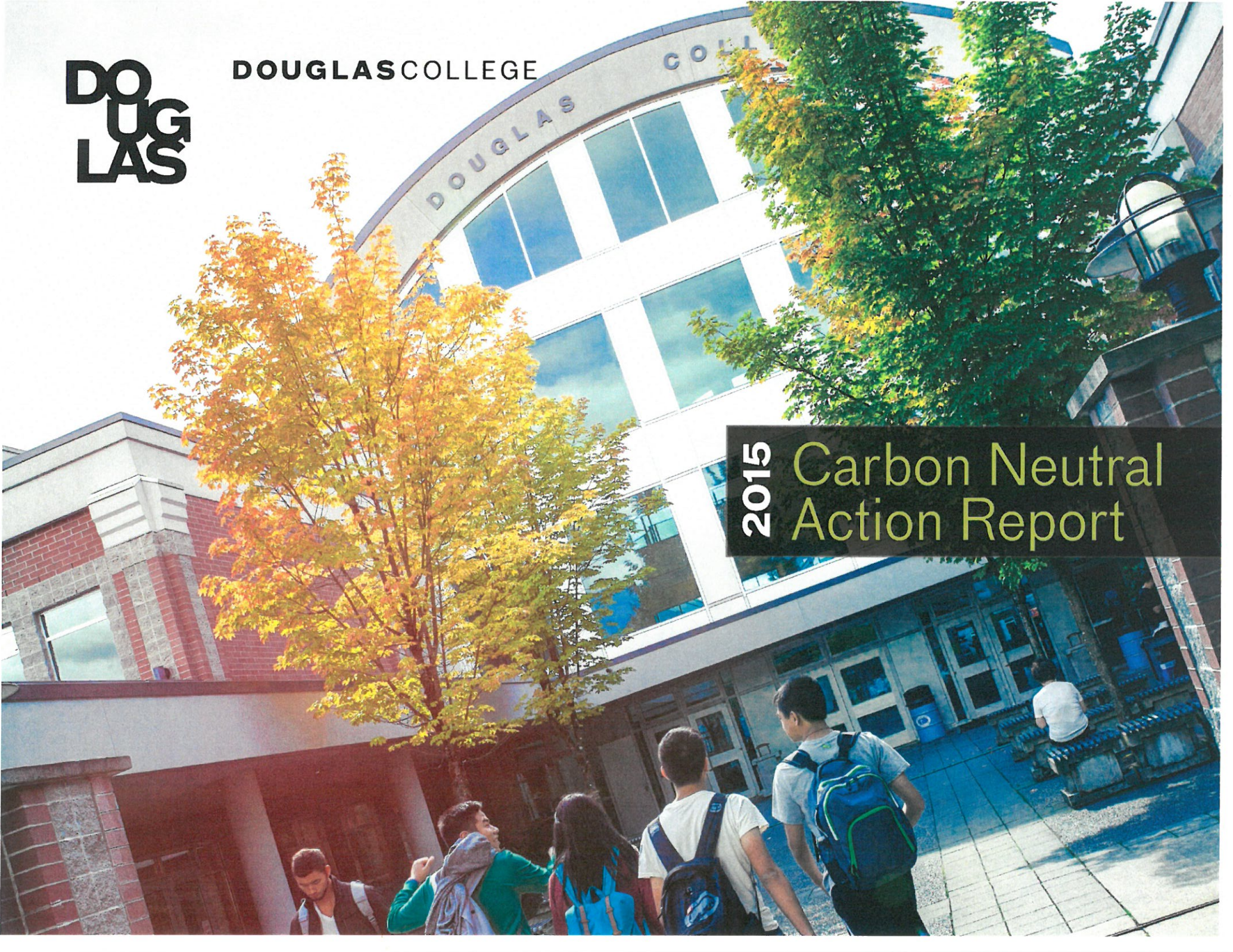




DOUGLAS COLLEGE

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2015 Carbon Neutral
Action Report





Executive Summary

Douglas College continues to be concerned about the quality of the natural environment and building a sustainable society. As a significant public sector organization, the College has a responsibility to enable our community to become knowledgeable about the environment, and to become environmentally responsible. To educate by example, Douglas College demonstrates positive environmental citizenship by taking all reasonable efforts to make environmentally sound decisions.

