

Environmental data for 2018–2023

We are continuously working to enhance our reporting practices and provide a consolidated view of select performance indicators organized around the pillars of our Corporate Social Responsibility strategy, including the environment.

Environment

Description	Unit	2018	2019	2020	2021	2022	2023
Climate^{1,2}							
Scope 1 [†]	Metric tons CO ₂ e (MTCO ₂ e)	300,724	304,778	306,062	327,183	329,290	331,463
Stationary (fossil fuels) [†]	MTCO ₂ e	221,712	226,264	228,425	248,173	248,640	261,689
Mobile (fossil fuels) [†]	MTCO ₂ e	55,220	54,863	53,879	53,520	57,057	46,252
Refrigerants [†]	MTCO ₂ e	23,791	23,651	23,758	25,490	23,592	23,522
Scope 2 – market [‡]	MTCO ₂ e	489,810	449,663	369,296	313,561	267,752	229,110
Scope 2 – location [‡]	MTCO ₂ e	473,134	455,793	437,172	452,423	433,010	427,904
Scope 1 and 2 market [‡]	MTCO ₂ e	790,534	754,440	675,358	640,744	599,088	560,573
Scope 1 and 2 reduction since 2018 (Target: 50.4% by 2030)	%	—	4.6	14.6	18.9	24.5	29.1
Suppliers with science-based target, by spend [§] (Target: 90% by 2030)	%	—	—	—	6	13	18
Suppliers committed to setting science-based target, by spend [§]	%	—	—	—	9	10	12
Scope 3 [†]	MTCO ₂ e	—	—	—	13,380,907	13,052,392	11,320,351
Purchased goods and services (category 1) [†]	MTCO ₂ e	—	—	—	8,832,506	8,557,433	8,017,278
Capital goods (category 2) [†]	MTCO ₂ e	—	—	—	527,605	442,694	284,151
Upstream/downstream energy and water-related activities (category 3) [†]	MTCO ₂ e	—	—	—	134,040	126,259	113,854
Upstream transportation and distribution (category 4) [†]	MTCO ₂ e	—	—	—	1,379,680	1,421,784	1,105,642
Waste generated in operations (category 5) [†]	MTCO ₂ e	—	—	—	54,367	51,605	40,603
Business travel (category 6) ^{†4}	MTCO ₂ e	—	—	—	52,198	124,934	132,089
Employee commuting and work from home (category 7) [†]	MTCO ₂ e	—	—	—	241,959	225,031	228,902
Upstream leased assets (category 8)	MTCO ₂ e	—	—	—	0	0	0

