



2015

carbon neutral action report

SIMON FRASER UNIVERSITY



This report was produced by Simon Fraser University. It provides a high-level overview of the actions taken by the SFU campuses to reduce greenhouse gas emissions and promote a culture of sustainability.

For more information about sustainability programs at SFU, please visit our website:
www.sfu.ca/sustainability

And the SFU Sustainability Reporting Initiative (SRI) at:
www.sfu.ca/sri

ACKNOWLEDGEMENTS

Thank you to the many SFU staff who contributed their time and insights to the development of this report:

Contributors

Louis Ballarin, Bernard Chan, Mat Cocuzzi, Trina Forrest, Ryan Fortin, Erica Lay, Wendy Lee, Kathleen Lepitzki, Marie Schneider, Dana Sundmark

SMARTTool Greenhouse Gas Emissions Data Management Team

Louis Ballarin, Bernard Chan, Irinel Filip, Trina Forrest, Denis Kong, Wendy Lee, Larry Waddell

Writers

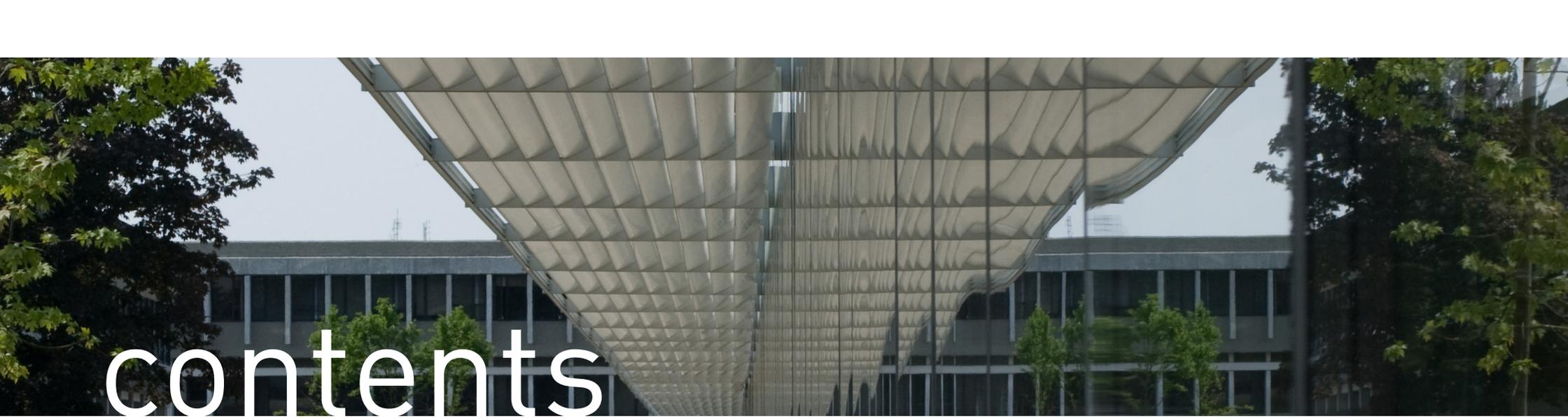
Erica Lay

Designers

Sparrow McGowan, Michelle Murvai



Strand Hall Annex 600
8888 University Drive
Burnaby, BC V5A 1S6



contents

EXECUTIVE SUMMARY

OVERVIEW

1.0

GREENHOUSE GAS EMISSIONS & OFFSETS

- 1.1 Greenhouse Gas Emissions in 2015
- 1.2 Offsets Applied to Become Carbon Neutral in 2015
- 1.3 Changes to Greenhouse Gas Emissions & Offsets Reporting from Previous Years

2.0

ACTIONS TAKEN TO REDUCE GREENHOUSE GAS EMISSIONS IN 2015

- 2.1 Building Emissions
 - 2.1.1 Planning For Reductions
 - 2.1.2 Building Fine-tuning
 - 2.1.3 Behaviour Change
- 2.2 Fleet Emissions
- 2.3 Paper Emissions

