Environmental Data Index

Meta

2025 Sustainability Report

Reporting on fiscal year 2024

As part of our commitment to disclose information about our environmental footprint, the following sections are a compilation of environmental metrics across greenhouse gas (GHG) emissions, energy, and water. This data reflects the 2024 fiscal year (January 1, 2024 to December 31, 2024) unless otherwise noted.

This year's report was prepared in reference to the Global Reporting Initiative (GRI) standards, the United Nations Global Compact, and the Sustainability Accounting Standards Board (SASB) Internet and Media Services Industry Standards. Read our 2025 Sustainability Report↗.

Meta obtained limited assurance conducted by Ernst & Young LLP for select environmental metrics. For more information, refer to the Independent Accountants' Review Report↗.

Environmental Footprint[1,2,3,4,5]

1.1 GHG Emissions

Total GHG Emissions

Emissions with Contractual Instruments Applied (in metric tons CO_2e)

	2020	2021	2022	2023	2024
Net total	4,984,000	5,740,244	8,453,471	7,443,182	8,150,595
Carbon removal (carbon credits applied)	145,000	90,000	80,000	53,050	50,000
Total	5,129,000	5,830,244	8,533,471	7,496,232	8,200,595
Scope 1	29,000	55,173	66,934	48,952	47,468
Scope 2	9,000	2,487	273	1,658	1,358
Scope 3	5,091,000	5,772,583	8,466,264	7,445,621	8,151,769
Location-Based Emissions (in metric tons CO_2e)					
Total	8,559,000	10,163,476	14,007,222	14,067,104	15,627,509
Biogenic Emissions* (in metric tons CO_2e)					
Total	-	-	-	160	3,154

* This includes emissions calculated outside of scope per Greenhouse Gas Protocol for both operational (Scope 1 and 2) and non-operational (Scope 3) emissions sources.

GHG Intensity

Market-Based Scope 1 and 2 Emissions (in metric tons CO_2e/unit of key performance indicators)

	2020	2021	2022	2023	2024
GHG intensity per daily active person	0.00002	0.00002	0.00002	0.000016	0.000015
GHG intensity per million USD of revenue	-	0.49	0.58	0.43	0.30
GHG intensity per MWh	-	0.0061	0.0058	0.0033	0.0027

1.1 GHG Emissions

Operational GHG Emissions

Market-Based Scope 1 and 2 Emissions (in metric tons CO_2e)

	2020	2021	2022	2023	2024
Total operational GHG emissions	38,000	57,661	67,207	50,610	48,826
Data centers total	14,000	25,240	22,163	12,283	15,057
Altoona (IA)	1,000	2,118	920	525	1,396
Clonee (Ireland)	1,000	1,364	264	591	400
DeKalb (IL)	-	0	1,859	37	184
Eagle Mountain (UT)	-	3,250	3,609	251	258
Forest City (NC)	<500	1,401	587	409	334
Fort Worth (TX)	<500	779	625	1,532	1,767
Gallatin (TN)	-	-	138	141	118
Henrico (VA)	<500	4,822	821	609	2,637
Huntsville (AL)	-	261	1,788	693	435
Kansas City (MO)	-	-	-	-	76
Los Lunas (NM)	<500	1,067	1,298	1,404	1,148
Luleå (Sweden)	<500	374	79	95	46
Mesa (AZ)	-	-	-	-	38
New Albany (OH)	2,000	408	2,605	741	584
Odense (Denmark)	<500	2,824	655	258	318
Prineville (OR)	3,000	3,862	4,501	1,231	1,167
Sarpy (NE)	3,000	2,348	1,642	570	1,517
Stanton Springs (GA)	-	300	535	462	445
Leased data center facilities	-	25	72	0	0
Other data center-related facilities	2,000	40	166	2,731	2,186
Offices total	24,000	32,421	45,044	38,328	33,769