Douglas College continues to investigate opportunities provided by organizations such as BC Hydro's Power Smart programs and initiatives, Public Sector Energy Conservation Agreement (PSECA), Energy Canada (Enercan), and the Ministry of Advanced Education. These relationships provide access to a variety of resources to enable us in the development of a college-wide environmental sustainable energy management plan that focuses on achievable, sustainable and measurable results.

Douglas College is committed to demonstrating quality environmental stewardship, and internal and external resources are being developed. In this past year, Douglas College, via RETScreen, has established an energy usage baseline for measurement of Energy and Greenhouse Gas reduction targets. Through consultation with experts and community partners, we will monitor our progress against our plan, and update our procedures based on experience gained.

Executive Approval

Tracey Szirth

Vice President, Administrative Services and CFO

Date



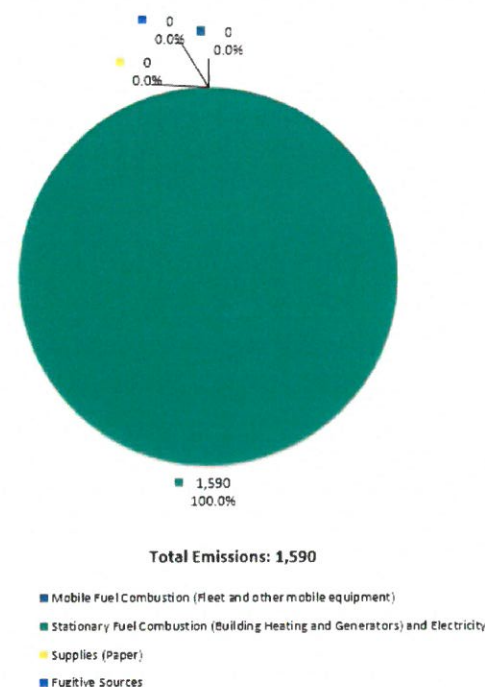
2015 Greenhouse Gas Emissions

In 2015, the total greenhouse gas emissions from all sources covered by the Greenhouse Gas Reduction Targets Act was 1590 tCO₂e.

Offsets Applied to become Carbon Neutral in 2015

Douglas College recognizes that we are responsible for 100% of the carbon emissions generated by the College. Achieving carbon neutrality involved measuring GHG emissions, reducing emissions where possible, and offsetting the remainder through the purchase of carbon offsets. To become carbon neutral Douglas College purchased offsets equivalent to 1590 tonnes of CO₂ through the Climate Action Secretariat.

Douglas College
Greenhouse Gas Emissions by Source
for the 2015 Calendar Year (tCO₂e*)

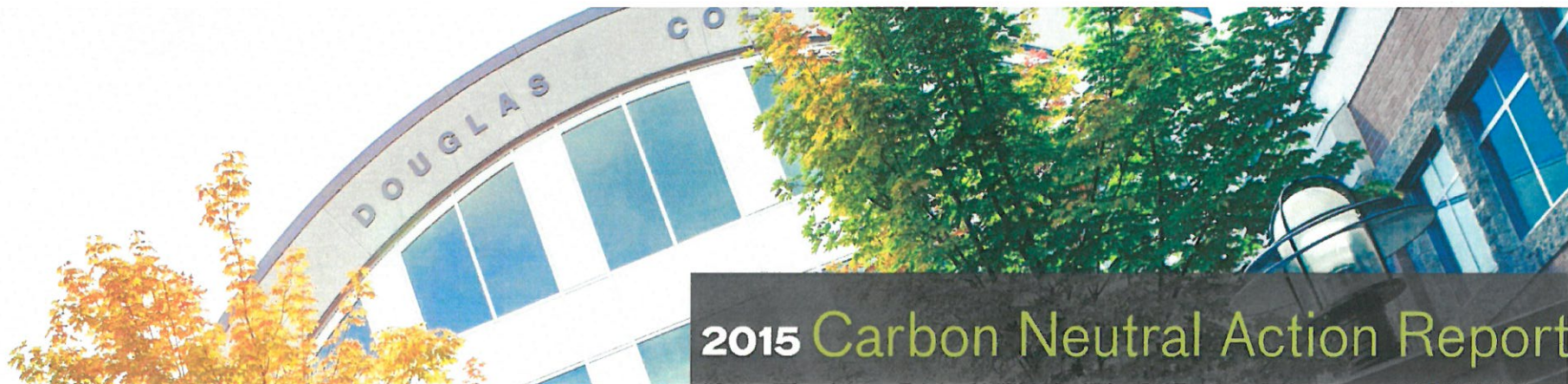


Offsets Applied to Become Carbon Neutral in 2015 (Generated June 21, 2016 2:00 PM)

Total offsets required: 1,590. Total offset investment: \$39,750. Emissions which do not require offsets: 0**

*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.



