



University of Manitoba - 2016/2017 Greenhouse Gas Emissions Inventory

Scope	Description	Component	Usage Data	GHG Emissions	
Scope 1 - Direct	Emissions from stationary combustion	Buildings [a]	Heating - Natural Gas	623181 GJ	26309 tCO ₂ e
			Heating - Fuel Oil	3360907 GJ	495 tCO ₂ e
	Emissions from other sources	Transportation	Fleet Operations	179020 L	454 tCO ₂ e
		Agriculture	Enteric Fermentation	757 head	573 tCO ₂ e
			Manure Management	3108 head	724 tCO ₂ e
		Industrial Processes	Nitrous Oxide	0.02 t	6 tCO ₂ e
ODS Substitutes	23.51 kg		46 tCO ₂ e		
Scope 2 - Indirect	Emissions from purchased electricity	Centres [b]	Electricity	110477 MWh	436 tCO ₂ e
	Emissions from other sources	Buildings [c]	Cooling - Chilled Water	96626 GJ	53 tCO ₂ e
			Heating - Steam	38482 GJ	6208 tCO ₂ e
Scope 3 - Optional	Other fuel and energy related activities	Transportation	Shuttle Service	1600 L	4 tCO ₂ e
	Commuting		Commuting - SOV	3646586 L	8482 tCO ₂ e
			Commuting - Public Transport	1195605 L	3296 tCO ₂ e
			Commuting - Carpool	429390 L	999 tCO ₂ e
	Business travel		Business - Air Travel	41547723 km	4454 tCO ₂ e
			Business - Vehicle Travel	76587 L	178 tCO ₂ e
	Purchased goods and services	Emodied Paper Product	Virgin Paper	96.13 t	34 tCO ₂ e
			Predominantly Recycled Paper	82.29 t	90 tCO ₂ e
Waste generated in operations	Waste	Solid Waste Disposal	866.61 t	1293 tCO ₂ e	
Total Campus GHG emissions for 2016/2017 [d] [e]				54134 tCO₂e	

[a] Buildings for Direct Energy calculations included LGS Powerhouse, LGS Campus, LGS Max Bell, 1 Research Road, LGS Campus Day Care, Southwood Lands, 78 Innovation Drive, 37 Kings Drive, Bannatyne Campus, and The Point.

[b] Centres for Electricity calculations included Fort Garry Campus, Richardson Centre, Crop Technology, Strawbale House, Bannatyne Campus, Glenlea, Delta Marsh, Carman, and Norrie Centre.

[c] Buildings for Indirect Energy calculations included Basic Medical Sciences, Apotex Centre, and Brodie Centre.

[d] These emissions have been estimated based on methodology from the Canada - National Inventory Report 1990 - 2014 Part 1. Table 1-1.

[e] Values may not sum precisely due to rounding and conversions.