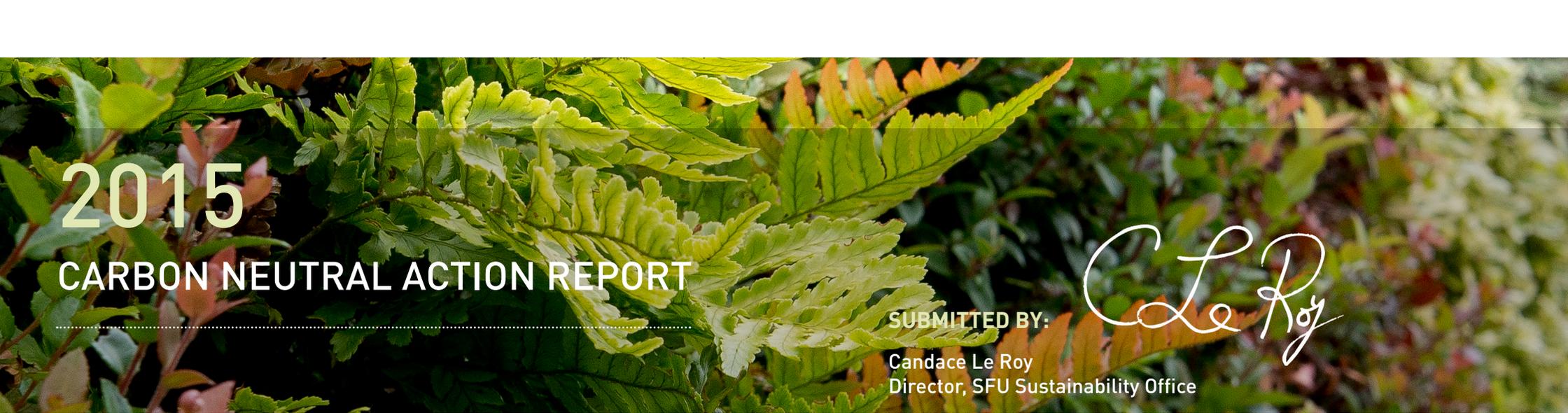
3.0

PLANS TO CONTINUE REDUCING GREENHOUSE GAS EMISSIONS: 2015 - 2018

- 3.1 Building Emissions
 - 3.1.1 Building Fine-tuning
 - 3.1.2 Behaviour Change
- 3.2 Fleet Emissions
- 3.3 Paper Emissions

4.0

APPENDICES



2015

CARBON NEUTRAL ACTION REPORT

SUBMITTED BY:

Candace Le Roy
Director, SFU Sustainability Office



EXECUTIVE SUMMARY

In 2015, Simon Fraser University (SFU) moved greenhouse gas (GHG) emissions reduction forward through systemic, infrastructural and capacity improvements. The University exceeded its interim goal to reduce operational GHG emissions by 18% below 2007 levels by the year 2016, with reductions reaching 26% below 2007 baseline levels in 2015, despite a 13% growth in building area over the same time period. This amounts to nearly a 32% reduction in GHG emission intensity (emissions per meter squared of the University property). SFU's GHG reductions have been aided by lower heating requirements from recent warm weather years, but in large part, are evidence of systematic improvements such as the substantial decrease in use of paper and energy conservation projects.

In addition, the year 2015 was a significant year for looking forward to SFU's greenhouse gas emission and energy future, with the adoption SFU's first University Energy Utilization Policy (GP 43) and with SFU's endorsement of the Paris Pledge for Action, supporting "the adoption of a new, universal climate agreement at COP 21 in Paris" and committing to taking steps to reduce greenhouse gas emissions.

SFU continues to advance GHG emissions reductions with building energy efficiency optimization, and strategic culture- and behaviour-change. In the near future, SFU plans to renew this commitment to greenhouse gas emission reductions in the University's next Sustainability Strategic Plan (currently under development), further energy efficiency performance improvement through building retrofits, and the expansion of the existing Green Spaces (Office and Lab) program.

SFU's sustainability actions will be recorded in SFU's online Sustainability Reporting Initiative, from 2015 onwards. Please visit that website (www.sfu.ca/sri) for more on sustainability actions taken by Simon Fraser University.



1.0 GREENHOUSE GAS EMISSIONS & OFFSETS

OVERVIEW

This is the Carbon Neutral Action Report for Simon Fraser University. This report contains our 2015 emissions profile, offsets purchased, 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 30, 2016, Simon Fraser University's final CNAR will be posted to our website: <http://www.sfu.ca/sustainability/publications/cnar.html>

Candace Le Roy
Director, SFU Sustainability Office

May 31, 2016

1.1 GREENHOUSE GAS EMISSIONS IN 2015

Total (absolute) greenhouse gas (GHG) emissions for Simon Fraser University's operations in 2015 were 14,284 tCO₂e*. Emissions decreased by approximately 9% compared to 2014 levels; this was in part due to a substantial decrease in use of paper by the University as well as the trend towards fewer heating degree days (warmer and shorter winters), and ongoing energy conservation projects that have been enabled through sustained funding support**. Emissions for 2015 are approximately 26% lower than the 2007 baseline (see Table 1).

