

2017 Data Factsheet: Environmental Indicators

As part of Microsoft's commitment to disclose information about our environmental footprint, below is a compilation of environmental indicators including our greenhouse gas emissions, energy consumption, water consumption and discharge, and waste.

Greenhouse Gas Emissions (mtCO₂e)

	FY17	FY16	FY15
Scope 1 ¹	97,639	94,651	94,548
Scope 2 - Location-Based	2,692,709	2,139,402	1,697,297
Scope 2 - Market-Based ¹	139,110	37,087	153,773
Scope 3 - Purchased Goods & Services / Capital Goods ²	14,000,000	10,000,000	8,000,000
Scope 3 - Fuel- and Energy-Related Activities	540,000	440,000	350,000
Scope 3 - Upstream Transportation ²	100,000	100,000	100,000
Scope 3 - Waste	700	800	1,300
Scope 3 - Business Travel ¹	337,122	327,483	324,076
Scope 3 - Employee Commuting ²	330,000	280,000	270,000
Scope 3 - Downstream Transportation ^{2,9}	TBD	TBD	TBD
Scope 3 - Use of Sold Products ^{2,9}	6,000,000	TBD	TBD
Scope 3 - End of Life of Sold Products ^{2,9}	20,000	TBD	TBD
Scope 3 - Downstream Leased Assets	700	7,600	5,300

¹ Included in Carbon Neutral boundary.

² The reported emissions for this category represent an estimate based on broad-based assumptions and have therefore been rounded. This category may be under- or over-reported by as much as 50 percent.

⁹ This category is undergoing a methodology revision and will be updated shortly.

Greenhouse Gas Emissions Normalized by Revenue (mtCO₂e/M\$)

	FY17	FY16	FY15
Scope 1	1.1	1.1	1.0
Scope 2 - Location-Based	29.9	25.1	18.1
Scope 2 - Market-Based	1.5	0.4	1.6
Scope 3 - Business Travel	3.7	3.8	3.5

Energy Use (MWh)

	FY17	FY16	FY15
Electricity	6,344,479	5,048,891	3,984,680
Other Fuels ³	374,465	365,306	377,176
Renewable Energy Usage ⁴	6,104,758	4,852,643	3,836,043
Renewable Energy Credits	5,119,876	4,055,299	3,664,469
Power Purchase Agreements	984,464	796,802	170,887
On-Site Renewable Energy	418	542	687
Percentage of Renewable Electricity ⁴	96%	100%	100%

³ Other fuels include natural gas, diesel, jet fuel, district heating, and chilled water.

⁴ Represents the value prior to historic benchmarking due to acquisitions and methodology changes.

Carbon Neutrality (mtCO₂e)

	FY17	FY16	FY15
GHG Emissions within Carbon Neutral Boundary^{4,5}	573,871	431,251	548,122
Offsets Purchased	573,871	431,251	548,122
Net GHG Emissions within Carbon Neutral Boundary	0	0	0
Percent of Total GHG Emissions Balanced by Carbon Offsets⁴	100%	100%	100%

⁴ Represents the value prior to historic benchmarking due to acquisitions and methodology changes.

⁵ Carbon Neutral Boundary includes global Scope 1, Scope 2 Market-Based, and Scope 3 business air travel.

Water Withdrawals (m³)⁶

	FY17	FY16	FY15
Municipal	5,118,385	4,940,625	4,597,311
Other Sources	152,666	59,271	36,177

⁶ In FY16 we adjusted our water data collection methodology to include estimating for leased sites.

Waste Generation (metric tons)

	FY17	FY16	FY15
Landfilled	2,047	2,243	2,434
Recycled	17,398	22,378	21,710
Incinerated	690	931	952
Composted	5,924	5,691	5,314
Hazardous Waste (included in the categories above)	2,188	1,923	419
Recycled Hazardous Waste (included in the categories above)	2,122	1,841	335

Through CDP (formerly the Carbon Disclosure Project) we have voluntarily reported our carbon footprint since 2004 and our water footprint since 2012. Please see our CDP submission for more detailed information. The greenhouse gas, energy, and water data in our CDP filings and this report represent 100 percent of Microsoft's global operations and revenue. The data in this factsheet includes the integration of LinkedIn following our acquisition of this group in 2016. To allow meaningful year-over-year comparisons, we have adjusted our data for previous years to reflect this integration.

