



Sustainability, Energy & Carbon Management

A low-angle, black and white photograph of a modern building's facade, showing a grid of windows and structural lines. A portion of the sky is visible through the window grid on the left side.

Greenhouse Gas Assessment

for **University of Melbourne**
CY 2016

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This assessment report has been prepared for the University of Melbourne.

Address

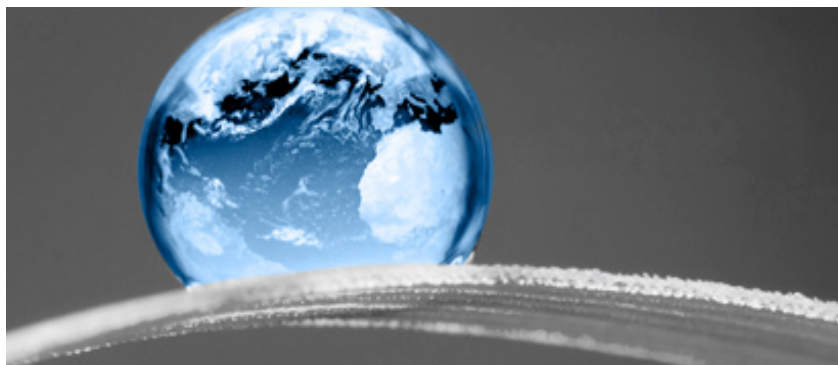
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Pangolin Associates Pty Ltd (Pangolin Associates) were commissioned to conduct a comprehensive assessment of the greenhouse gas (GHG) emissions accountable to the Australian operations of the University of Melbourne ('UoM') for the 2016 calendar year (CY).

Based on best available data, the estimated net total carbon emissions for UoM was 202,656.8 tonnes of carbon dioxide equivalents (tCO₂-e). This total includes indirect contributions along the supply chain (scope 3 emissions) and any voluntary carbon credit and renewable GreenPower purchases.

Total energy consumption over the assessment period was 677,249.3 gigajoules (GJ).

UoM's assessment results are summarised below.

A comparison of the individual sector contributions to gross GHG emissions revealed that 'Utilities' was the largest contributor, at 147,413.8 tCO₂-e (72.5% of gross GHG Protocol emissions). The principal activity contributing to GHG emissions in this sector was 'Electricity' consumption, from a total of 110,632,406 kWh per annum (64.2% of gross GHG Protocol emissions).

Primary statement of GHG emissions & energy consumption for UoM			
Summary of GHG emissions for the CY 2016			
Operational Boundary	Associated Inventory/Service:		(tCO ₂ -e/yr)
Scope 1	Natural Gas, Transport Fuels, Stationary Fuels, Refrigerants		15,871.9
Scope 2	Purchased Electricity		119,483.0
Scope 3	Equipment, Flights, Third Party Services, Off-site Waste Disposal, Transmission & Distribution losses, Fuel Extraction, Production & Distribution losses, Other Utilities		68,066.9
Gross Total ^{1,2}			203,421.8
Credits ^a	Other Offsets		-765.0
GHG Protocol (scope 1, 2 & 3)			Net Total ^{1,2} 202,656.8
Scope 1 & 2		677.2 TJ	Net Total ^{1,2} 133,952.7
(a) For GreenPower accounting description, please see Appendix B.			

¹ Includes numerical rounding to one decimal point. Table columns and figure percentages may not sum due to rounding.

² Scope 1 & 2 emissions are tabulated according to the National Carbon Offset Standard for the relevant reporting period.

The following Figures and Table provides a summary breakdown of the GHG emissions by campus and activity sector for UoM.³⁴