1.1 GHG Emissions

Market-Based vs. Location-Based

Scope 2 Emissions (in metric tons CO_2e)

	2020		2021		2022		2023		2024	
	Market-based	Location-based	Market-based	Location-based	Market-based	Location-based	Market-based	Location-based	Market-based	Location-based
Total facilities GHG emissions	9,000	2,718,000	2,487	3,080,194	273	3,921,611	1,658	5,141,350	1,358	5,967,348
Data centers total	2,000	2,650,000	2,487	2,987,964	273	3,821,450	733	5,036,131	135	5,862,614
Altoona (IA)	-	555,000	-	425,377	-	474,826	-	532,158	0	666,434
Clonee (Ireland)	-	159,000	-	187,475	-	178,367	-	302,256	0	312,427
DeKalb (IL)	-	-	-	2,122	-	8,087	-	63,407	0	154,732
Eagle Mountain (UT)	-	-	-	62,962	-	145,985	-	216,510	0	321,585
Forest City (NC)	-	202,000	-	165,026	-	143,754	-	144,050	0	144,104
Fort Worth (TX)	-	399,000	-	378,198	-	355,696	-	361,674	0	372,728
Gallatin (TN)	-	-	-	-	-	2,664	-	49,617	0	147,025
Henrico (VA)	-	69,000	-	146,396	-	204,494	-	228,705	0	255,314
Huntsville (AL)	-	-	-	32,464	-	156,885	-	261,541	0	353,862
Kansas City (MO)	-	-	-	-	-	-	-	-	0	12,993
Los Lunas (NM)	-	266,000	-	276,795	-	347,033	-	392,487	0	385,582
Luleå (Sweden)	-	7,000	-	3,917	-	2,782	-	4,009	0	5,298
Mesa (AZ)	-	-	-	-	-	-	-	-	0	8,317
New Albany (OH)	-	157,000	-	229,785	-	335,561	-	361,857	0	216,600
Odense (Denmark)	-	57,000	2,487	51,171	273	49,198	-	56,451	0	56,596
Prineville (OR)	-	200,000	-	245,996	-	284,462	-	378,007	0	498,192
Sarpy (NE)	-	294,000	-	329,674	-	458,460	-	491,404	0	528,913
Stanton Springs (GA)	-	-	-	84,402	-	258,773	-	394,369	0	453,803
Leased data center facilities	-	223,000	-	272,848	-	323,060	-	678,861	0	933,858
Other data center-related facilities	2,000	62,000	-	93,354	-	91,364	733	118,767	135	34,253
Offices total	7,000	68,000	-	92,230	-	100,160	925	105,220	1,223	104,734

1.1 GHG Emissions

Value Chain GHG Emissions*					
Scope 3 Emissions (in metric tons CO_2e)					
	2020	**2021**	**2022**	**2023**	**2024**
Total	5,091,000	5,772,583	8,466,264	7,445,621	8,151,769
Category 1: Purchased goods and services	1,846,000	2,956,909	2,545,466	2,045,470	1,920,413
Category 2: Capital goods	2,516,000	2,466,041	5,346,583	4,835,270	5,517,614
Category 3: Fuel and energy-related activities	56,000	10,483	12,658	8,454	8,428
Category 4: Upstream transportation and distribution	49,000	180,183	176,636	124,324	131,141
Category 5: Waste generated in operations	10,000	18,430	18,519	38,468	31,623
Category 6: Business travel	129,000	8,653	251,807	317,841	467,741
Category 7: Employee commuting	61,000	23,163	45,054	54,256	52,299
Category 8: Upstream leased assets	24,000	1,185	3,444	2,249	731
Category 9: Downstream transportation and distribution	10,000	37	16	47	56
Category 11: Use of sold products	390,000	106,232	62,306	16,476	17,521
Category 12: End-of-life treatment of sold products	<500	1,267	3,775	2,765	4,203

* Prior to fiscal year 2024, Scope 3 emissions in this table are calculated using both Greenhouse Gas Protocol and market-based adjustments. In fiscal year 2024, emissions are calculated using a combination of GHG Protocol and Meta's Management's Criteria which includes the application of contractual instruments. Refer to our environmental metrics methodology for more details.

