



UBC Vancouver Campus – 2016 Greenhouse Gas Emissions Inventory

| Scope | Component [a] | Usage Data | GHG Emissions (tCO ₂ e) |
|--|--|-----------------|------------------------------------|
| Scope 1 – Direct | Core Buildings [b] | | |
| | Natural gas for District Energy | 424,697 GJ | 21,181 |
| | Natural gas direct use | 113,357 GJ | 5,653 |
| | Biomass for District Energy [c] | 127,989 GJ | 301 |
| | Renewable Natural Gas [d] | 62,213 GJ | 18 |
| | Ancillary buildings [e] | | |
| | Natural gas for District Energy | 118,701 GJ | 5,920 |
| | Natural gas direct use | 74,326 GJ | 3,707 |
| | Biomass for District Energy [c] | 7,518 GJ | 18 |
| | TRIUMF – Natural gas direct use (1/12 share) [f] | 931 GJ | 46 |
| | Fleet | | |
| | Gasoline | 321,230 L | 734 |
| | Biodiesel | 75,083 L | 207 |
| | Natural Gas | 23,541 L | 73 |
| | Propane | 2,434 L | 4 |
| Scope 2 – Indirect | Core Buildings – Electricity | 145,313,732 kWh | 1,569 |
| | Ancillary Buildings – Electricity | 54,953,250 kWh | 593 |
| | TRIUMF – Electricity (1/12 share) [f] | 5,363,587 kWh | 58 |
| Scope 3 | Paper | 77,063 PKG | 453 |
| Total Campus emissions offset under GGRTA (Scope 1, 2, and Paper) [g] | | | 40,536 |
| Scope 3 – Optional | Staff and faculty air travel | | 12,357 |
| | Solid waste [h] | | 1,012 |
| | Commuting [h] | | 34,228 |
| | Building lifecycle [h] | | 12,563 |

[a] Fugitive emissions have been deemed out of scope as they were estimated to comprise less than 1% of campus emissions.

[b] Core buildings comprise of academic and administrative buildings.

[c] UBC is required to offset the CH₄ and N₂O portions of biomass combustion. In addition, the Bioenergy Research and Demonstration Facility (BRDF) consumes a small amount of natural gas upon start-up/shutdown.

[d] UBC is required to offset the CH₄ and N₂O portions of renewable natural gas.

[e] Ancillary buildings include student housing, conference, athletic & parking facilities.

[f] UBC owns a 1/12th share of TRIUMF. This inventory includes 1/12th of the facility's energy usage and emissions.

[g] Values may not sum precisely due to rounding. This table shows only the Vancouver campus emissions that were offset in 2016. An additional 4,927 tCO₂e associated with UBC Properties Trust and off-campus properties were also offset in 2016.

[h] These emissions have been estimated from published conversion factors. Improvements to methodologies may allow for other Scope 3 components to be included in future inventories.

To read the full 2016 Carbon Neutral Action Report, please visit: <http://sustain.ubc.ca/our-commitment/strategic-plans-policies-reports/annual-reports>