

Environmental data

The following table provides an overview of our performance over time and includes both environmental data for our global operations (including our data centers, offices, networking infrastructure, and other facilities) and data beyond our operations (including our investments and technology). The majority of our environmental data covers Alphabet Inc. and its subsidiaries, including Google LLC. All reported data is global and annual unless otherwise specified.

We obtain third-party assurance from an independent, accredited auditor for specific environmental data as part of our [Independent Accountants' Review](#), including select GHG emissions, energy, and water metrics as indicated in the table below.

For more information on our energy use and GHG emissions, see Alphabet's CDP Climate Change Response on [Google's sustainability reports page](#).

Key performance indicator	Assured for 2021 ²³	Unit	Fiscal year ²⁴				
			2017	2018	2019	2020	2021
OUR OPERATIONS							
GHG EMISSIONS							
Emissions inventory^{25,26}							
Scope 1	●	tCO ₂ e ²⁷	66,549	63,521	66,686	38,694	45,073
Scope 2 (market-based) ^{28,29}	●	tCO ₂ e	509,334	684,236	794,267	911,415	1,823,132
Scope 2 (location-based)	●	tCO ₂ e	3,301,392	4,344,686	5,116,949	5,865,095	6,576,239
Scope 3 (total) ³⁰		tCO ₂ e	2,719,024	12,900,467 ³¹	11,669,000	9,376,000	9,503,000
Scope 3 (business travel and employee commuting, including teleworking) ³²	●	tCO ₂ e	356,060	463,467	542,000	213,000 ³³	136,000
Scope 3 (other)		tCO ₂ e	2,362,964	12,437,000	11,127,000	9,163,000	9,367,000
Total (Scope 1, 2 [market-based], and 3 [total])		tCO ₂ e	3,294,907	13,648,224 ³⁴	12,529,953	10,326,109	11,371,205
Biogenic emissions	●	tCO ₂	14,708	22,862	21,905	5,417	3,797
Operational emissions^{35,36}							
Scope 1, 2 (market-based), and 3 (business travel and employee commuting, including teleworking)	●	tCO ₂ e	931,943	1,211,224	1,402,953	1,163,109	2,004,205
Scope 1, 2 (location-based), and 3 (business travel and employee commuting, including teleworking)	●	tCO ₂ e	3,724,001	4,871,674	5,725,635	6,116,789	6,757,312
Emissions reductions and compensations for our operations							
Total emissions reduced by renewable energy PPAs and compensated for by carbon credits	●	tCO ₂ e	-3,724,001	-4,871,674	-5,725,635	-6,116,789	-6,757,312
Emissions reduced by renewable energy PPAs ³⁷	●	tCO ₂ e	-2,792,058	-3,660,450	-4,322,682	-4,953,680	-4,753,107
Emissions compensated for by carbon credits	●	tCO ₂ e	-931,943	-1,211,224	-1,402,953	-1,163,109	-2,004,205
Total operational GHG emissions (after emissions reductions and compensations) ³⁸	●	tCO ₂ e	0	0	0	0	0
Carbon intensity³⁹							
Carbon intensity per unit of revenue	●	tCO ₂ e/ million US\$	5.19	5.47	5.32	5.21	7.25
Carbon intensity per FTE employee	●	tCO ₂ e/FTE	7.60	8.36	7.96	7.49	12.87
Carbon intensity per megawatt-hour of energy consumed	●	tCO ₂ e/MWh	0.0717	0.0707	0.0675	0.0615	0.1006