Between 2014 and 2015, university physical space increased slightly, by 0.2% , with the construction of SFU's Trottier Observatory. Overall, the university's physical space has increased by about 13% since 2007***.

Fugitive emissions are estimated to comprise less than 1% of SFU's total emissions and the fugitive emissions data are onerous to collect, therefore these emissions are considered out of scope, as per the 2015/16 BC Best Practices Methodology for Quantifying Greenhouse Gas Emissions.

1.2 OFFSETS APPLIED TO BECOME CARBON NEUTRAL IN 2013

In 2015, as reported in the BC Provincial Government's SMARTTool, SFU purchased 14,275 tonnes of carbon offsets from Pacific Carbon Trust. At the price of \$25 per tonne, this amounted to \$356,875 of offsets plus GST.

* Tonnes of carbon dioxide equivalent (tCO₂e) is a standard unit of measurement in which all types of greenhouse gases are expressed based on their global warming potential relative to carbon dioxide.

** Through a combination of BC Hydro Power Smart incentives, Fortis BC support for feasibility studies, BC government CNCP funding, and internal support from operations budgets as well as SFU's Sustainable Utilities Revolving Fund (SURF)

***From SFU's Annual Space Reports



SOURCE*	2007 (tCO ₂ e) BASELINE YEAR**	2013 (tCO ₂ e)	2014(tCO ₂ e)	2015 (tCO ₂ e) CURRENT YEAR
Buildings – Stationary Fuel Combustion and Purchased Energy	17,995	16,453	15,159	13,932
Fleet – Mobile Fuel Combustion	940	298	290	251
Paper – Office Supplies	357	250	248	100
Total Emissions Calendar Year	19,292	17,001	15,696	14,284
Carbon Neutral or Offset Exempt	N/A	-10	-10	-8
Total Emissions Requiring Offset Payments	N/A	16,991	15,686	14,275
Offset carry-over from Previous Year	N/A	72	13	0
Total Emissions Offsets Purchased	N/A	16,919	15,699	14,275

TABLE 1

Simon Fraser University Greenhouse Gas Emissions by Source per Year

Eight tonnes CO₂ equivalent emissions from the combustion of biomass fuels were reported as part of our total greenhouse gas emissions profile in 2015. As stated in the 2015/16 BC Best Practices Methodology for Quantifying Greenhouse Gas Emissions, the carbon dioxide emissions resulting from the combustion of biogenic fuel sources must be reported but do not require offsets.

1.3 CHANGES TO GREENHOUSE GAS EMISSIONS & OFFSETS REPORTING FROM PREVIOUS YEARS

At this time, there are no changes to Simon Fraser University’s 2014 greenhouse gas emissions from previous years.

* Emissions data (2012, 2013, 2014) are values are reported in SMARTTool. For simplicity, values with decimals have been rounded off.

** 2007 baseline set from Willis Energy: SFU GHG Inventory

2.0 ACTIONS TAKEN TO REDUCE GREENHOUSE GAS EMISSIONS IN 2015

In 2015, Simon Fraser University (SFU) moved greenhouse gas reduction forward through systemic, infrastructural and capacity improvements. With building emissions the largest portion of SFU’s greenhouse gas emission footprint (97.5% in 2015), SFU remained focused on reduced energy use and improved efficiency in buildings through targeted retrofits and behaviour-change campaigns.

In addition, the year 2015 was a significant year for looking forward to SFU’s greenhouse gas emission and energy future. In fall of 2015, the Board of Governors passed SFU’s first University Energy Utilization Policy



(GP 43), reiterating the responsibility of the entire SFU community to reduce energy consumption and improve energy efficiency in their day-to-day actions. The Policy also commits the University to move towards renewable energy sources. In 2015, SFU also became a signatory to the Paris Pledge for Action, supporting “the adoption of a new, universal climate agreement at COP 21 in Paris” and committing to taking steps to reduce greenhouse gas emissions.