Description	Unit	2018	2019	2020	2021	2022	2023
Climate^{1,2} cont.							
Downstream transportation and distribution (category 9) ⁵	MTCO ₂ e		—	—	-	-	-
Processing of sold products (category 10)	MTCO ₂ e		—	—	Not relevant		
Use of sold products (category 11) [†]	MTCO ₂ e		—	—	2,075,313	2,018,557	1,330,011
End of life treatment, sold products (category 12) [†]	MTCO ₂ e		—	—	83,240	84,097	67,821
Downstream leased assets (category 13)	MTCO ₂ e		—	—	Not relevant		
Franchises (category 14)	MTCO ₂ e		—	—	Not relevant		
Investments (category 15)	MTCO ₂ e		—	—	Not relevant		
Value chain emissions (scope 1 and 2, market, and 3)	MTCO ₂ e		—	—	14,021,651	13,649,433	11,880,924
Scope 1 GHG intensity [†]	MTCO ₂ e / M \$USD revenue			11.9	9.5	8.3	7.3
Scope 2 GHG intensity [†]	MTCO ₂ e / M \$USD revenue			17.6	11.5	8.0	6.0
Scope 1 and 2 GHG intensity	MTCO ₂ e / M \$USD revenue			29.5	21.0	16.3	13.3
Scope 3 GHG intensity	MTCO ₂ e / M \$USD revenue			—	—	341	291
Value chain GHG intensity	MTCO ₂ e / M \$USD revenue			—	—	358	304
Customer shared GHG allocation (scope 1 and 2 and upstream 3) ⁵	MTCO ₂ e / M \$USD revenue		—	—	303	257	245
Carbon avoidance offsets outside value chain ^{†7}	MTCO ₂ e		—	—	382	1,019	0
Energy^{1,2}							
Total energy use[†]	MWh		2,630,627	2,630,175	2,787,633	2,844,093	2,822,734
Renewable energy	MWh		39,470	171,293	358,459	458,243	537,173
Renewable electricity [†]	MWh		39,470	171,293	358,459	458,243	537,173
Onsite generation [†]	MWh		10,920	11,708	10,814	9,545	11,140
Contract (VPPA, green tariff, supply) [†]	MWh		24,919	137,147	225,277	222,337	427,915
Energy attribute certifications ^{†8}	MWh		3,632	22,438	122,368	226,362	98,117
Non-renewable energy [†]	MWh		2,591,156	2,458,882	2,428,886	2,385,538	2,285,561
Fossil fuels (gas, oil, diesel) [†]	MWh		1,371,669	1,389,878	1,473,291	1,499,039	1,484,280
Municipal steam and hot water [†]	MWh		58,969	60,479	59,218	58,471	36,568
Non-renewable electricity [†]	MWh		1,160,519	1,008,526	896,378	828,028	764,714
Energy intensity	MWh / M \$USD revenue		103	82	71	63	66
Renewable electricity	%		3	15	29	36	41
Sites powered by 100% renewable electricity	#		3	37	70	152	150
Renewable energy	%		2	7	13	16	19
Fossil fuel free facilities ⁹	#		0	2	1	20	16
Onsite renewable generation [†]	MWh		13,970	14,759	13,985	12,924	14,863
Onsite renewable generation capacity	MW		6.0	7.0	7.3	7.7	9.3
Sites with onsite renewable generation or energy storage	#		5	6	8	9	13

Description	Unit	2018	2019	2020	2021	2022	2023
Water							
Water withdrawal excluding non-contact cooling water [†]	Million m ³		—	—	6.8	7.4	7.5
Water withdrawal including non-contact cooling water	Million m ³		—	—	19.4	20.1	19.0
Ground water [†]	Million m ³		—	—	0.8	1.2	1.1
Fresh surface water [†]	Million m ³		—	—	12.7	12.7	11.6
Non-contact cooling water	Million m ³		—	—	12.7	12.7	11.6
Municipal (potable) [†]	Million m ³		—	—	5.9	5.9	6.1
Water recycling and reuse [†]	Million m ³		—	—	0.002	0.022	0.02
Water consumption [†]	Million m ³		—	—	1.3	2.2	2.2
Consumption in water-scarce areas ^{†10}	Million m ³		—	—	0.08	0.13	0.1
Water discharges [†]	Million m ³		—	—	18.1	17.9	16.8
Groundwater injection [†]	Million m ³		—	—	0.1	0.1	0.1
Surface water [†]	Million m ³		—	—	12.8	13.5	12.2
Non-contact cooling water [†]	Million m ³		—	—	12.7	12.7	11.6
Municipal [†]	Million m ³		—	—	5.3	4.3	4.6
Water consumption intensity	m ³ / M \$USD revenue		—	—	33.4	49.2	51