Scope 3 Emissions (in metric tons CO_2e) Greenhouse Gas Protocol-Aligned*	
Category 1: Purchased goods and services	1,976,448
Category 4: Upstream transportation and distribution	132,024
Category 6: Business travel	482,170
Category 7: Employee commuting	70,273
Category 8: Upstream leased assets	24,950
Category 11: Use of sold products	19,575

* For categories where Greenhouse Gas Protocol has been substituted with Meta's Management's Criteria to calculate emissions in the preceding table.

2.1 Electricity

Electricity Consumption

Electricity Consumption by Facility (in MWh)

	2020	2021	2022	2023	2024
Total electricity consumption	7,170,000	9,420,839	11,508,131	15,325,314	18,423,634
Electricity from grid (%)	100%	>99%	>99%	>99%	>99%
Data centers total	6,966,000	9,117,122	11,167,416	14,975,435	18,061,781
Altoona (IA)	980,000	950,705	1,043,606	1,243,306	1,585,392
Clonee (Ireland)	487,000	634,648	668,290	953,837	1,076,961
DeKalb (IL)	-	4,724	16,934	138,965	372,339
Eagle Mountain (UT)	-	229,946	504,049	787,740	1,115,619
Forest City (NC)	595,000	580,842	492,786	507,068	535,555
Fort Worth (TX)	941,000	1,014,447	959,419	1,029,570	1,109,004
Gallatin (TN)	-	0	6,264	116,520	359,730
Henrico (VA)	204,000	515,270	701,003	805,061	948,859
Huntsville (AL)	-	85,286	368,841	614,198	865,803
Kansas City (MO)	-	-	-	-	22,963
Los Lunas (NM)	571,000	717,932	929,488	1,110,100	1,143,067
Luleå (Sweden)	369,000	306,054	267,471	351,931	468,809
Mesa (AZ)	-	-	-	-	24,657
New Albany (OH)	270,000	511,414	702,694	793,063	521,217
Odense (Denmark)	343,000	500,863	517,718	518,005	569,374
Prineville (OR)	686,000	898,409	982,177	1,375,321	1,728,291
Sarpy (NE)	519,000	736,810	1,007,635	1,148,091	1,258,239
Stanton Springs (GA)	-	215,279	636,266	968,565	1,184,380
Leased data center facilities	795,000	964,650	1,105,834	2,187,020	3,069,504
Other data center-related facilities	206,000	249,843	256,939	327,073	102,016
Offices total	204,000	303,717	340,657	349,878	361,853

2.1 Electricity

Electricity Intensity (in MWh/unit of key performance indicators)					
	2020	**2021**	**2022**	**2023**	**2024**
Electricity intensity per daily active person	-	0.0033	0.0039	0.0036	0.0055
Electricity intensity per million USD revenue	-	79.9	98.7	131.42	112.00
Electricity Mix (in % of total electricity used)					
	2020	**2021**	**2022**	**2023**	**2024**
Renewable	100%	100%	100%	100%	100%
Non-renewable	0%	0%	0%	0%	0%

2.2 Total Energy Consumed

Energy Consumption (in GJ)					
	2020	**2021**	**2022**	**2023**	**2024**
Total energy consumption	27,075,000	34,882,163	42,560,221	55,956,522	67,115,737
Direct energy consumption	438,000	853,042	1,138,794	787,114	783,690
Indirect energy consumption	26,638,000	34,029,121	41,421,428	55,169,408	66,332,047
Heating consumption	-	-	-	9,518	15,817
Cooling consumption	-	-	-	13,190	16,174

