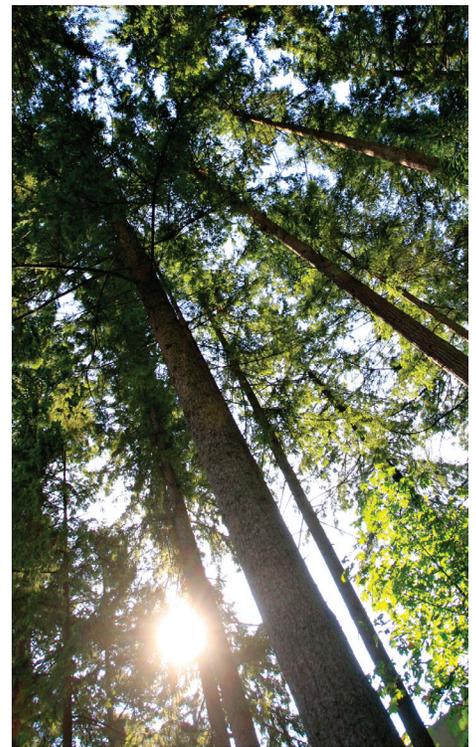


2015 Carbon Neutral Action Report



2015 Carbon Neutral Action Report

Capilano University

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 30, 2016, Capilano University's final *Carbon Neutral Action Report* will be posted to our website at <https://www.capilanou.ca/sustainability/Commitment/Reports/>

Overview

Capilano University is deeply entwined with First Nations Communities. Our institution is named after Chief Joe Capilano, an important leader of the Squamish Nation of the Coast Salish people. We respectfully acknowledge the Lil'wat, Musqueam, Squamish, Sechelt and Tsleil-Waututh people upon whose territories our campuses are located.

Capilano University is a teaching-focused university. We deliver programs at two idyllic locations where students are surrounded by the natural beauty of ocean, coastal mountains and forest. Many students at our main campus in North Vancouver selected Capilano University because of our small class size and beautiful setting. Our approach to sustainability, often reflects the learning environment by making good use of our natural setting and by creating learning opportunities through intimate, personal and community engagement.

Our approach to sustainability also reflects our mission of student success. While we strive for continuous improvement by reducing our carbon footprint, leveling social inequalities, and optimizing our resource use, sustainability at Capilano is more than doing the right things well. Sustainability initiatives at Capilano create opportunities for everyone to learn while leading by example.

Sustainability at Capilano teaches our students, to be socially and environmentally responsible citizens by supporting the development of skills and knowledge that have become essential in a rapidly changing and diverse global community. Faculty, staff and students are all engaged in this learning process and the opportunities to learn about sustainability permeate life at Capilano within:

- *Curriculum,*
Our faculty teach sustainability both directly, as a topic of study, and indirectly, as examples of the academic subject
- *Extra-curricular studies,*
Students, staff, and faculty mount a lecture and film series called Earth Works that addresses environmental issues
- *Day-to-day campus life,*
Staff, faculty and students engage through a student organized program called CapU Works
- *Operations,*
We operate the campus as an living example of sustainability and, more importantly, a laboratory of learning
- *Campus design,*
First Nation's art and architectural features, outdoor meeting spaces and designed acknowledgement of the heritage of our place encourage an appreciation of our natural environment and inspire community values.

In short, we strive to integrate environmental and social sustainability into every aspect of the campus community. Our commitment to carbon neutrality, like the broader commitment to sustainability, enshrined in our 2009 [Sustainability Policy](#), serves student learning goals as an example of social and environmental responsibility and an opportunity practice. Our excellence in engaging our community in reducing greenhouse gas emissions, is recognized in Leading By Example: The First Five Years Of Carbon Neutral Government 2010-2014, published by the Climate Action Secretariat December 2015.

Our greenhouse gas reduction target for 2015 was a 33% below 2007 baseline carbon emissions; we dramatically exceeded this goal achieving a 52.7% reduction.

In October 2016, we will maximize the learning value of this greenhouse gas reduction achievement by holding a week-long, community-wide, celebration of our sustainability successes. We plan to:

- Celebrate achievements and reaffirm our commitment to 80% reduction,
- Advance a vision for achieving greater sustainability at Capilano,
- Bring students, faculty, staff and climate-focused non-profit organizations together,
- Co-host a “Campus of the Future” event with BC Hydro, and
- Recognize the students, staff, faculty and partners that propelled sustainability at Capilano.

While this Carbon Neutral Action Report represents our campus’ finest hour to date, it is only the beginning. Our responsibility, as a pillar of the community, and as educators of future generations, is to shine as an example, and achieve a more sustainable tomorrow.

Jacqui Stewart

A handwritten signature in black ink, appearing to read 'Jacqui Stewart', written in a cursive style.