Emission Reduction Activities in 2015

Key initiatives taken between January 1, 2015 and December 31, 2015 to reduce greenhouse gas emissions include:

New Westminster campus:

- Through a jointly funded BC Hydro and Fortis BC initiative, completed an ASHRAE level two audit
- Based on a ventilation review by Stantec Consulting, adjusted control algorithms to track all exhaust fans and adjust ventilation rates to reduce energy waste
- Upgraded twenty eight pneumatically controlled to DDC controlled VAV boxes and during commissioning of controllers, identified and repaired numerous main duct air leaks
- Replaced one standard duty motor with high efficiency motor (one 15hp)
- Completed miscellaneous lighting upgrades including the replacement of lobby lighting in the Office of the Registrar with dimmable LED pot & strip lights; replaced 43 T-12 fixtures with T-8 fixtures
- For the new main network/communications equipment room, replaced six tonnes of refrigeration with a new computer room AC unit (CRAC), with a free cooling option. The CRAC runs in free cooling mode most of the year, which will result in reduced water use (old unit was water cooled) and also reduce electrical consumption
- Replaced all circuit breakers in the main vault with new breakers that provide real time consumption data, allowing for detailed energy tracking



Emission Reduction Activities – continued

Coquitlam campus:

- Completed miscellaneous lighting upgrades including; continued updating of lighting schedules to reduce energy, replacement of T-8 and pot light fixtures in meeting room B3131 with dimmable LED fixtures
- Programmed DDC control algorithms to control variable speed pumps on the secondary heating loops. The pump speed adjusts to meet secondary loop static pressure reducing electrical consumption
- Initiated a six month pilot project to collect mixed plastics for recycling

Both campuses:

- Effective September 2015, implemented a standard temperature initiative for classroom, labs and common areas based on the season. During the winter heating season, temperature set points are adjusted to 21°C. During the summer cooling season, temperature set points are adjusted to 23°C

Reviewed and updated HVAC system operating schedules to match building occupancy, pump run-times to reduce operating times, reset schedules for AHU supply air temperature and where possible, decommissioned redundant equipment



Plans to Continue Reducing Greenhouse Gas Emissions 2016 – 2017

As part of a 3000 sq. m. renovation and renewal project underway in 2016 at the New Westminster campus, the following energy reduction measures were included in the design:

- LED lighting, programmable low voltage lighting controls, astronomical time clock, daylight sensing and occupancy sensors
- Occupancy sensors connect to HVAC terminal boxes, fan wall AHU system with variable speed drives and carbon dioxide sensors to adjust ventilation rates to match occupancy requirements
- Double pane, low-e, argon filled windows, upgrade fibreglass insulation with spray foam insulation/vapour barrier

Douglas College is committed to researching and initiating where feasible, short and long term initiatives to promote environmental sustainability while meeting provincially mandated legislation for the reduction of Greenhouse Gas Emissions.

The College will continue to pursue sustainability initiatives and has launched an ongoing awareness campaign to encourage our employees to think creatively and to act on reducing consumption in the workplace and take on the challenge of modeling new personal behaviour around sustainability.

2015 Carbon Neutral Action Report Survey

Organization Name:

Douglas College

Please select your sector:

- Post-Secondary Institution

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:

No

If Yes, please describe:

(No response)

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:

No

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

A number of minor mechanical and lighting upgrades were completed in 2015 and duplex printing is now default for all Multi-Function Devices (MFD's). Completed an ASHRAE Level 2 audit for the New Westminster campus.

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)

No

If Yes, please describe:

(No response)

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

No

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:

(No response)

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:

All MFD's are set to automatically double side print jobs.

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

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

No

If yes, please describe:

(No response)

Used only 100% recycled paper:

No

Used some recycled paper:

No

Used alternate source paper:

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

No

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:

No

Other:

(No response)

Education Awareness

Have a Green/Sustainability/Climate Action Team:

No

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:

No

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

No

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.)

No

Incorporated lifecycle costing into new construction or renovations:

No

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

Implemented a standard temperature initiative for classrooms, labs and common areas based on the season. During the winter heating season, temperature set points are adjusted to 21°C. During the summer cooling season, temperature set points are adjusted to 23°C