2.1 BUILDING EMISSIONS

2.1.1 PLANNING FOR REDUCTIONS

Steps taken in 2015 to reduce SFU’s GHG footprint are outlined below. In 2015, SFU Facilities Services began drafting the next Strategic Energy Management Plan 2016 – 2021 (SEMP) (Final Draft currently under review), supporting SFU’s Sustainability Strategic Plan, Sustainability Policy (GP 28), Energy Utilization Policy (GP 43), and University commitments to long-term energy efficiency and conservation. The SEMP provides a framework and action plan for minimizing energy consumption, building on past successes and providing direction for the next three years to meet the University’s commitment to reduce the energy consumption of the Burnaby campus by 2% per year. It also proposes a 5% renewable energy target for the next 5 years.

2.1.2 BUILDING FINE-TUNING

Maintaining efficient buildings is key to managing the University’s GHG emissions. SFU manages demand through the systematic “tuning-up” of buildings and by implementing retrofits to older building systems (e.g.,

HVAC, lighting, and building envelope). Retrofitting is done in conjunction with expanding and improving behaviour change programs designed to make students, faculty and staff better ‘energy tenants’ in campus buildings.

Live Data Dashboard Projects

As part of the BC Hydro and Fortis BC funded Continuous Optimization (C-Op) program, a total of 19 buildings on the Burnaby campus are now connected to energy dashboard displays. These displays provide live data on energy performance, and increase the ability of the energy management office and operational staff to review energy performance of all the buildings in close to real-time. Performance by the remaining SFU buildings continues to be monitored for future energy project opportunities.

In 2015, SFU performed the following Continuous Optimization Projects:

Blusson Hall and Saywell Hall Continuous Optimization

- Recommissioned the buildings to optimize the energy usage.
- Introduced free cooling to the control strategy.

Building HVAC (Heating, Ventilation, Air-Conditioning) and Control Upgrades

HVAC and control upgrades are integrated into current classroom, lounge and washroom upgrade programs. Upgrades completed in 2015 include:

Education Building and Robert C Brown Hall Controls Upgrade

- Replaced the aging pneumatic control devices with electronic control devices to improve the effectiveness of the HVAC control system.



Discovery 1 and Discovery 2 Condensing Boilers

- Replaced the aging boilers with high-efficiency condensing boilers
- Completed the commissioning of the boilers and the measurement and verification process.
- Reduced the GHG emissions of the buildings by about 25%

Demand-controlled Ventilation in Shrum Science Theatres

- Installed CO2 sensors and occupancy sensors in the HVAC system of the lecture theatres to optimize the energy usage of the area.

Variable Frequency Drives (VFDs) Installation in SSB and MBC

- Installed VFDs into the motors of the fans to optimize the energy usage of the system by matching the speed of the motor-driven equipment to the load.

TASC 1 and TASC 2 Copper Tree Analytics Pilot

- Adopted a fault detection and diagnosis software to improve the operating efficiency of the building HVAC system through detecting control errors and faults continuously.

Lighting Efficiency Projects

Lighting efficiency projects continue to contribute to improvements in energy use in buildings and in the adjacent parking lots. In particular there has been a focus on the transition to LED as the preferred lighting technology. As with HVAC and control upgrades, lighting upgrades are also integrated into current classroom, lounge and washroom upgrade programs.

The following are the projects for 2015:

Bennett Library Large Lighting Upgrade

- Finished Phase 1 of the Library large lighting upgrade, which included removing 2600 fluorescent fixtures (concrete coffer) and replacing them with 1300 LED fixtures (August 2015-March 2016).

East Gym and Pool Upgrade

- Lighting upgrade in the East Gym and Pool, with the replacement of 32 metal fixtures with 32 LED fixtures.

Exterior Pole Lighting

- Completion of 80% of the lighting upgrade for exterior pole lighting with LED fixtures.

Distribution Transformer Replacements

- Replacement of ten 40-year-old step-down distribution transformers with new transformers.

Other Projects

In addition to the projects mentioned above, SFU also undertook other projects that contributed to reduced emissions at SFU:

Energy Audits in Shrum Science Centre and Animal Care Facility

- Completed an Energy Study for the Shrum Science Centre through the FortisBC's Commercial Custom Design Program and a gas conservation study for the animal care facility.
- Identified projects with an opportunity to reduce the GHG emissions by 300 tCO₂e.



Low-flow Aerators in AQ and Library

- Installed low flow aerators that reduce the water usage from the faucets by about 50%, thus reducing the amount of fuel required to heat up the water.

Entrance Air-lock Vestibule at MBC

- Added an exterior entrance vestibule to serve as an airlock at a high traffic main building entrance to reduce energy loss and air infiltration from drafts. The project is estimated to avoid 17 tCO₂e.

