

Environmental Performance Indicators

Environment	Singtel			Optus			Singtel Group		
	2018	2017	2016	2018	2017	2016	2018	2017	2016
Total energy use (GJ)	1,395,100	1,404,843	1,379,633	1,724,106	1,702,440	1,657,262	3,119,206	3,107,283	3,036,895
Energy intensity (GJ/S\$million revenue)	166	177	180	189	194	178	178	186	179
Energy intensity (GJ/TB*)	0.43	0.53	0.77	0.71	0.92	1.28	0.55	0.69	0.98
(i) Electricity Use (GJ)	1,372,809	1,385,099	1,358,030	1,692,773	1,665,694	1,618,544	3,065,582	3,050,793	2,976,574
Electricity Use (MWh)	381,336	384,750	377,231	470,215	462,693	449,595	851,551	847,443	826,826
Electricity Intensity (GJ/S\$million revenue)	164	175	177	185	190	174	175	183	175
Electricity Intensity (GJ/TB)	0.42	0.52	0.76	0.70	0.90	1.25	0.54	0.67	0.96
Electricity Intensity (kWh/TB)	118	144	210	195	251	348	151	187	268
(ii) Fuel use from non-renewable sources (GJ)	21,935	19,369	21,198	30,869	36,282	38,255	52,804	55,651	59,453
(iii) Fuel use from renewable sources (GJ)	356	375	405	464	464	463	820	839	868
Solar energy (MWh)	99	104	112	129	129	129	228	233	241
Total carbon emissions (tonnes CO₂ equivalent)¹	174,391	173,811	174,112	418,760	418,269	420,827	593,151	592,080	594,938
(i) Scope 1	3,367	1,992	4,629	2,725	2,495	2,614	6,092	4,487	7,243
Refrigerants	1,828	643	3,174	589 ²	N.A. ²	N.A. ²	2,417	643	3,174
Fuel combustion	587	582	525	329	397	355	916	979	880
Company fleet	952	767	929	1,807	2,097	2,259	2,759	2,864	3,188
(ii) Scope 2	164,470	165,943	163,416	399,257	397,785	394,249	563,727	563,728	557,665
(iii) Scope 3	6,554	5,876	6,067	16,778	17,989	23,964	23,332	23,865	30,030
Contractor fleet	687	733	813	1,168	1,119	4,810	1,855	1,852	5,623
Air travel	3,845	3,113	3,180	8,004	8,551	9,442	11,849	11,664	12,621
Employee commute ³	1,821	1,821	1,821	7,606	8,319	9,712	9,427	10,140	11,533
Retail franchisees	201	209	253	N.A.	N.A.	N.A.	201	209	253
Carbon Intensity (tCO₂e/S\$ million revenue)	21	22	23	46	48	45	34	35	35
Carbon Intensity (tCO₂e/TB)⁴	0.05	0.06	0.09	0.17	0.22	0.31	0.10	0.13	0.18
Total Water Use (m³)	752,207⁵	814,447	756,398	74,235⁶	82,111	70,254	826,442	896,558	826,652
Water Intensity (m³/S\$million revenue)	90	103	99	N.A.	N.A.	N.A.	47	54	49
Total Waste: hazardous and non-hazardous (tonnes)	6,289	4,613	4,223	2,197⁸	1,853 ⁸	1,503 ⁸	8,486	6,466	5,726
Total Non-Hazardous Waste by disposal method (tonnes)⁷	2,227	2,194	–	1,972⁸	1,177 ⁸	–	4,199	3,371	–
Incineration with energy recovered	1,968	2,116	–	N.A.	N.A.	–	1,968	2,116	–
Landfill	0	0	–	1,720	517	–	1,720	517	–
Recycle / Reuse	259	78	–	252	660	–	511	738	–
Total Hazardous Waste by disposal method (tonnes)⁷	4,062	2,419	–	225⁸	677 ⁸	–	4,287	3,095	–
Incineration with energy recovered	388	285	–	0	N.A.	–	388	285	–
Landfill	593	184	–	3	10	–	596	193	–
Recycle / Reuse	3,081	1,950	–	222	667	–	3,303	2,617	–
Customer E-waste Recycling (tonnes)	36	21	–	4	4	–	40	25	–

Footnotes:

- * TB refers to terabyte of data transported across our network. Terabyte related figures of Optus and the Singtel Group for 2016 and 2017 were restated.
- ¹ The carbon emissions reported in the table is based on the reporting requirements of the WRI and WBCSD 'GHG Protocol Corporate Accounting and Reporting Standard'. The equivalent CO₂ emissions for electricity use are calculated based on the updated simple operating margin grid emission factors from the National Environment Agency in Singapore for the relevant time period and from corresponding states in Australia. Scope 1 direct emissions are calculated using the 2010 Guidelines to DEFRA/DECC's GHG conversion factors for company reporting (Annex 1). Scope 3 other indirect emissions are calculated using the 2010 Guidelines to conversion factors for DEFRA/DECC's GHG company reporting (Annex 6 and 7). Scope 3 air travel emission factors are derived from WRI, DEFRA, Oxford University and the UK Royal Commission on Environmental Pollution.
- ² Optus uses a combination of air, water and refrigerant cooling systems. Refrigerants tracked and reported from FY2018.
- ³ Employee commute carbon emissions data will be updated only when there is a significant change in our company's operations or workforce.
- ⁴ Covers Scope 1 and 2 only.
- ⁵ Total volume withdrawn from municipal water supplies and includes use of 118,793m³ NEWater instead of potable water.
- ⁶ Total volume withdrawn from municipal water supplies and includes rainwater harvesting of 3,660m³ instead of potable water. Water use for Optus Sydney campus only.
- ⁷ New GRI standards indicators tracked from FY2017.
- ⁸ Waste across facility under Optus waste direct contract and not inclusive of all sites.