Interim Vice-President, Finance & Administration

Emissions and Offsets Summary Table:

Capilano University GHG Emissions and Offsets for 2015 (TCO2E)	
GHG Emissions created in Calendar Year 2015 <i>(from SMARTTool Homepage):</i>	
Total Emissions (tCO ₂ e)	1,298
Total Offsets (tCO ₂ e)	1,296
Adjustments to GHG Emissions Reported in Prior Years <i>(from SMARTTool Homepage):</i>	
Total Emissions (tCO ₂ e)	8
Total Offsets (tCO ₂ e)	8
Grand Total Offsets for the 2015 Reporting Year <i>(from SMARTTool Homepage)</i>	
Grand Total Offsets (tCO ₂ e)	1,304

Retirement of Offsets:

In accordance with the requirements of the Greenhouse Gas Reduction Targets Act and Carbon Neutral Government Regulation, Capilano University (**the Organization**) 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:



Signature

Jacqui Stewart

Name (please print)

June 1, 2016

Date

Interim Vice President, Finance & Administration

Title

Introduction

Targets & Baselines

Capilano University maintains two greenhouse gas (GHG) baselines and three energy baselines. The purpose of each of these is as follows:

2007 GHG baseline: Alignment with British Columbia's province wide greenhouse gas reduction goals

2010 GHG baseline: Alignment with British Columbia's Carbon neutral government legislation

2007 Energy baseline: Supports the 2007 GHG baseline

2010 Energy baseline: Supports the 2010 GHG baseline

2012 Energy baseline: Allows performance monitoring without the distortion of a major building addition

We set short, medium and long term targets for greenhouse gas reduction. GHG targets have not been altered since our commitment to carbon neutrality, and are:

33% reduction from 2007 baseline by 2015

67% reduction from 2007 baseline by 2020

80% reduction from 2007 baseline by 2050

While these are among the most aggressive GHG targets in the world, the Capilano University community does, on occasion discuss accelerating these targets. Our principle concern with acceleration is the availability of resources to achieve the target. While the specific target percentages are "aspirational", we have dramatically exceeded our first target and have realistic operational plans that achieve our 2020 target. Plans to achieve our 2050 target are in development.

Risks & Challenges

When considering the risks to successfully achieving these targets, the availability of adequate technology is never a significant concern. Four, largely financial, factors concern Capilano University regularly when managing the risk of failing to meet GHG targets:

1. The availability of sufficient budget to adopt efficient technologies during aging infrastructure replacement
2. Competition for available budget that is created by essential investment in aging infrastructure
3. Macro-economic pressure on the business case for technology retrofits: low fossil fuel prices and rising clean electricity costs
4. Growth in energy use due to increased user demand and/or campus expansion

Emissions Strategies

Our current strategy for reducing GHG consists of a combination of traditional emissions management measures: behavior-based conservation of energy & paper, continuous optimization of building operations, building equipment technology upgrades, and fleet efficiency improvements. As the returns diminish from these strategies, we are investigating, piloting and implementing three additional strategies:

1. Improving asset utilization,
2. Switching energy sources, and
3. Generating renewable energy on-site.

All three strategies require additional investments in equipment, software and expertise and impact operating costs.

Energy & GHG Achievements

In 2015, our electricity reduction commitment to BC Hydro for participation in the Energy Manager and Workplace Conservation Action programs totaled 500,000 kWh of which, 144,864 kWh was to come from behavior change. Like our GHG target, we dramatically exceeded expectations by 75%. External financial support for both programs continues to decline. In October 2016, we expect a 35% reduction in BC Hydro funding support for human resources and a sharp decline in retrofit incentives.

Our goals for reducing natural gas consumption are more aggressive than for electricity and less predictable, due to a lack of costly, building-level, gas metering infrastructure. Because natural gas is 20x more GHG intensive than electricity, we focus much of our effort on gas reduction. A combination of retrofit activities, improved building automation and favorable weather, resulted in very dramatic savings of more than 7,000 GJ, approximately 400 tCO₂e in year-over-year reductions.

Many retrofit efforts were completed late in the year; as a result, full GHG reductions and savings are not realized until the subsequent year.