This factsheet also reports both location- and market-based Scope 2 emissions, per the World Resources Institute Greenhouse Gas Protocol Scope 2 guidance. Location-based emissions represent the physical emissions from local energy production, while market-based emissions represent emissions from choices related to electricity supply and products. For Microsoft, market-based emissions take into account more than 6.1 billion kilowatt-hours (kWh) of renewable energy attributes that we purchased as part of our 100 percent renewable energy commitment.

2017 Data Factsheet: Additional Environmental Indicators

Greenhouse Gas Emissions (mtCO₂e)

	FY17	FY16	FY15
Scope 1 - CO ₂	73,113	75,794	79,648
Scope 1 - CH ₄	27	27	26
CH ₄ Emissions - Asia	3	3	2
CH ₄ Emissions - Europe, Middle East, Africa	9	10	12
CH ₄ Emissions - Latin America	3	3	3
CH ₄ Emissions - US	12	11	9
Scope 1 - N ₂ O	186	192	149
Scope 1 - HFCs	24,314	18,638	14,725
Scope 1 - PFC	-	-	-
Scope 1 - SF ₆	-	-	-
Scope 1 - Asia	8,454	8,264	8,781
Scope 1 - Europe, Middle East, Africa	43,158	44,191	50,677
Scope 1 - Latin America	3,632	3,726	3,468
Scope 1 - North America	42,395	38,469	31,622
Scope 2 - Location-Based - Asia	439,033	384,432	314,537
Scope 2 - Location-Based - Europe, Middle East, Africa	395,104	355,147	248,531
Scope 2 - Location-Based - Latin America	21,012	18,952	19,745
Scope 2 - Location-Based - North America	1,837,560	1,380,870	1,114,484
CO ₂ Intensity - Scope 1 + Scope 2, Location (mtCO ₂ e/MWh)	0.42	0.41	0.41

Carbon Offsets

	FY17	FY16	FY15
Percent of Total Scope 3 GHG Emissions Balanced by Carbon Offsets	2%	3%	4%
Potential for Carbon Trade Based on Recent Performance	No	No	No

Other Emissions (metric tons)

	FY17	FY16	FY15
NO_x Emissions	27	26	20
NO _x Emissions - Asia	3	2	2
NO _x Emissions - Europe, Middle East, Africa	3	3	2
NO _x Emissions - Latin America	1	1	1
NO _x Emissions - North America	20	20	16
SO_x Emissions	3	2	2
SO _x Emissions - Asia	1	1	1
SO _x Emissions - Europe, Middle East, Africa	0	0	0
SO _x Emissions - Latin America	0	0	0
SO _x Emissions - North America	1	1	1
VOC Emissions	9	10	9
VOC Emissions - Asia	0	0	0
VOC Emissions - Europe, Middle East, Africa	0	0	0
VOC Emissions - Latin America	0	0	0
VOC Emissions - North America	8	10	9
PM Emissions	2	2	2
CO Emissions	35	35	30
Ozone Depleting Substances	1,330	996	996

Other Emissions Normalized by Revenue (metric tons/M\$)

	FY17	FY16	FY15
NO_x Emissions	0.0003	0.0003	0.0002
SO_x Emissions	0.00003	0.00003	0.00002
CH₄ Emissions	0.0003	0.0003	0.0003

Electricity Consumption (MWh)

	FY17	FY16	FY15
Total Electricity Consumed	6,344,479	5,048,891	3,984,680
Electricity Consumed - Asia	682,710	585,799	457,867
Electricity Consumed - Europe, Middle East, Africa	959,501	854,564	613,124
Electricity Consumed - Latin America	91,029	63,025	64,381
Electricity Consumed - North America	4,611,239	3,545,503	2,849,307
Non-Renewable Electricity Purchased & Consumed - Asia	204,937	50,821	192,270
Non-Renewable Electricity Purchased & Consumed - Europe, Middle East, Africa	17,391	21,256	17,009
Non-Renewable Electricity Purchased & Consumed - Latin America	3,681	1,443	11,826
Non-Renewable Electricity Purchased & Consumed - North America	-	154,212	122,457
Non-Renewable Electricity by Source - Coal	42,757	61,403	111,622
Non-Renewable Electricity by Source - Petroleum	34,073	10,316	25,615
Non-Renewable Electricity by Source - Natural Gas	148,692	101,886	161,038
Non-Renewable Electricity by Source - Nuclear	487	54,127	45,288
Electricity Consumption Normalized by Revenue (MWh/M\$)	71	59	43