2.1.3 BEHAVIOUR CHANGE

SFU's Green Labs and Green Office Certification Programs spearhead the University's energy demand-side management. In 2015, Certification for offices and labs (combined numbers) increased from 16 to 27.

Green Labs Program

The Green Labs program at SFU targets some of SFU's most energy-intensive building space: laboratories, with aims to find more substantial reductions in these spaces. SFU's Green Labs Program, a partnership between the Sustainability Office, Facilities Services, Environmental Health and Safety, and dedicated building occupants, provides engagement and education materials and opportunities, as well as on-site physical adjustments to optimize energy use in laboratories.

SFU Sustainability Strategic Plan established the goal of supporting and encouraging sustainable research practices at SFU. The involvement of educators and researchers in the assessment of potential sustainability opportunities is an integral part of achieving and sharing best laboratory

practices regarding lab energy efficiency, lab water conservation, lab material purchasing & recycling, green chemistry, and waste reduction & diversion. The ultimate goal of the Green Labs Program is to engage lab occupants to make minor changes in behaviour that lead to lasting changes in sustainable lab practices. The program also serves as a bridge between lab occupants and facilities staff in addressing building infrastructure and sustainability issues.

Green Labs Certification

A signature component of the Green Labs Program is Green Lab Certification. Participating labs can certify at various levels and receive a certificate celebrating their certification status. They are then acknowledged publicly in a number of areas for their positive contribution to sustainability at SFU. With the expansion of the Green Labs program to all University departments and laboratories, at the end of 2015 SFU had eight certified Green Labs, with six more registered to become certified.

Green Office

The SFU Sustainability Office recognizes the efforts of staff and faculty to "green" their daily activities by offering the Green Office Certification Program. Green Offices complete a certification checklist, which includes actions in a variety of categories including waste reduction, purchasing, energy conservation, and transportation. Participating offices can certify at various levels and receive a certificate celebrating their certification status. They are then acknowledged on the SFU Sustainability Office website and in other publications for their positive contribution to sustainability at SFU. Efforts made by participating offices are also included in Sustainability



Strategic Plan reports and communications to encourage further participation. There are currently 19 offices with Green Office Certification, and 13 more registered to become certified.

Dining Hall Behaviour Programs Pilot

In June of 2015, SFU's Residence Dining Hall completed an energy-saving pilot program to target dining hall specific energy-conservation actions. Over the course of the month, 1300kWh were saved, as well as 7.9GJ of natural gas (equivalent to what the average Canadian household uses per month). BC Hydro and Fortis BC are now using the pilot as an example for energy-reduction strategies in other post-secondary dining halls.

Sweater Day

Each year SFU promotes the World Wildlife Fund (WWF) Sweater Day in February. Community members are encouraged to wear an ugly or silly sweater for one day and Facilities Services turns the thermostat down saving 6500kg of greenhouse gas emissions in one day, which is equivalent to the carbon sequestered by 5.3 acres of North America forests in one year. Staff members and student groups send photos of their teams donning their sweaters and are entered to win a prize.

2.2 FLEET EMISSIONS

In 2015, several fleet vehicles were replaced with more efficient vehicles. During 2015, GPS technology was installed in all Facilities Services vehicles to track mileage and driver behaviour. This data will subsequently be used to systematically plan the campus fleet to ensure vehicle "best fit".

2.3 PAPER EMISSIONS

No new campaigns were undertaken in 2014 to reduce paper usage, however, the most substantial relative GHG emissions reductions for SFU in 2015 happened in paper emissions, with emissions dropping by 60% in one calendar year. Since the 2007 baseline SFU has reduced paper emissions by 72%. This can be attributed to generalized institutional shift towards digital communications in all areas, coupled with increasing individual efforts across the University to print less. There has also been an increased use of 30% recycled paper. Individual actions that can support a reduction in paper use are integrated into the Green Office Certification program.

3.0 PLANS TO CONTINUE REDUCING GREENHOUSE GAS EMISSIONS: 2016 - 2018

With a reduction of greenhouse gas emissions 26% below 2007 levels in 2014, Simon Fraser University has surpassed the interim goal of an 18% reduction below 2007 levels by 2016. Many of SFU's GHG emission reductions in the last eight years have been a result of actions that can be classified as "low-hanging fruit". Application of the planning and commitments made in 2015, such as the University Energy Utilization Policy and the Paris Pledge for Action will be instrumental to achieving the university's goal of a 33% reduction by 2020.



