

2021 PSO CLIMATE CHANGE ACCOUNTABILITY REPORT

Capilano University

**Capilano University is honored to be
Part of the North Shore community, and
Acknowledges with respect the Lil'wat,
Musqueam, Sechelt, Squamish, and
Tsleil-Waututh First Nations on whose
Unceded traditional territories we live,
learn and work.**

DECLARATION

This Climate Change Accountability Report for the period January 1, 2021, to December 31, 2021, summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2021 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2022 and beyond.

By June 30, 2022, Capilano University's final 2021 Climate Change Accountability Report will be posted to our website at www.capilanou.ca.

EMISSIONS & OFFSETS

Capilano University 2021 GHG Emissions and Offsets	
GHG Emissions created in Calendar Year 2021	
Total Emissions (tCO ₂ e)	1308
Total BioCO ₂	0.88
Total Offsets (tCO ₂ e)	1309
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO ₂ e)	0
Grand Total Offsets for the 2021 Reporting Year	
Grand Total Offsets (tCO ₂ e) to be Retired for 2021 Reporting Year	1309
Offset Investment (\$25 per tCO ₂ e)	\$32,725

RETIREMENT OF OFFSETS

In accordance with the requirements of the *Climate Change Accountability Act* and Carbon Neutral Government Regulation, Capilano University (**the Organization**) is responsible for arranging for the retirement of the offset's obligation reported above for the 2021 calendar year, together with any adjustments reported for past calendar years (if applicable). The Organization hereby agrees that, in exchange for the Ministry of Environment and Climate Change Strategy (**the Ministry**) ensuring that these offsets are retired on the Organization's behalf, the Organization will pay within 30 days, the associated invoice to be issued by the Ministry in an amount equal to \$25 per ton of offsets retired on its behalf plus GST.

Executive sign-off:



April 29, 2022

Signature

Date

Debbie Carter

Vice-President, Finance and Administration

Name (please print)

Title

OVERVIEW

ENVISIONING 2030

Capilano University (CapU) is at the centre of a convergence of opportunities to lead and thrive. In a world of accelerating change, evolving learner demographics, new pathways, and needs and aspirations, unique challenges are being introduced. Unprecedented technologies, shifting economic complexities, global population growth and more diverse societies. CapU must become increasingly agile to continue in its relevance and purpose.

OUR COMMITMENT

CapU is accountable to our community; our commitment to, and demonstration of, environmental stewardship is an example for others within our community. Our mission statement emphasizes our commitment to the 'establishment of policies and procedures that reflect the best standards of environmental stewardship'.

Our daily business practices reinforce our commitment to managing our resources for the benefit of present and future generations. CapU will strive to become a model environmentally responsible institution and will actively promote environmentally sustainable behaviours among our students, staff, faculty, administration, and the broader community that is CapU.

A YEAR TO RESET

Throughout our facilities, temperature setpoint or airflow setpoints are constantly adjusted to provide comfort for occupants or for operational purposes. Although these adjustments are small in nature, overtime they will increase our energy costs and emissions.

During this unique year, CapU shifted to an online content delivery model with limited staff and students onsite. This campus wide low occupancy allowed us to review and re-commission our large energy intensity use buildings, without affecting our occupant's comfort.

THE PATH FORWARD

CapU has been an active participant in Energy Conservation since 2007. During this period, the amount of work to reduce GHG emissions has been extensive. For the past few years, we have been studying, reporting and developing an electrification plan that will address the additional load from new construction and the electrification of existing buildings.

One key strategy for reducing emissions is electrification of space heating during the shoulder seasons. For each building electrified, 65-75% reductions are possible above and beyond the approximate 48% reduction already achieved through conservation. Fortuitously, this strategy also adds cooling that will prevent buildings from succumbing to climate change during the few periods where extreme weather occurs during the Fall and Summer academic semesters.

NEW BUILDING BLOCKS

New buildings are governed by emerging standards and the BC Building Code. STEP Code is a new policy tool allowing municipalities to dictate the quality of a building envelope. CapU has embraced STEP code for new construction. At the highest level, STEP code ensures that new buildings will soon become minor additions to CapU's emissions profile.

ACTIONS

The following actions were taken at CapU campuses in 2021 to minimize GHG emissions:

NEW CONSTRUCTION STANDARDS:

- LEED Gold Status
- BC Energy Step Code 4

Student Housing Project:

- On-campus housing offering 362 beds and a 250-seat dining hall.
- Wood First: Mass Timber incorporated in the gathering area of the dining hall (exposed beams) and wood frame on five upper residential floors.
- CleanBC: Targeting Step 4 of the BC Energy STEP Code, indicating an expected *GHG emissions reduction of 86 per cent* over a baseline of LEED® Gold with natural gas.