Sustainability & the Curriculum

One of the key learning outcomes that we strive to instill in our students is community/global stewardship and responsibility. Our students learn about sustainability in their courses and through involvement in campus life. Examples of efforts to engage students in sustainability include:

- EarthWorks – A collaboration of students, staff, management and faculty mounts a series of extra-curricular lectures and films. These events are open to the public and aim to educate and inspire university stakeholders and local community to understand complex environmental issues from a multi-disciplinary perspective and take action for positive change.
- CapU Works – Coordinated by our dedicated sustainability assistant, but led by a team of three to five student organizers selected for their passion for action, delivers engagement activities to students, staff, faculty and management. Each year's program is designed to build upon previous successes and incrementally integrate further into curriculum related topics. Program focuses on environmental conservation and awareness.
- Campus Waste Audits – One of several collaborations between Earth Works Faculty and CapU Works Student Organizers, annual audits engage several classes in improving our waste diversion program, while offering students opportunities to combine experiential learning with prescribed academic assignments.
- Curriculum & Operations Engagement – Several engagement activities delivered by our CapUWorks and EarthWorks teams are both embedded in curriculum and serve campus operational goals. From energy to waste, environmental sustainability at Capilano is driven by the students, for the students and with the students.
- Core Curriculum – There are a variety of environmental and social sustainability focused courses at Capilano University, particularly in the areas of Arts & Sciences, Business, Outdoor Tourism & Recreation, and Community Outreach & Development. These are accessible through our course calendar. There are also many courses where components of the curriculum focus on sustainability. Examples include Azita Shafi's sustainability-themed Supply Chain Management business course, and, in 2015, Carol Aitken introduced a sustainability-related design project within the IDEA program.

What may be less obvious to the casual observer of our academic programs, is that Capilano hosts faculty facilitated chat live events where sustainability topics of multi-disciplinary interest are discussed regularly to support inquiring minds.

Leading by Example

Learning is part of every academic institution's culture. At Capilano, we spread learning about sustainability through practicing conservation and community development initiatives. Our programs bring students and all staff together around common sustainability goals.

- Our campuses operate on the unceded territory of several First Nations. Building a strong community with a sense of social justice includes creating a spaces that celebrate Aboriginal learning, knowledge and culture. One of these spaces is our Kéxwusm-áyakn Student Centre. The Centre and First Nations Services in general are supported by a First Nation's Advisor and two first Nations Liaison Officers.
- Workplace Conservation and Awareness Program – Capilano students and employees continue to adopt more sustainable behaviours, supported by our partnership with BC Hydro and its Workplace Conservation Awareness (WCA) program. In the program's fifth year, a number of ongoing behavioural change initiatives to reduce electricity and energy consumption across the university, including Get Ur Fleece On, and the 30 Day Challenge were featured.
- Campus Community Garden – Located at the north end of campus, the garden, officially opened on Earth Day 2013, provides a place for shared experience among students, staff and even our residential neighbours. It's a place to experience the wellness from connecting with the earth and our community. In 2015, a pole carved by a First Nation's artist was added to help mark the garden as a formal meeting place.
- Sustainable Transit – Participation in the Compass Card Program and Bike to Work Week to encourage the use of public transit and cycling to and from campus by employees and students. This is an area of renewed interest to Capilano as cycling is a core interest of many of our Outdoor Recreation students.
- Paper reduction – Since 2010, we have reduced our paper purchases from 13,365 packages to 8,175. This is a mission that speaks to the community on the topics of conservation of natural places, waste management and greenhouse gas emissions.

While reducing emissions through improved operations is important to our institution, Capilano can be much more impactful in the service to combat climate change by building community and educating future citizens, than by decreasing our footprint.

Sustainability Programs

A History of Leadership in Student Engagement

Many of our students, faculty members and employees have been working collaboratively to bring sustainability to the forefront of student life. A few examples are:

- EarthWorks/CapU Works – An ambitious initiative spearheaded by students, staff, management and faculty from the university's Biology, English, Geography, Liberal Studies, Tourism and Outdoor Recreation programs and beyond. Through a series of lectures, films and activities, CapU Works aims to educate and inspire students, members of the campus and local community to understand complex environmental issues from a multi-disciplinary perspective enabling all to take action for positive change. In 2015, a sampling of events included lectures (on alternative energy possibilities, marine pollution, and the Pollination Crises) with guest speakers, a Mobilizing Resources gathering (to unite students who want to volunteer with community organizations needing volunteers), and documentary film screenings (*Do The Math, Manufactured Landscapes*). For more information and to view the schedule of events, please visit the [Works page](#) on the Capilano U website.



- CapU Works Student Organizers – In the Spring of 2015, the CapU Works team included five student organizers — Lisa Hanania (FoodWorks), Crysta Perak (Garden PatchWorks), Biljana Radovic (PowerWorks), Emma Courtenay (EarthWorks) and Jackson Buscher (EarthWorks) — selected for their passion and commitment to sustainability. Over the summer months, Taeyeon Kim (FoodWorks) worked solely on student event documentation and developed an all-encompassing manual on how to execute a Farmers’ Market, to be used for future event planning. In the Fall term, three new organizers joined our team – Christine Hudson (Garden PatchWorks), Natalia Pisarek (PowerWorks) and Kaylie Higgs (EarthWorks Liaison)– to continue the conservation and engagement efforts started by the previous semester’s students.