3.1 BUILDING EMISSIONS

SFU will continue to optimize building performance and energy efficiency and invest in retrofits through internal funding, including the Facilities Services Sustainable Utilities Revolving Fund (SURF), through the Carbon Neutral Capital Program, and through other external funding support including BC Hydro and Fortis BC. The Green Labs and Green Office Certification Programs will further support occupants of university buildings to reduce and optimize their energy demands. All upgrade and retrofit planned projects, detailed in the University's Strategic Energy Management Plan are funding-dependent.

3.1.1 BUILDING FINE-TUNING

Building Envelope Projects

- Education Building-improvements in insulation value
- McTaggart Cowan Hall-improvements in insulation value
- Maggie Benston Building

Building HVAC (Heating, Ventilation, Air-Conditioning) and Control Upgrades

- Animal Care Facilities- boiler and HVAC upgrade.

Lighting Efficiency Projects:

Bennett Library Large Lighting Upgrade

- Begin Phase 2 of Library lighting retrofit, on floors 6 and 7. This will include removing 1500 fluorescent fixtures and replacing them with 1300 LED light fixtures.

Applied Sciences Building Lighting Upgrade

- Upgrade the Applied Sciences Building concourse lighting from fluorescent to LED

Maggie Benston and West Mall Lighting Upgrades

- A whole-building fluorescent-to-LED lighting upgrade in the Maggie Benston and West Mall buildings, covering approximately 2000 fixtures.

Distribution Transformer Replacements

- Replacement of approximately 12 more 40-year-old step-down distribution transformers with new transformers in the next year.

As in previous years, HVAC, lighting and control upgrades are also integrated into current classroom, lounge and washroom upgrade programs. The lighting upgrades in Maggie Benston and West Mall will likely be the last two whole-building major lighting upgrade projects at the university, with future lighting upgrade projects being integrated into other building upgrades.

3.1.2 BEHAVIOUR CHANGE

Green Labs and Green Office Certification

The certification system for labs and offices is expected to have increased adoption rates in 2016. SFU will continue to support staff and lab-occupant energy demand-side management efforts through the Green Labs and Green Office programs.



Green Spaces Certification

With the popularity of the Green Labs and Green Office Program SFU is planning on expanding the certification system to green dining and green events with energy conservation being a key set of actions within each level of the certification checklist. Green Spaces Certification projects will be piloted in 2016.

3.2 FLEET EMISSIONS

With the 2015 roll out GPS tracking units and collection of data, 2016 will see SFU employ the data collected from these units to target GHG reducing behaviour.