Description	Unit	2018	2019	2020	2021	2022	2023
Waste							
Non-hazardous waste	Metric tons		—	—	92,099	96,480	84,603
Reused	Metric tons		—	—	10,904	10,805	10,434
Compost	Metric tons		—	—	1,374	1,011	978
Recycle	Metric tons		—	—	37,991	38,262	36,127
Offsite wastewater treatment	Metric tons		—	—	2,807	2,252	728
Non-thermal energy recovery [†]	Metric tons		—	—	305	305	289
Thermal waste to energy [†]	Metric tons		—	—	15,715	13,337	10,303
Incineration	Metric tons		—	—	3,096	3,109	3,497
Landfill	Metric tons		—	—	19,907	27,398	22,216
Non-hazardous waste intensity	Metric tons / M \$USD revenue		—	—	2.3	2.1	2.0
Reuse/recycling/compost %	%		—	—	55	52	56
Waste to landfill diversion	%		—	—	78	72	74
Certified zero waste sites ¹¹	#		—	—	7	14	20
Hazardous and biohazardous waste	Metric tons		—	—	47,411	41,102	37,442
Reuse	Metric tons		—	—	2,648	3,445	3,957
Recycle	Metric tons		—	—	1.06	1.05	166
Offsite wastewater treatment	Metric tons		—	—	6,643	6,645	2,537
Waste to energy [†]	Metric tons		—	—	20,642	20,522	20,430
Incineration	Metric tons		—	—	16,118	9,240	8,975
Landfill	Metric tons		—	—	1,359	1,249	1,377

‡ This 2023 indicator has gone through a [limited assurance](#) process by Bureau Veritas.

1. Environmental data in this table covers all worldwide operations, including manufacturing facilities, warehouses, offices, laboratories, commercial fleets and consolidated subsidiaries. The scope of environment data presented in this report includes operations that we control. Where data is not available, estimations based on regional energy intensity factors or other existing data is used. Historical data may be subject to revision due to data source restatements and updates to methodology. There may be differences in baseline and subsequent reporting year values due to changes in the business that require baseline adjustments conducted in accordance with the Greenhouse Gas Protocol. Environmental data is baseline adjusted using reporting boundaries per the World Resources Institute (WRI) Greenhouse Gas Protocol Corporate Reporting Standard (the revenue component of intensity values is not baseline adjusted).
2. Data presented herein includes restated environmental data for the 2021 and 2022 reporting year(s) to reflect the baseline adjustment related to the acquisition of The Binding Site on October 31, 2022, operational data collection improvements and emission factor updates.
3. Addressable spend includes all spend in Purchased Goods and Services, Scope 3 Category 1 and Capital Goods, Scope 3 Category 2. The boundary is companies reporting a science-based target via the Science Based Targets initiative (SBTi), CDP, EcoVadis, or their corporate website as of December 31, 2023.
4. 2023 values includes a reduction of 237 MTCO₂e related to consumption of sustainability aviation fuel for a portion of air travel.
5. Spend-based analysis is currently unable to separate upstream and downstream transportation and distribution. Figures presented in upstream transportation and distribution represent both upstream and downstream emissions.
6. Value includes Scope 1, 2 and Scope 3 (categories 1, 2, 3, 4, 5, 6, 7, and 8). Emissions from other categories are already captured in the customer's Scope 1, 2, and downstream Scope 3 and therefore not included.
7. This indicator does not include 88 and 130 MTCO₂e of carbon removal credits that were purchased and retired in 2021 and 2022, respectively, using technologies such as biochar. In accordance with the SBTi Net-Zero Standard, carbon offsets and credits are not considered in the emission values presented in this report.
8. Environmental attribute certificates retired include unbundled Green-e certified Renewable Energy Certifications (REC), EECS AIB Guarantees of Origin, and International RECs to match electricity usage in the US/Canada, Europe, Brazil, China, India, Mexico, and South Africa.
9. A fossil fuel-free facility is defined as having greater than 99% of total energy consumed from renewable energy sources.
10. Water scarce areas were identified using the WWF Water Risk Filter tool.
11. Zero waste is defined as the diversion of less than 10% of waste to landfill, incineration, or waste-to-energy facilities, excluding regulated wastes.

 Learn more at thermofisher.com/csr

For Research Use Only. Not for use in diagnostic procedures. © 2024 Thermo Fisher Scientific Inc. All rights reserved. All trademarks are the property of Thermo Fisher Scientific and its subsidiaries unless otherwise specified.