In addition to attending weekly team meetings and building community engagement, these student organizers acted as catalysts bringing energy, support for the team, and the vision to challenge the series to grow into a rallying point of knowledge and action. They sought to engage other students within the campus and external community. The organizers were also encouraged to network with environmental organizations, arts-based organizations, performance artists, policy makers, and leaders and experts in sustainable change-making to bring a richness of views and opinions to the series. Throughout 2015, this group planned and delivered events that educated and inspired.

EarthWorks Organizers: Jackson Buscher and Emma Courtney - These students helped plan EarthWorks events each semester, which can take the form of lunchtime discussion sessions, student training/workshops, sustainability socials, potlucks or film screenings. Emma and Jackson liaised between the EarthWorks and CapU Works teams, Capilano Students’ Union Environmental Issues committee and other sustainability groups to connect EarthLive themes with opportunities for engagement/action. They also helped secure guest speakers, facilitators or activity leaders connected to existing projects or EarthWorks lectures and recruited student volunteers to poster, use social media, set up, take pictures, film and attend events.



In the Spring of 2015, they helped with our [Waste Audit & Garbage Gala](#). They held an information booth, and showcased half a day’s worth of coffee cups that were mistakenly thrown into the landfill bin rather than the Containers bin for recycling. For the Fall 2015, Emma assisted the other CapU Works students execute their events.

- FoodWorks Organizer: Lisa Hanania – Since April 2012, as part of the National Campus Food Systems Project, Capilano students have been identifying opportunities for food systems change. In 2013, Tiaré Jung supported students to bring local and seasonal food to campus events and community garden workshops. She also worked with the Food and Beverage Committee to find opportunities to increase the freshness and accessibility of menu options, reduce waste, and engage the campus in conversations about food. Five key food values were crafted to capture key concerns of campus community members:



- Nourishment & sustenance
- Community engagement & Evidence based decision making
- Effective resource management
- Connection to the regional food resources and ecosystem
- Learn and make evidence based decisions

Building on Tiaré’s work, Lisa (an international student from the US) brought local, sustainable, and accessible food, produce and goods to campus for CapU’s third Farmers’ Market in March of 2015.



- Garden PatchWorks Organizers: Crysta Perak became the organizer in the Fall of 2014 and set out to host a variety of events new to CapU. For the Spring 2015 term, Crysta organized an Invasive Species Pull and workshops for the community garden plot holders, allowing for both education and fun.

Throughout the Spring term, Crysta spent time planning and organizing our second annual Ode to Spring. Each year, this celebration takes place in the community garden around the first day of Spring. This particular event spanned two days, and included a Medicinal Plant Walk and Seed Exchange, which brought together various groups from across campus and community.

In the summer of 2015, one of our resident elders, Latash – Maurice Nahanee, completed a carving on a large piece of cedar wood. This work of art currently lives in the community garden, near the outdoor classroom, its unveiling coincided with a traditional blessing of the garden, and accompanied a cedar plank lunch for staff participating in our summer invasive species pull.



Taeyeon Kim - Over the summer months, Taeyeon worked solely on student event documentation and developed an all-encompassing manual on how to execute a Farmers' Market, to be used for future event planning.

Christine Hudson – Joining our team in the Fall term, Christine was able to jump right in and execute Taeyeon's Farmers' Market plan in time to kick off the new semester as part of Orientation week in September. These markets are a great opportunity on our own campus to gain access to sustainable food, fresh produce, and hand-made goods while supporting local vendors and businesses.



Like Crysta, Christine also organized a variety of workshops for the community gardeners (clean ups), and ivy pulls with students from classes such as REC 245. Throughout the Fall, Christine also geared up for a busy Spring 2016 term, including big plans for the 2016 Ode to Spring event.





- PowerWorks Organizers: Biljana Radovic – Through funding provided by BC Hydro’s Workplace Conservation Awareness program, Biljana (an international student from Serbia) was our PowerWorks student for the end of 2014 and Spring 2015.

Her goal was to embed energy conservation into the curriculum in order to help students become energy conservation ambassadors, as well as engage staff members on behaviour change initiatives. She worked on the [Building Challenge](#) with BADM 218 in the Spring, and also set up electronics recycling stations around campus to make it easier for the campus community to recycle items that did not belong into the zero waste stations. In addition, Biljana carried out an Earth Hour campaign for the entire campus as part of her BADM 305 team project, linking her coursework to her CapU Works position.

Natalia Pisarek – Building on Biljana’s impressive term, Natalia ramped up quickly to help promote the 30 Day Challenge during the first week of September throughout Orientation week. As part of the Fall 2015 Waste Audit, Natalia partnered with ElectroRecycle to offer the campus community a collection centre to drop off old electronics. The booth contained interactive displays where passersby could engage in dialogue regarding the importance of recycling old electronics responsibly and considering environmentally-conscious purchases of new, necessary electronics. They collected more than two-thirds of a tonne of e-waste during the audit, with a total of 281 items gathered.