3.3 PAPER EMISSIONS

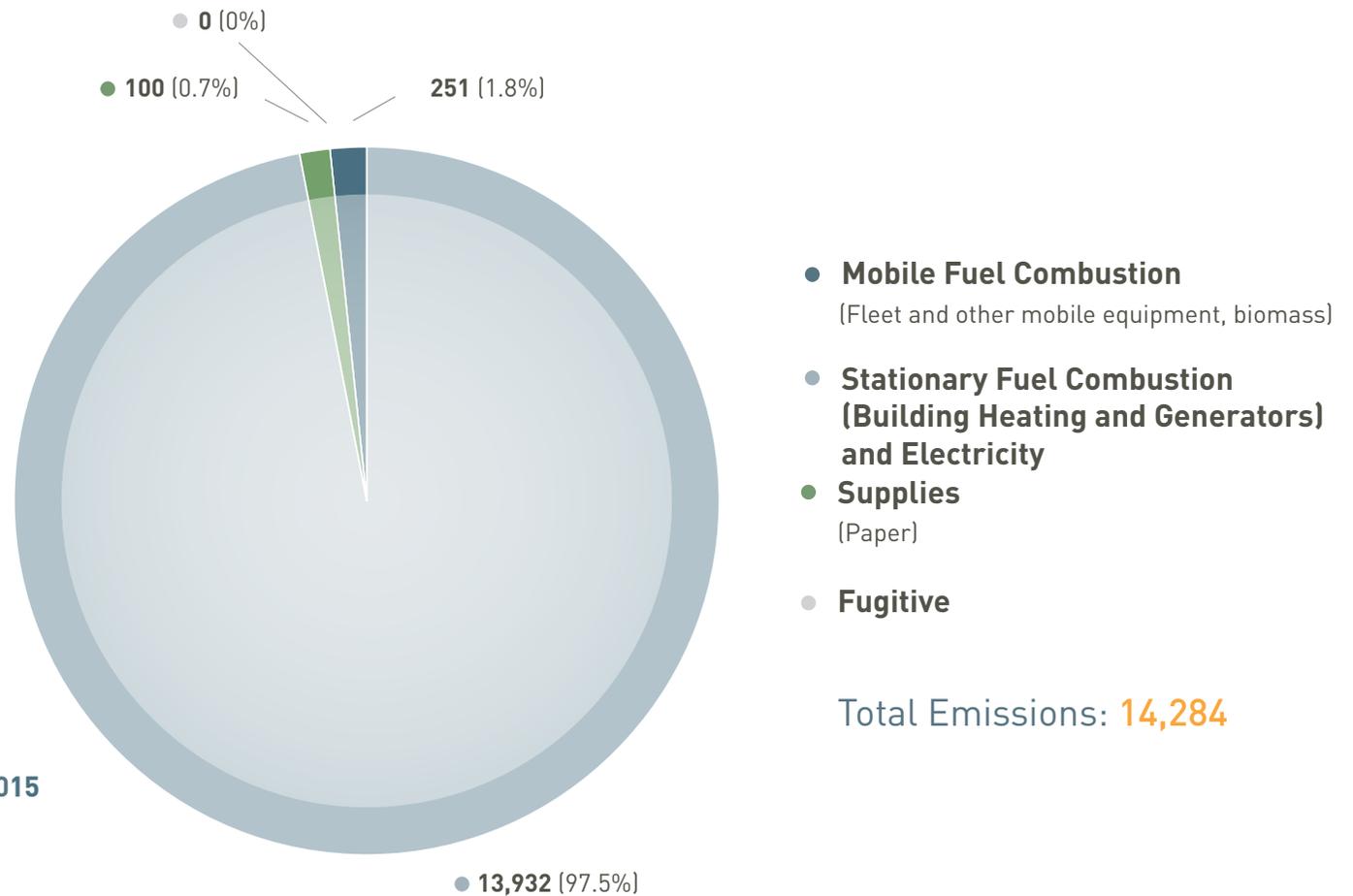
Individual actions that can support a reduction in paper use are integrated into the Green Office Certification program. In addition, as part of SFU's Zero Waste Initiative, SFU will be exploring both procurement and behaviour modifications to reduce overall paper use.

4.0 APPENDICES

SFU Greenhouse Gas Emissions by Source for the 2015 Calendar Year
Actions Towards Carbon Neutrality (via the online tool)



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



- **Mobile Fuel Combustion**
(Fleet and other mobile equipment, biomass)
- **Stationary Fuel Combustion (Building Heating and Generators) and Electricity**
- **Supplies**
(Paper)
- **Fugitive**

Total Emissions: **14,284**

Offsets applied to Become Carbon Neutral in 2015

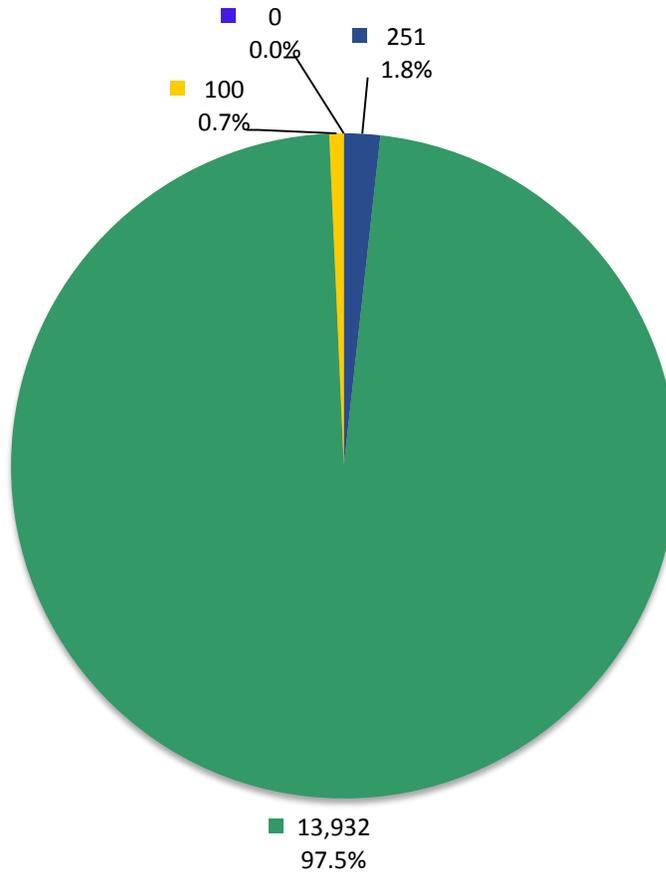
Total offsets required: **14,275**

Total offset investment: **\$356,875 plus GST**

Emissions which do not require offsets: **8***

*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.

