

## Title

***2020 BC Public Service Organization Climate Change Accountability Report***

## Organization

Thompson Rivers University



TRU's first no-fossil-fuel building. The Chappell Family Building for Nursing and Population Health opened in 2020 and is the campus's first building that burns no natural gas for heating.

## Declaration statement

This Climate Change Accountability Report for the period January 1, 2020 to December 31, 2020 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2020 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2021 and beyond.

By June 30, 2021 Thompson Rivers University's final *2020 Climate Change Accountability Report* will be posted to our website at

<https://www.tru.ca/sustainability/sustainability-office/plans-reports-surveys.html>

## Overview:

### Actions taken in 2020 to minimize emissions.

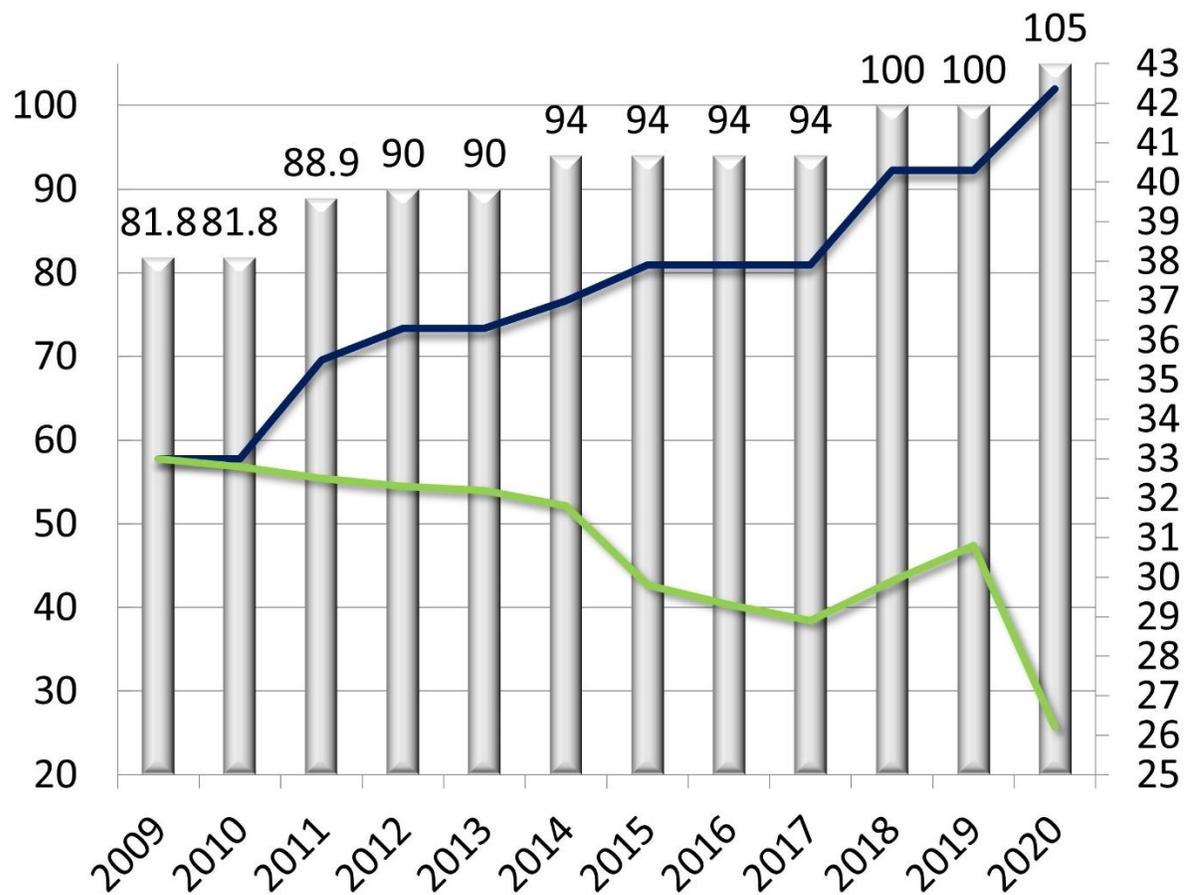
## Buildings & Campus - Energy Reduction Projects and Initiatives