In an untraditional move, Natalia also took on our fifth “Farmers’ Market” later on in the year as part of winter celebrations. Due to the time of year, her Winter Market focused on bringing vendors and artisans to campus to support local business, rather than sustainable fresh produce, a move that reduces both local & global transportation emissions.



- Campus waste audits are hands-on at Capilano. Students from a variety of faculties engage to learn about our waste generation. First started in 2011, students from a variety of faculties including Environmental Geography, English for Academic Purposes, Biology, and Outdoor Recreation sort through one day of campus waste as part of an ongoing research project aimed at improving our waste management strategies at CapU and raising consciousness.



The performance of our [zero waste stations](#) and of our campus community can be evaluated using this data. The zero waste station consists of 5 bins, 4 for diverting waste and one for landfill, they are:

1. Refundable
2. Containers
3. Paper
4. Organic
5. Landfill

In 2015, we performed a compliance audit of each waste container type. Simply put, in each collection bin type, we looked for waste that should have been disposed of in a different bin.

Also new for 2015, students, staff and faculty as well as the local community dropped off their old electronics at a collection booth set up in partnership with [ElectroRecycle](#) as part of the [Garbage Gala: A Trash Tradeshow](#). The booth contained interactive displays where passersby could engage in dialogue regarding the importance of recycling old electronics responsibly and considering environmentally-conscious purchases of new, necessary electronics.

Compliance with Diversion

More than 90% of the waste in the 4 diversion bins was properly placed in the desired container, a high level of compliance. Much of the non-compliant waste was “paper” coffee cups and their plastic lids. This is a significant waste stream management problem at Capilano University; coffee cups contaminated all 4 diversion bins. A second challenge for zero waste station users was distinguishing between plastic containers and compostable containers. Placing compostable containers in the “containers” bin instead of in the organics bin.

The most successful aspects of compliance are:

1. Preventing certain types of waste from entering the normal waste stream. Our regular waste stream was completely devoid of:
 - Electronics
 - Hazardous waste
 - Construction materials
2. Achieving admirable total diversion. The zero waste centres divert 54.5% of our waste.
3. Clean separation of organics for composting – less than 2% non-compliance in our organics bins.

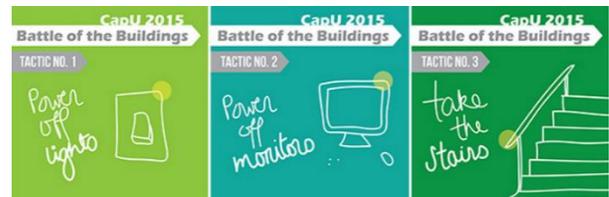
Of course, there is still room for improvement. The largest opportunity is to capture more of our organic waste from the landfill bin. Of the remaining 233.5 KG of waste that Capilano University sends to landfill, 60% is organic (when compostable containers are included) and 9% is hard plastic (which is largely containers). In order to deal with the organic waste produced on campus, we purchased an industrial composter in 2015. We have been working on fine-tuning the recipe since its installation, and expect to be producing soil suitable for landscaping use in 2016.

- In Greig Gjerdalen’s REC 245 Organizational Leadership class, students became zero waste educators on campus, looking into ways of improving our campus waste systems, reduce overall waste, while making it easier for the CapU community to comply with the Metro Vancouver Organics Ban which came into effect January 2015. One of the groups decided to create additional signage for the cafeteria tables in the Birch building and these three-sided signs can now be found on the cafeteria tables. The students also included some information regarding the purpose of the Zero Waste Centre with a QR code linking to Capilano’s website.