Renewable Energy Consumption (MWh)

	FY17	FY16	FY15
Renewable Energy Purchased & Consumed - Asia	466,243	532,119	231,841
Renewable Energy Purchased & Consumed - Europe, Middle East, Africa	941,343	831,420	594,164
Renewable Energy Purchased & Consumed - Latin America	85,935	59,677	17,332
Renewable Energy Purchased & Consumed - North America	4,611,239	3,370,016	2,707,271
Renewable Energy Purchased & Consumed - Wind	6,004,378	4,066,230	3,134,628
Renewable Energy Purchased & Consumed - Landfill Gas	-	-	8,527
Renewable Energy Purchased & Consumed - Biomass	61,029	121,000	100,000
Renewable Energy Purchased & Consumed - Hydro	33,174	408,734	142,201
Renewable Energy Purchased & Consumed - Geothermal	-	150,000	450,000
Renewable Energy Purchased & Consumed - Solar	6,177	106,679	687

Other Energy Consumption (MWh)⁷

	FY17	FY16	FY15
Total Non-Renewable Energy Purchased & Consumed	374,465	365,306	377,176
Non-Renewable Energy Purchased & Consumed - Asia	29,107	30,970	36,344
Non-Renewable Energy Purchased & Consumed - Europe, Middle East, Africa	182,074	189,357	215,117
Non-Renewable Energy Purchased & Consumed - Latin America	13,202	13,717	13,206
Non-Renewable Energy Purchased & Consumed - NorAm	150,081	131,261	112,509
Non-Renewable Energy Purchased & Consumed - Coal	-	-	-
Non-Renewable Energy Purchased & Consumed - Natural Gas	107,687	111,283	113,875
Non-Renewable Energy Purchased & Consumed - Crude Oil/Diesel	139,027	139,631	158,301
Non-Renewable Energy Purchased & Consumed - LPG/Propane/Jet Fuel	43,402	47,853	32,574
Non-Renewable Energy Purchased & Consumed - Gasoline	34,679	37,638	47,112
Non-Renewable Energy Purchased & Consumed - Chilled Water	30,121	8,659	6,833
Non-Renewable Energy Purchased & Consumed - Hot Water/Steam	19,549	20,242	18,480
Scope 3 - Category 3 (Transmission and Distribution Losses)	510,000	410,000	320,000
Scope 3 - Category 13 (Downstream Leased Assets)	3,000	7,000	5,000

⁷ Non-electricity

Water (m³)⁸

	FY17	FY16	FY15
Total Water Withdrawals	5,271,051	4,999,896	4,633,488
Water Withdrawals - Municipal Supply	5,118,385	4,940,625	4,597,311
Water Withdrawals - Surface Water	-	-	-
Water Withdrawals - Ground Water	16,517	45,663	24,626
Water Withdrawals - Salt/Brackish water	-	-	-
Water Withdrawals - Rain water	26,496	937	1,197
Water Withdrawals - Process Water	109,653	12,672	10,355
Water Withdrawals - Asia	894,887	1,021,132	1,003,802
Water Withdrawals - Europe, Middle East, Africa	880,594	1,013,801	942,174
Water Withdrawals - Latin America	93,291	115,667	113,048
Water Withdrawals - North America	3,402,279	2,849,295	2,574,465
Total Water Discharges - Municipal Treatment	5,271,051	4,999,896	4,633,488
Water Discharges - Asia	894,887	1,021,132	1,003,802
Water Discharges - Europe, Middle East, Africa	880,594	1,013,801	942,174
Water Discharges - Latin America	93,291	115,667	113,048
Water Discharges - North America	3,402,279	2,849,295	2,574,465

⁸ For more information on our water data, please see our CDP Water response at www.cdp.net.

Verification

	FY17	FY16	FY15
Scope 1 GHG Emissions	Yes	Yes	Yes
Scope 2 - Location-Based GHG Emissions	Yes	Yes	Yes
Scope 2 - Market-Based GHG Emissions	Yes	Yes	n/a
Scope 3 - Business Air Travel Emissions	Yes	Yes	Yes
Total Energy Consumed	Yes	Yes	Yes
Total Electricity Consumed	Yes	Yes	Yes
Total Renewable Electricity Consumed	Yes	Yes	Yes
Total Offsets Purchased	Yes	Yes	Yes
Total Water Withdrawals	Yes	Yes	Yes