policy to facilitate the reduction and diversion of building occupant waste from landfills or incineration facilities	Ongoing/In Progress		Many sites have developed recycling and composting programs.	Expand recycling and composting programs.	2005	No End Date (Continuous)
Implement a hazardous waste reduction and disposal strategy	Ongoing/In Progress		Hazardous waste disposed of through environmental contractors.	Hazardous waste disposed of through environmental contractors.	Started before 1995	No End Date (Continuous)
<b>Procurement (non-paper supplies)</b>						
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	Ongoing/In Progress		Majority of cleaning products are eco-seal rated.	Majority of cleaning products are eco-seal rated.	2007	No End Date (Continuous)
<b>Building construction, renovation, and leasing</b>						
Incorporate lifecycle costing into new construction or renovations	In Development			Ministry Capital Asset Management program in development.	2010	No End Date (Continuous)
<b>Indoor air quality</b>						
Enforce a scent-free policy (e.g., no strong perfumes, deodorants, etc.)	Ongoing/In Progress		Scent awareness information made available throughout district.	Keep scent awareness information available.	2009	No End Date (Continuous)
<b>Commuting to and from home</b>						
Encourage commuting by foot, bicycle, carpool or public transit	Ongoing/In Progress		Staff are encouraged to carpool or use alternative transportation. District participated in bicycle to work week.	Staff will continue to be encouraged to carpool or use alternative transportation.	1995	No End Date (Continuous)
Provide shower or locker facilities for staff/students who commute by foot or by bicycle	Ongoing/In Progress		Showers and lockers available at many sites.	Showers and lockers available at many sites.	1995	No End Date (Continuous)
Provide secure bicycle storage	Ongoing/In Progress		Bicycle storage available at all sites.	Bicycle storage available at all sites.	1995	No End Date (Continuous)

**School District 79 - Cowichan Valley  
Greenhouse Gas Emissions by Source  
for the 2011 Calendar Year (tCO<sub>2</sub>e\*)**



**Total Emissions: 3,520**

- 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 2011 (Generated May 18, 2012 12:35 PM)**

Total offsets required: **2,856**. Total offset investment: **\$71,400**. Emissions which do not require offsets: **664** \*\*

\*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.