Simon Fraser University Greenhouse Gas Emissions by Source for the 2015 Calendar Year (tCO₂e*)



Total Emissions: 14,284

- Mobile Fuel Combustion (Fleet and other mobile equipment)
- Stationary Fuel Combustion (Building Heating and Generators) and Electricity
- Supplies (Paper)
- Fugitive Sources

Offsets Applied to Become Carbon Neutral in 2015 (Generated May 26, 2016 9:21 AM)

Total offsets required: **14,275**. Total offset investment: **\$356,875**. Emissions which do not require offsets: **8** **

*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.

2015 Carbon Neutral Action Report Survey

Organization Name:

Simon Fraser University

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:

Yes

If Yes, please describe:

Strategic Energy Management Plan (SEMP) 2016-2021 currently in development/final review by senior administration which will support the University's Sustainability Strategic Plan 2021. The SEMP provides a framework and action plan for minimizing energy consumption, building on past successes and providing direction for the next 5 years to meet the University's commitment to reduce the energy consumption of the Burnaby campus by 2% per year, and proposes a 5% renewable energy target by 2021

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:

*- Adopted a University wide Energy Utilization Policy (GP 43) on November 26, 2015.
<https://www.sfu.ca/policies/gazette/general/gp43.html>*

The purpose of this Policy is to:

- 1. Incorporate the carbon neutral public sector regulatory requirement to reduce and offset SFU's carbon intensive energy consumption, requiring all members of the SFU community to be mindful of the energy demands created by their University activities and to seek means to carry them out effectively and efficiently to both conserve energy and improve SFU's energy-related environmental impact (e.g., GHG footprint).*
 - 2. Promote optimizing energy use from all sources (carbon based and renewable) to reduce financial costs and environmental impacts.*
 - 3 Shift toward more environmentally benign renewable energy sources to improve SFU's GHG footprint.*
 - 4. Recognize the need to transition to a renewable energy future, that this transition will necessitate shifts in systems, technology and expertise, and that this transition will not happen overnight.*
 - 5. Support the commitments outlined in SFU's Sustainability Policy (GP 38)*
- Endorsed the Paris Pledge for Action supporting "the adoption of a new, universal climate agreement at COP 21 in Paris" and committing to taking steps to reduce greenhouse gas emissions.*
 - University continued on building systems commissioning projects to optimize systems performance through the BC Hydro and Fortis BC funded Continuous Optimization Program. A total of 19 buildings are now being monitored on energy dashboards implemented through the program.*
 - Completion of energy conservation projects e.g. implementation of control strategies to use free cooling, replacement of pneumatic controls with electronic controls, installation of CO2 sensors to support demand-controlled ventilation, VFDs installation to allow better regulation of air delivery, and various electrical and LED lighting upgrades.*

(For the detailed CNAR 2015 <http://www.sfu.ca/sustainability/publications/cnar.html>)

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:

In 2015, several fleet vehicles were replaced with more fuel efficient vehicles. As well, GPS technology was installed in all Facilities Services vehicles to track mileage and driver behaviour. This data will subsequently be used to systematically plan the campus fleet to ensure vehicle "best fit" and improve fuel efficiency in work planning.

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:

(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:

Printers default to double sided printing

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:

Green office Certification program

Used only 100% recycled paper:

No

Used some recycled paper:

Yes

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:

Increasing use of digital technologies for document distribution in all niversity processes has contributed to a 60% drop from 2014, and an overall 72% since 2007. The Green Office program also encourages and rewards the use of 30% recycled paper and for printing less.

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)

Yes

Encouraged or allow telework/working from home:

(No response)

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:

No

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

No

Other:

The Sustainability Office conducted extensive community consultation and workshops throughout the University, in preparation for the Sustainability Strategic Plan 2021. Adaptation planning and climate resilience topics and proposed actions will be incorporated in the next Sustainability Strategic Plan 2021 (currently being developed).

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:

No

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

(No response)