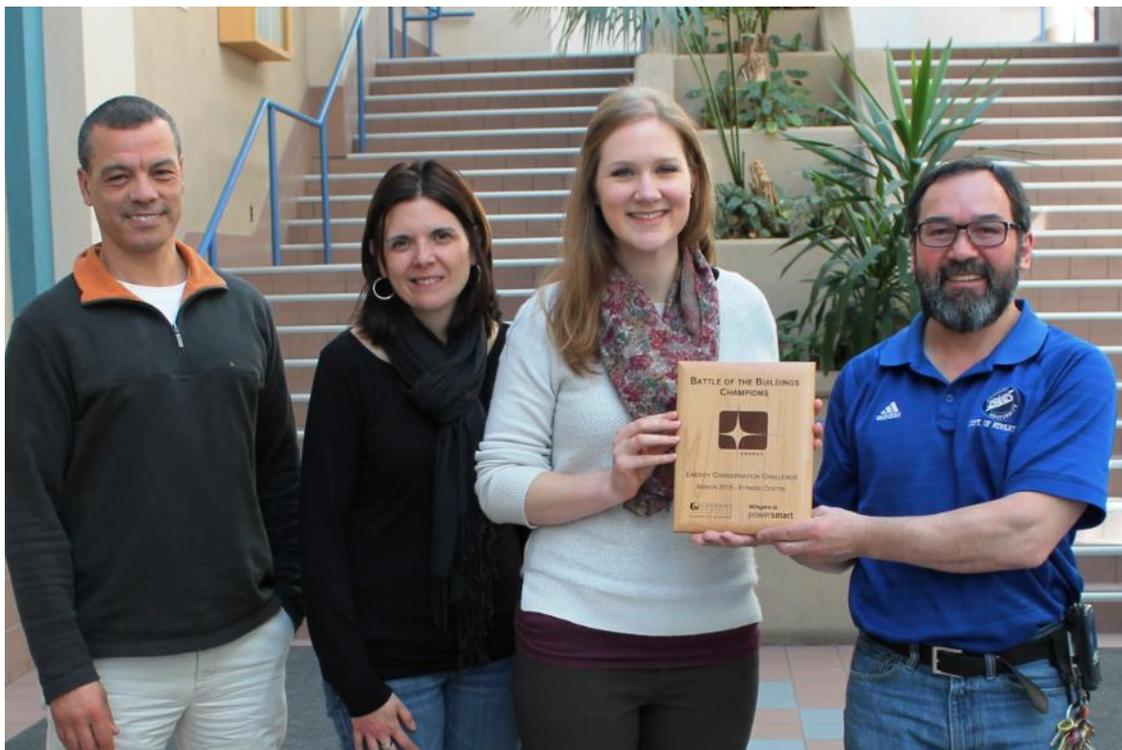


- Students in Noel Genoway and Phil Mentacos’ Leadership in Teams (BADM 218) business class were assigned to one of 11 teams representing 11 Capilano campus buildings to face-off in a battle to create and implement an energy saving campaign. Teams selected the most appropriate energy conservation behavior(s) for that building from the following three energy saving strategies:

1. Turning off the lights
2. Turning off computer and monitors
3. Taking fewer elevator trips



The campaigns fostered significant energy savings for their respective buildings, and raised energy awareness on campus. The Battle of the Buildings resulted in a small contribution to the total energy savings in 11 buildings of: 7% (group 1 – domestic students) and 16% (group 2 – international students in the North American Business Management program, also called NABU) or 45,767 kWh!



Our Community

Capilano students and employees continued to adopt more sustainable behaviours in 2015, thanks in part to our partnership with BC Hydro and its Workplace Conservation Awareness (WCA) program. In the program's fifth year, a number of behavioural change initiatives were implemented once again to reduce electricity and energy consumption across the university, including:

- GET UR FLEECE ON campaign – In partnership with BC Hydro and FortisBC, interested employees were provided with a fleece blanket (made of 100% recycled material) to encourage energy conservation by dressing warmly during winter months and using the blanket while working. As of Dec. 31, 2015 a total of 419 blankets had been distributed in total.



- 30 Day Challenge – In the Fall of 2015, the Capilano University community was asked to adopt one sustainability activity for a 30-day period, resulting in 195 students, staff and faculty at our North Vancouver campus rising to the challenge. Challenges ranged from packing re-usable shopping bags and taking shorter showers, to riding a bike to campus every day and powering down computers when not in use. All of the participants stuck with it, and are now living a little bit more sustainably as a result.



A blog was launched by the university in 2013 called 'Your Daily Cap' which includes a dedicated section for sustainability. All members of the campus community contribute stories and comments, with new stories added every day. We use this fabulous resource to reach a varied audience to promote our student-led events and get the word out about initiatives taking place at Capilano. In 2015, 26 blog posts were written for the sustainability page. In addition to the blog, our overall communications have improved drastically throughout 2015, with communications plans being updated, ensuring we reach as many people on and off campus as possible.

- In 2015, Capilano U participated in Bike to Work Week, a Lower Mainland initiative that encourages the campus community to cycle to and from the university in order to reduce greenhouse gas emissions. For both the Spring and Fall events, the Cap U team was able to save 132 kgs of CO₂ by choosing a healthier alternative to driving an

automobile or taking the bus. Since 2010, Capilano's participation in Bike to Work Week has resulted in the total savings of 782.19 kgs of CO₂.