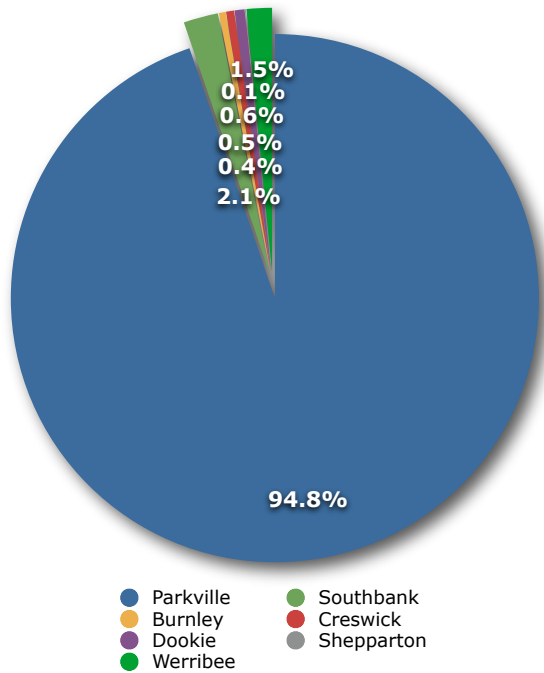


Figure I GHG emissions for UoM by campus³

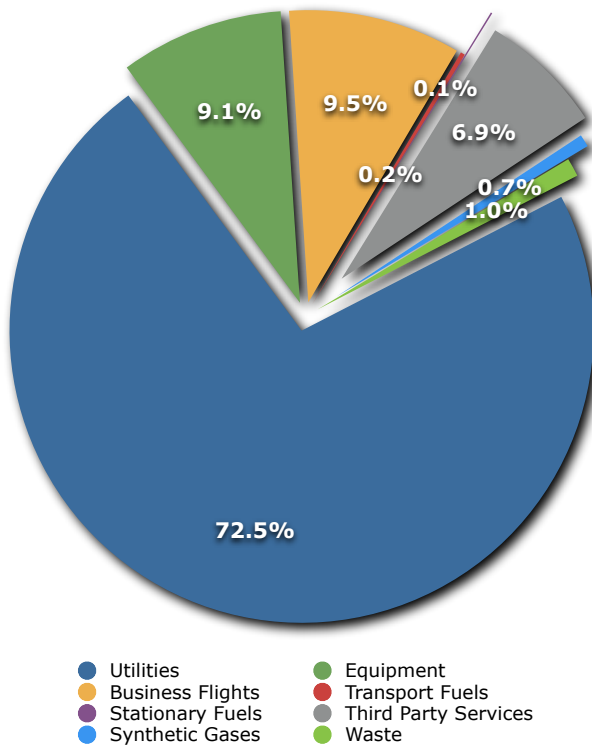


Figure II GHG emissions for UoM by activity sector⁴

³ The majority of data has not been disaggregated by campus.

⁴ Due to data constraints, air travel data is incomplete and emissions from this source are only related to flights booked through Campus Travel. As a result, business flight GHG emissions are expected to represent a significantly higher proportion of the total shown in Figure II. See Section 2.3 of this report for more details

Summary of CO ₂ -e emissions by Activity for UoM			
Activity Sector	Activity/Service	Emissions (tCO ₂ -e/yr)	Percentage
Utilities	Electricity	130,546.3	64.2%
	Natural Gas	14,885.3	7.3%
	Telecommunications	1,488.0	0.7%
	Water	494.2	0.2%
Equipment	IT Equipment	16,584.3	8.2%
	Paper	156.0	0.1%
	Stationery	1,369.4	0.7%
	Packaging (Cardboard)	300.0	0.1%
Flights	Business Flights	19,409.6	9.5%
Transport Fuels	Post 2004 Gasoline	284.0	0.1%
	Post 2004 Diesel oil	210.5	0.1%
Stationary Fuels	LPG	175.0	0.1%
Third Party Services	Cleaning Services	5,815.1	2.9%
	Food & Catering	1,093.6	0.5%
	Postage	253.1	0.1%
	Printing	2,043.1	1.0%
	Domestic Hotel Accommodation	868.5	0.4%
	International Hotel Accommodation	491.4	0.2%
	Advertising	3,473.6	1.7%
Synthetic Gases	Refrigerant	1,402.2	0.7%
Waste	Waste-landfill	1,834.6	0.9%
	Recycling	244.0	0.1%
Gross Total¹		203,421.8	100.0%
Credits	Other	-765.0	
Net Total¹		202,656.8	
Activity values presented in this table may be a derived number expressed as the quantity unit for use with the NGA factors workbook or NGER (Measurement) Determination (whichever is relevant) as converted from raw data supplied. Please see Assumptions section where applicable for derivations.			



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