### *Low Carbon District Energy System (LCDES)*

In 2020 Thompson Rivers University partnered with creative energy and started the process to build a low carbon district energy system on the campus which, when complete in 2030, is expected to reduce emissions from heating the campus buildings by 95% compared to a 2020 baseline. The system design is complete; BC Hydro has approved it; engagement sessions with the TRU community have taken place; and Creative Energy will pay for most of the whole system and then act as the utility provider to TRU for the next 30 years to recoup its investment. The system will be built in three phases. Phase 1 began in 2020 and will consist of nine main campus buildings; it should be done by 2025. The system will use a 2-stage heating system using BC Hydro electricity to power air-source and water-source heat pumps. Combined, the heat pumps can extract heat from the air even when it drops to -15C. The system will also have natural gas boilers to help with cooling peaks that are colder than -15C.

### *Revolving Energy Fund*

The Revolving Energy Fund (REF) continues to grow upon the completion of annual energy conservation projects and accumulated savings. TRU remains on track towards a 40 percent reduction in GHG emissions by 2022. In addition to technical changes, TRU's involvement over the years in the Energy Wise Network Program and the support of the TRU Environmental Sustainability Advisory Committee, and the TRU Sustainability Ambassador Program (which educate, engage and empower students and staff), have helped garner the much needed internal support towards reducing our carbon emissions and environmental impact. The table below illustrates TRU's reductions in the Energy Management program (EM) to date relative to growth of building space.



- Building Area  
(x1,000 net m<sup>2</sup>)
- Energy Use without EM  
Program (estimate)
- Energy Use with EM  
Program

***Continuous Optimization program - Round 2***

TRU has completed Round 2 of BC Hydro’s Continuous Optimization Program at A&E, IB and HOL. All Round 1 measures have been reviewed and, based on the changes in occupancy, building use and the building’s systems, new recommendations were suggested and implemented upon (especially at HOL) to ensure each building is performing optimally. We anticipate a total of 375,000 kWh will be saved each year.

### ***DDC optimization (direct digital controls)***

Based on a campus-wide study (funded by the Fortis Custom Design program), most DDC optimization measures recommended in the study were implemented, which included nighttime setbacks, reduced minimum damper positions, and weather predictors. We will see 2500 GJ and 145,000 kWh of savings every year.

### ***Condensing make-up air unit installation***

One condensing make-up air unit was installed at the Gym building to replace an old make-up air unit. The new unit provides much higher efficiency and longer life. About 200 GJ will be saved every year by installing this unit.

## **Transportation**

### ***TRU BikeShare Program***

The university bike share program was re-structured with a focus on encouraging TRU staff, faculty, and students to purchase their own e-bike by providing an ebike to try out for free for a few days before committing to a significant purchase. An incentive program for employees offering 10% off of the purchase of a bicycle (up to a maximum of \$300; and for new or used, and regular or ebikes) proved popular in 2020 with approximately 70 people taking advantage of it.

### ***TRU CarShare & Zipcar Programs***

Car sharing on campus suffered the loss of the public car sharing company previously partnered with Zipcar. The organization withdrew from the entire province at the end of 2020. Zipcar was popular with students due to the low rental rates and convenient reservation system. The business-use car sharing service for TRU staff and faculty (called 'TRU CarShare'), however, has continued but at a reduced capacity due to low demand as a result of covid-19 making local and regional business travel very unnecessary. Two of the three vehicles have been re-assigned to allow them to be used on campus while demand for business travel is low, leaving a single vehicle available for regular use.

### ***Telematics***

Telematics trackers (supplied by Advantage Asset Tracking) were installed on most of the university's fleet vehicles for compliance reporting and maintenance tracking. These trackers were also used to inventory the fleet and index fuel and maintenance costs with the intention of building a case for transitioning the fleet to EV's. This work is ongoing.

### ***E3 Program (managed by Fraser Basin Council)***

Further to the fleet reporting systems using telematics, the university is also report on its fleet through a system called E3, which looks at maintenance and fuel costs and suggests fleet changes appropriate for saving money and reducing emissions. The main objective of the E3

program is to continuously work to make the fleet more sustainable, and help improve the fleet drivers' skills.