- In 2015, we once again recycled computers and electronics responsibly. In addition to reducing our carbon footprint, our recycling is saving the University money, which means we can re-direct this money to support our mission of student success.
- Since 2007, Capilano has reduced its total paper purchases by 7,595 packages, a reduction of 48%. Since 2010, Paper reductions have contributed 33 tCO₂e in carbon savings. Carbon reductions from paper have been driven, in large part by employee conservation. Staff efforts have been supported with the adoption of Paper Cut, a software program that both tracks individual paper use and attributes printing costs to individual departments.



To motivate staff to reduce paper use, sustainability leaders compared our paper use to Vancouver's tallest skyscraper, the Shangri-La Hotel. Our 2007 consumption, stacked flat, reached four times the height of the hotel. If we stacked our current paper consumption, it would reach 1,362 feet! While still too much paper, a reduction in paper use equal to twice the height of the Shangri-la is a huge improvement. Everyone- Administration, Exempt, Faculty and Staff have contributed to this success. Department, Areas and individually we have all worked to reduce paper consumption. The installation of Paper Cut software in 2012 by the IT Department has also contributed to our reductions.

Our Built Environment

We are continuously seeking ways to improve the energy efficiency of our infrastructure, which accounts for the majority of our carbon emissions. A few of our 2015 projects include:

- Campus Community Garden – On Earth Day 2013, Capilano University opened its first ever community garden. Located at the north end of campus, the garden provides a site for shared experience among students from different programs and a place for everyone in our community to connect.

Features include a traditional First Nations garden, a 'learning garden' for the youngsters in the Children's Centre, an outdoor classroom and social space, a scent garden, and communal herbs and edible flowers.

Our Garden PatchWorks student organizers (Crysta and Christine) helped organize informative workshops, arranged invasive species and weed pulls, and made sure things ran smoothly in the garden for students, staff, faculty, and community members who hold plots.

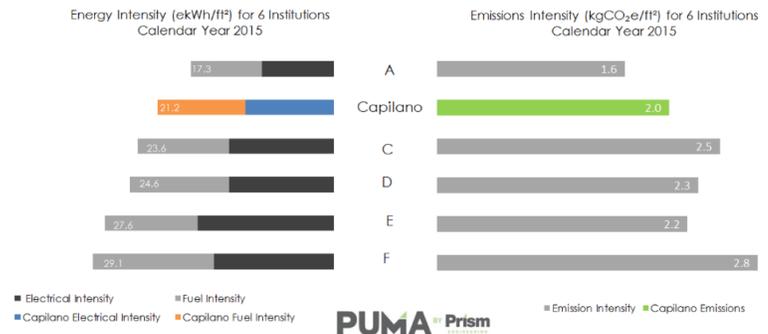
There are 58 'regular' plots and 7 'special access' plots for use by the campus community at large (students, faculty, staff, administration, departments/areas, alumni, and our neighbours in the adjoining townhomes). All plots were assigned in 2015, with a waitlist growing for the 2016 season. Feedback has been overwhelmingly positive, as we have been able to bridge the gap between our neighbours and campus community, and establish strong connections and relationships.



- Building Operations and Energy Performance - Our electricity conservation commitment to BC Hydro, 500,000 kWh, was exceeded in 2015, and, more importantly, or natural gas consumption continued to plummet.
 - Year over year electrical consumption was down 889,192 kWh, with our electric use intensity falling 17%
 - Year over year natural gas consumption was down 2,015,607 ekWh, with our gas intensity falling 23%.

Since 2007, Capilano University has reduced its Building Energy Performance Index (BEPI) from 419 ekWh/M² to 227ekWh/M². Most of these reductions are attributable to heating system efficiency gains, which declined 52.4% since 2007.

This reduction demonstrates Capilano University's progress towards best in class sustainable building operations and campus-wide energy management. Among comparable sized public post-secondary Institutions in the region, many of which have more modern buildings, Capilano University ranks 2nd.



Projects, completed in 2015, that contributed to building energy efficiency and GHG reductions included:

Lighting

- Replacement of essentially all (~92%) linear florescent lighting with LED technology
- Completion of conversion of pathway lighting to LED

HVAC Optimization

- Completion of continuous optimization heating, ventilation and air conditioning projects in four of our largest buildings (Birch, Arbutus, Library, Fir)
- Direct digital control system upgrades in the Birch, Cedar Fir & Library building
- Ductwork redesign on north side of Bosa building

Heating Cooling Plant

- Replacement of Library boilers with condensing units
- Rebuilding the ductless split heating unit at the Sechelt campus
- Replacement of domestic hot water system in Studio Arts
- Replacement of water heaters with condensing systems in Birch building

Envelope

- Reinsulating (Roxul) of the north wall of Library Building
- Mechanical room insulation Fir Building
- Implementation of accelerated roofing maintenance program

Information Technology

- Replacement of single purpose UPS back-up systems with Blade Server UPS systems
- Replacement of copper based information systems network components with fiber optic systems

Projects, completed in 2015, that contributed to our fleet energy efficiency and GHG reductions included:

In 2013, we installed two dual-head electric vehicle charging stations at the North Vancouver campus to promote the use of more efficient vehicles.

