



**UBC Vancouver Campus - 2017 Greenhouse Gas Emissions Inventory**

Scope	Component [a]	Usage Data		GHG Emissions (tCO <sub>2</sub> e)
Scope 1 - Direct	Core Buildings [b]			
	Natural gas for District Energy	441,549	GJ	22,021
	Natural gas direct use	129,598	GJ	6,463
	Biomass for District Energy [c]	129,312	GJ	295
	Renewable Natural Gas [d]	67,401	GJ	20
	Ancillary buildings [e]			
	Natural gas for District Energy	120,711	GJ	6,020
	Natural gas direct use	84,484	GJ	4,214
	Biomass for District Energy [c]	28,541	GJ	64
	TRIUMF - Natural gas direct use (1/12 share) [f]	1,086	GJ	54
	Fleet			
	Gasoline	304,043	L	696
	Biodiesel	54,948	L	150
	Natural Gas	25,848	L	80
	Propane	190	L	0.3
Scope 2 - Indirect	Core Buildings - Electricity	139,633,234	kWh	1,508
	Ancillary Buildings - Electricity	65,973,563	kWh	713
	TRIUMF - Electricity (1/12 share) [f]	5,910,634	kWh	64
Scope 3 - In Scope	Paper	71,975	PKG	423
<b>Total Campus emissions offset under GGRTA (Scope 1, 2, and Paper) [e]</b>				<b>42,786</b>
Scope 3 - Not required to be offset	Staff and faculty air travel			16,693
	Solid waste [h]			964
	Commuting [h]			41,738
	Building lifecycle [h]			12,855

[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 CH<sub>4</sub> and N<sub>2</sub>O 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 CH<sub>4</sub> and N<sub>2</sub>O portions of renewable natural gas.

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

[f] UBC owns a 1/12<sup>th</sup> share of TRIUMF. This inventory includes 1/12<sup>th</sup> 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 2017. An additional 6,099 tCO<sub>2</sub>e associated with UBC Properties Trust and off-campus properties were also offset in 2017.

[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 2017 Carbon Neutral Action Report, please visit: <http://sustain.ubc.ca/our-commitment/strategic-plans-policies-reports/annual-reports>