## Campus Community Engagement

### ***Launch of Campus Strategic Sustainability Plan - 2020-2025 (CSSP)***

The CSSP is a comprehensive plan that takes a holistic view of strategies over the next 5 years, incorporating more than 117 recommended strategies across four key focus areas (goals): Operations & Planning, Advocacy & Engagement, Learning, and Administration. These strategies are not all the responsibility of one department or office, rather they are shared among many. The CSSP is intended to provide a framework for various TRU departmental and operational units who have a role in advancing the campus sustainability initiatives. This comprehensive approach will allow each office or department to see where and how it can play a role in TRU's sustainability journey. The plan identifies six priorities over the next five years:

1. Plan for Carbon Neutral and Net Zero Campus
2. Eliminate Single-Use Plastics and Other Single-Use Items
3. Integrate Sustainable Purchasing Throughout Campus Operations
4. Conserve Potable Water
5. Advance Sustainability Performance of Campus Built Environment
6. Champion Sustainability Beyond Campus for Global Impact (which entails increasing the impact of the TRU Student and Employee Ambassador Programs)

### ***Event - The BC Cool Campus Challenge***

The BC Cool Campus Challenge was TRU's 2020 campaign event for its participation in the [Energy Wise Network](#) program, which is a BC Hydro and Fortis funded program to help organizations run energy conservation behaviour change campaigns. Here is the opening paragraph from the event media release:

"The *BC Cool Campus Challenge* gives TRU community members an opportunity to [make a pledge](#) to take personal steps reduce fossil fuel use and help TRU become the 'coolest campus' in BC. The increasing significance of climate change makes this year's challenge almost as important as last year's inaugural event, which was initiated to reduce use of natural gas in many parts of BC during a gas crisis. Several BC post-secondary institutions are participating in this year's *BC Cool Campus Challenge*, which will continue with the main message of the importance of fossil fuel use awareness and reduction. TRU wants to once again demonstrate climate leadership and help reduce our climate impact. The event runs from January 6 to March 1, 2020 and the theme is 'Hands-On Action'."

## **Plans to continue reducing emissions in 2021 and beyond.**

### **Buildings & Campus**

#### ***Low Carbon District Energy System (LCDES)***

The LCDES will likely be the most significant project to help reduce the campus' emissions for the next ten years. See details on the project on page 2 under 'Low Carbon District Energy System'. Phase 1 started in 2020 and will continue throughout 2021 until 2025. Phase 2 and 3 of the LCDES will take place between 2025 and 2030. Negotiations with the City of Kamloops are progressing in a positive direction regarding their involvement in Phase 2. Phases 2 and 3 will involve the campus' remaining buildings and, once complete, the LCDES has the potential to reduce the emissions from heating the campus' buildings by close to 95%.

#### ***Continuous Optimization program - Round 2***

BC Hydro approved another two buildings (OM and WL) to go through Round 2 of the Continuous Optimization Program, and to be recommissioned again. All Round 1 measures will be reviewed and, based on the changes in occupancy, building use and the building's systems, new recommendations will be made to ensure each building is performing optimally.

#### ***DDC Optimization***

TRU will implement the recommended DDC optimization measures at Science, Trades and IB buildings from another Fortis energy study (Custom Design program), which will include heating system RCx, supply air temperature reset, demand controlled ventilation, scheduling, and weather predictors.

### **Transportation**

#### ***TRU BikeShare Program***

The university bike share program will continue to be used to encourage new ebike riders to purchase bicycles. Pair this with a planned expansion of the purchase incentive program, and TRU hopes to encourage even more people to start riding bicycles to campus.

#### ***TRU CarShare & 'Zipcar' Programs***

The business-use car share program (called 'TRU CarShare') will be returned to its former operating capacity as demand returns to encourage more sustainable choices for local and regional business transportation. The Sustainability Office has begun the search for a replacement car sharing company (like Zipcar) since there will once again be a demand for such a service with students returning to campus in the fall of 2021.