Throughout 2015, there were 684 EV charging sessions that together totaled 3.854 MWh of power consumption, saving 4,179 kg of greenhouse gas by supporting fuel switching. We will continue to monitor the usage of these stations and increase the number of stations as demand increases.

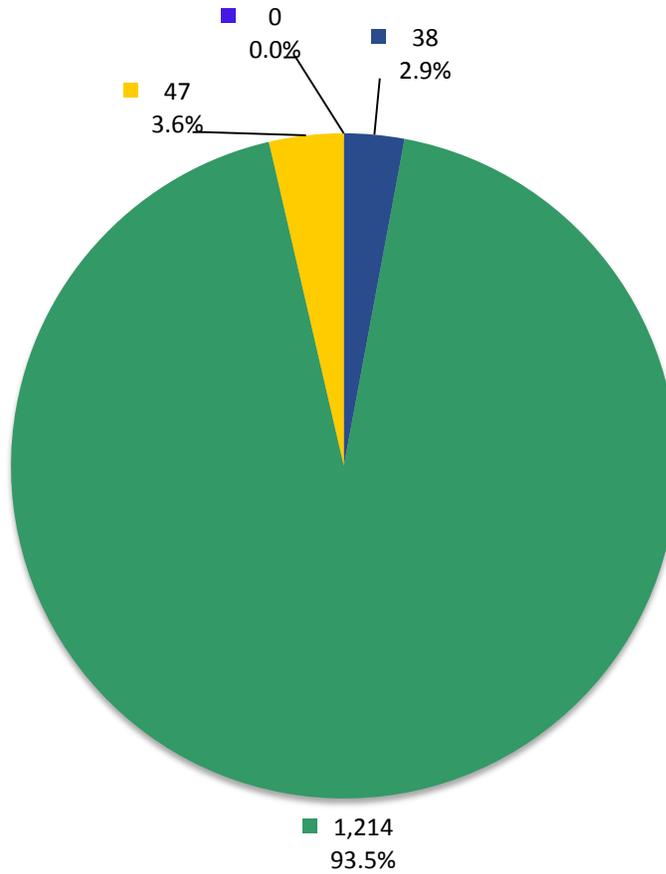


Additional Information

Capilano University will be pleased to share documents relating to our energy, emissions and sustainability management efforts. Institutions wishing to learn from Capilano University's sustainability experience, our successes and our failures, are encouraged to reach out to:

William Demopoulos MBA SEMAC
Sustainability Manager, Facilities
Capilano University
604.986.1911 x3471
williamdemopoulos@capilanou.ca

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



Total Emissions: 1,298

- 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 25, 2016 10:44 AM)

Total offsets required: **1,296**. Total offset investment: **\$32,400**. Emissions which do not require offsets: **2** **

*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:

Capilano 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:

We have a 3 Year Strategic Energy (and GHG) Management Plan supported by BC Hydro's Energy Management Program. We update this annually and integrate our building asset management planning.

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:

We have three systems aiding us in building performance. For monitoring, we use PUMA (weather adjusted utility monitoring), Pulse (Real time electricity monitoring), and SkySpark (Equipment level fault detection). Occupant behaviour management also assists us in targeting reductions.

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:

We now have three fully-electric vehicles in our fleet, replacing old, high-emitting gasoline-powered vehicles. We right-size our fleet to task and staff levels, and encourage the use of car to go for occasional staff vehicle use.

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

Yes

Replaced existing vehicles with hybrid or electric vehicles:

Yes

Took steps to drive less than previous years:

Yes

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

We are currently exploring vehicle tracking for driver behaviour monitoring. Some of our staff have undergone efficient driver training.

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)

No

If yes, please describe:

Our paper is 30% recycled content and default double sided was implemented in previous years and is maintained.

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:

Printing volume is monitored and costs are presented throughout PaperCut, a useful interface for accessing printers on campus. Departments are charged for the printing costs.

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:

We are exploring the option of wheat paper.

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:

Yes

Other:

We have compressed four day weeks for some employees, which minimizes commuting and the associated GHGs of travel. As previously mentioned, we also promote Car 2 Go vehicle usage over employee or fleet vehicles where feasible.

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:

We utilize student organizers to engage staff, faculty and students in carbon reducing behaviours. We encourage students to independently initiate awareness and sustainability programs. CapU Works also supports faculty-run extra curricular lecture series open to the public, that include a variety of topics such as climate issues.

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:

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.)

Yes

Incorporated lifecycle costing into new construction or renovations:

No

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

We would be happy to respond to inquiries about our extensive social and environmental programs.