2.3 Fuels

Fuel Consumption					
Non-Renewable Fuels					
	2020	**2021**	**2022**	**2023**	**2024**
Natural gas (therms)	-	6,153,856	7,539,592	4,818,116	4,719,581
Diesel — distillate fuel oil No. 2 (gal)	-	363,082	1,376,871	1,025,707	703,907
Diesel — distillate fuel oil No. 4 (gal)	-	842,460	724,151	699,427	672,925
Gasoline (gal)	-	52,375	119,955	22,309	47,198
Renewable Fuels					
Hydrotreated vegetable oil (gal)	-	0	0	1,144	10,415
R99 Renewable diesel	-	0	0	0	288,083

2.4 Data Center Operations and Design

Power Usage Effectiveness (PUE)					
	2020	**2021**	**2022**	**2023**	**2024**
PUE (data center energy efficiency)	1.10	1.09	1.08	1.08	1.08
Sustainable Design					
Green Building Standards for Data Centers and Offices (% of sq ft covered by green building standards and/or EnMS)					
	2020	**2021**	**2022**	**2023**	**2024**
Total	-	98%	99%	>99%	>99%
Data centers (LEED Gold or above, or ISO 50001)	-	100%	100%	100%	100%
Offices (LEED Gold or above, or ISO 50001)	-	97%	98%	98%	98%

3.1 Water Withdrawal[6]

Water Withdrawal					
Water Withdrawal by Facility (in megaliters)					
	2020	**2021**	**2022**	**2023**	**2024**
Total water withdrawal	3,726	5,043	4,893	5,274	5,637
Data centers total	3,000	3,418	3,618	3,881	4,145
Altoona (IA)	151	140	199	173	242
Clonee (Ireland)	615	928	839	659	571
DeKalb (IL)	-	0	30	55	105
Eagle Mountain (UT)	-	58	89	87	133
Forest City (NC)	68	64	63	55	16
Fort Worth (TX)	300	254	346	404	311
Gallatin (TN)	-	0	0	3	205
Henrico (VA)	42	80	55	42	92
Huntsville (AL)	-	39	104	152	209
Kansas City (MO)	-	-	-	-	41
Los Lunas (NM)	140	153	161	283	252
Luleå (Sweden)	49	39	25	50	29
Mesa (AZ)	-	-	-	-	57
New Albany (OH)	35	121	87	72	86
Odense (Denmark)	360	373	428	371	292
Prineville (OR)	445	354	240	180	328
Sarpy (NE)	108	106	101	123	142
Stanton Springs (GA)	-	105	77	61	146
Leased data center facilities	645	604	773	1,102	883
Other data center-related facilities	42	45	0	10	3
Offices total	726	1,625	1,275	1,393	1,492

3.1 Water Withdrawal

Water Withdrawal by Source

Water Withdrawal by Source (in megaliters)

	2020	2021	2022	2023	2024
From groundwater	37	33	37	88	12
From third-party water (e.g., municipal water supply)	3,689	5,009	4,856	5,186	5,625

Water Usage Effectiveness (WUE)

	2020	2021	2022	2023	2024
Annual data center WUE	0.30	0.26	0.20	0.18	0.19

Water Withdrawal Intensity (in liters/unit of key performance indicators)

	2020	2021	2022	2023	2024
Water withdrawal per daily active person	-	0.001788	0.001653	0.001534	0.001683
Water withdrawal per million USD revenue	-	42.8	42.0	45.0	34.3

Water Withdrawal from Areas with Water Stress (in megaliters)

	2020	2021	2022	2023	2024
Total from areas with high or extremely high baseline water stress	-	1,390	1,130	1,360	1,704
From groundwater	-	-	-	88	12
From third-party water (e.g., municipal water supply)	-	-	-	1,272	1,693
From areas without water stress	-	3,652	3,763	3,914	3,933

Recycled Water (in megaliters)