Center for Childhood Studies:

- 74 new childcare spaces (24 infants and toddlers and 50 preschooler spaces), doubling on-campus childcare for infants and preschoolers, creating a total of 143 childcare spaces on the main campus.
- New purpose-built studio space, study and research labs, classroom, faculty offices and student study areas for the Early Childhood Care and Education programs.
- Wood First: Mass Timber incorporated.
- CleanBC: Targeting Step 4 of the BC Energy STEP Code, indicating an expected GHG emissions reduction of 86 per cent over a baseline of LEED® Gold with natural gas.

UPGRADE HIGH VOLTAGE ELECTRICAL SUPPLY:

- North Vancouver Campus - Electrification
 - Increase in load of 4.3MW.
 - Facilitate load growth with a new feeder circuit (4.3km) from substation.
 - New Vista Switch location required on site.

PANDEMIC RE-COMMISSIONING:

- 400+ VAV systems returned to original balancing values.
- 50+ AHUs Supply Air Pressure reset.
- Heating Plant operational reviews (Supply Temperatures, Reset Rates, Schedules).

ENERGY MANAGEMENT ASSESMENT:

To assist CapU to optimize energy management, BC Hydro Power has sponsored participation in the Energy Management Assessment (EMA) Workshop with the end goal of developing and implementing a long-term Strategic Energy Management Plan (SEMP).

As a result of the latest EMA workshop session with the CU management team, it is recommended that initial efforts focus on the following areas to improve energy management business practices:

- *Vision & Policy:* Align energy management program efforts with the most current organizational strategy. Clarify the organizational energy policy by reaching a common understanding of institutional values, risk profile and business-driver weightings to be utilized in resolving competing priorities. Repositioning the energy conservation program as a broader operational improvement initiative that delivers total strategic value, far beyond just lower operating costs.
- *Scope & Charter:* Establish a program charter that summarizes key elements of the energy management initiative by defining the business case, scope, and overarching objectives.
- *Objectives & Target-Setting:* Set comprehensive energy management targets that account for both capital projects and non-capital activities, preferably based on energy intensity.
- *Planning & Strategy:* Develop a comprehensive, multi-year SEMF that correlates potential energy savings from capital projects, operational opportunities, and behavioral initiatives to energy consumption reduction targets.
- *Financial Decision-Making:* Engage capital planning decision-makers to better understand project valuation approaches and establish preferred formats for business case submittals.

RETROFIT PROJECTS:

Library Building Façade

- Replaced the existing envelope (exterior walls and windows) of the original 1973 one-level Library to improve comfort, reduce energy consumption, and extend building life.

Center for Student Success – Phase 2

- Various student-facing support services will be brought together into one convenient location in the Library Building. The space will include café seating, universal washrooms, study, and collaboration areas. HVAC redesign for occupant comfort and energy efficiency.

ENERGY MANAGEMENT PROJECTS:

BC Hydro: Continuous Optimization

- Multiple buildings underwent optimization reviews by independent third parties. The results provided approximately 125,000 kwh in savings.

BOSA Building: LED Lighting Renewal

- Replace all existing fixtures with new LED ballasts and bulbs.

CONTINUING TO REDUCE EMISSIONS

Sustainability Committee Creation:

With the creation of the Sustainability Committee, we expect to have more stakeholder engagement activity. Previously, sustainable efforts were driven solely by the Facilities department which primarily focused on operations. With the committee approach we expect to have more creative ideas, unique change behavior policies and campus wide acceptance when moving projects forward.

Continuing Projects: Electrification of the Center for Sport and Wellness (CSW):

Phase 1 of the retrofit of the CSW was completed in 2020, replacing natural gas heating on the west side of the building and installing a highly efficient variable refrigerant flow system. Phase 2 involves a new heat-recovery chiller and is being planned.

Campus Energy and Emissions Plan:

In 2020, CapU developed a draft 10-year Campus Energy and Emissions Plan (CEEP), that focused on policy renewal, future infrastructure growth, energy supply and electrification opportunities. The plan aims to achieve and maintain a 50% reduction from our 2007 baseline emissions through 2030, despite planned growth of enrollment and infrastructure. The plan is currently undergoing internal review and revision, but CapU will continue to meet and exceed provincial goals and requirements related to reducing emissions.

Electrification:

The electrification upgrade to the North Vancouver Campus is a key strategy for reducing emissions through electrification of space heating during the shoulder seasons.

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