### ***Telematics & E3***

The various fleet reporting tools that TRU is currently working on will be used and expanded upon to create a plan to transition the campus vehicle fleet to electric vehicles wherever possible and whenever new vehicles are purchased.

## **Campus Community Engagement**

### ***Follow-through with 5-Year Campus Strategic Sustainability Plan - 2020-2025 (CSSP)***

As stated on page 5 regarding the CSSP, it lays out the direction of TRU's Sustainability priorities for the next five years. Dealing proactively with reducing emissions and dealing with the effects of climate change are central to the plan. Once again, the plan identifies six priorities over the next five years:

1. Plan for Carbon Neutral and Net Zero Campus
2. Eliminate Single-Use Plastics and Other Single-Use Items
3. Integrate Sustainable Purchasing Throughout Campus Operations
4. Conserve Potable Water
5. Advance Sustainability Performance of Campus Built Environment
6. Champion Sustainability Beyond Campus for Global Impact (which entails increasing the impact of the TRU Student and Employee Ambassador Programs)

### ***Sustainability Programs and Events***

TRU will continue hosting and organizing a variety of programs and events to engage the campus community in sustainability initiatives and campaigns. Here are just a few initiatives planned for 2021. Of note for 2021 are:

- the launch of a pilot project in September to plant more trees on the campus in what hopes to be a national program called the Canadian Campus Tree Program;
- building on the success of the Sweater Dance event in February 2021, A new event called the Energy Dance will take place in early October 2021 (as this year's campaign submission in the Energy Wise Network program). The event will focus on participants making energy reduction pledges;
- now that COVID-19 is more manageable and students and staff are coming back to campus this September, we will be re-launching the student and employee sustainability ambassador programs, which will help to spearhead many sustainability initiatives that were on hold;
- likewise, now that COVID-19 is almost behind us, restarting--with improved elements--the TRU CarShare and BikeShare programs will be happening.

## Emissions and Offset Summary Table:

<b>Thompson Rivers University 2020 GHG Emissions and Offsets</b>	
<b>GHG Emissions created in Calendar Year 2020</b>	
Total Emissions (tCO <sub>2</sub> e)	(Cell A) 3379 + (Cell B) 0 = 3379
Total BioCO <sub>2</sub>	(Cell C) 0 + (Cell D) 3.61 = 3.61
Total Offsets (tCO <sub>2</sub> e)	Cell E = 3375
<b>Adjustments to Offset Required GHG Emissions Reported in Prior Years</b>	
Total Offsets Adjustment (tCO <sub>2</sub> e)	Cell F = -30
<b>Grand Total Offsets for the 2020 Reporting Year</b>	
Grand Total Offsets (tCO <sub>2</sub> e) to be Retired for 2020 Reporting Year	(Cell E) 3375 + (Cell F) -30 = 3345
Offset Investment (\$25 per tCO <sub>2</sub> e) [Grand Total Offsets to be Retired x \$25/tCO <sub>2</sub> e]	(Cell E + Cell F) 3345 X \$25 = \$83,625

[Note, BioCO<sub>2</sub> is included in Total Emissions but not Total Offsets. For K-12 and Post-Secondary organizations, and BC Transit, Total Offsets will not equal Total Emissions minus Total BioCO<sub>2</sub> because offset exempt emissions for buses are included within Total Emissions.

Emissions and offset investment amounts will be validated by CAS prior to distributing invoices.

You must round "Grand Total Offsets to be Retired" to a whole number (no decimal places) before multiplying by \$25 (e.g., 43.2 = 43, 43.5 = 44.)

### Retirement of Offsets:

In accordance with the requirements of the Climate Change Accountability Act and Carbon Neutral Government Regulation, Thompson Rivers University (the **Organization**) is responsible for arranging for the retirement of the offsets obligation reported above for the 2020 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 tonne of offsets retired on its behalf plus GST.

### Executive sign-off:



June 1, 2021

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Signature

Date

Matt Milovick

Vice-President Administration and Finance

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Name (please print)

Title

Please scan and email the completed form to [Carbon.Neutral@gov.bc.ca](mailto:Carbon.Neutral@gov.bc.ca)