	2020	2021	2022	2023	2024
Total water recycled	643	580	266	720	515

3.2 Water Consumption

Water Consumption (in megaliters)					
	2020	**2021**	**2022**	**2023**	**2024**
Total water consumption	2,202	2,569	2,638	3,078	3,123
Data centers total	2,197	162	2,511	2,938	2,974
Offices total	73	2,406	128	140	149
Water Consumption from Areas with Water Stress (in megaliters)					
	2020	**2021**	**2022**	**2023**	**2024**
From areas with high or extremely high baseline water stress	-	162	443	504	748
From areas without water stress	-	2,406	2,195	2,573	2375

3.3 Water Discharge

Water Discharge by Source (in megaliters)					
	2020	**2021**	**2022**	**2023**	**2024**
Total water discharge	1,524	2,473	2,254	2,196	2,514
To third-party water (e.g. municipal sewers)	1,524	2,473	2,254	2,196	2,514
Water Discharge to Areas with Water Stress (in megaliters)					
	2020	**2021**	**2022**	**2023**	**2024**
Total water discharge to high or extremely high baseline water stress	-	864	687	856	956
To third-party water (e.g. municipal sewers)	-	-	-	856	956

3.4 Water Stewardship

Water Restoration (in megaliters)					
	2020	**2021**	**2022**	**2023**	**2024**
Volumetric water restoration benefits	2,250	2,336	2,352	5,889	6,473
Water use Embedded in Purchased Electricity (in megaliters)					
	2020	**2021**	**2022**	**2023**	**2024**
Total embedded water consumption in purchased electricity	-	31,924	41,172	55,475	72,207
Total embedded water consumption in purchased electricity for our contracted renewable energy	-	3,313	2,895	3,810	5,075
Avoided water consumption	-	28,611	38,278	51,664	67,132

Footnotes

1. The environmental metrics represented in this report are rounded to the nearest whole digit on a line item basis. Due to rounding applied to all individual line items, the total values may not directly match the summation of the individual line items. Prior to 2021, values were rounded and totals were calculated before rounding throughout this report.
2. "Net" total GHG emissions reflects total emissions with contractual instruments applied and adjusted for application of carbon credits.
3. Our methodology for calculating environmental metrics can be found on page N.
4. "Other data center-related facilities" includes facilities where Meta used less than 100,000 MWh of electricity in the reporting year, such as warehouses, network infrastructure, or colocation facilities. Owned, online data centers are always reported by site, even if they were below this threshold.
5. We regularly apply updates to our annual inventories. For each year below, changes are reflected in the corresponding year and later inventories:
    a. 2021:
        i. Data from LCAs for our hardware and sold products were used to calculate our Scope 3 emissions.
        ii. 2021 Category 1, 2, 8 and 11 emissions were recalculated with higher quality data inputs to improve accuracy.
        iii. All Scope 3 Categories were broken out individually to improve transparency and eliminate the previously reported "Other Applicable Categories."
        iv. Emissions associated with third-party construction-related energy usage were recategorized into Category 1 instead of Category 3 to better align with the GHG Protocol Scope 3 Category Boundaries.
        v. Emissions associated with overhead electricity load at leased data centers was recategorized into Category 8 Instead of Category 3 to better align with the GHG Protocol Scope 3 Category Boundaries. These emissions were further recategorized in the 2023 inventory into Scope 2 (see footnote 5.c).
        vi. 2021 Category 6 emissions were recalculated to incorporate more accurate and transparent methodologies for applying sustainable aviation fuel emissions reductions.
        vii. 2021 Total Fuel and Energy Consumption were recalculated to eliminate third-party construction-related fuel use outside of our Operational Control.
    b. 2022:
        i. A new Category 5 estimation methodology was developed to improve completeness across all operations.
        ii. Employee commuting now includes emissions calculations on a well-to-tank basis.
        iii. A new Category 1 and Category 2 methodology was developed to improve the completeness, accuracy and reliability of the underlying activity and financial data.
    c. 2023:
        i. A new Category 6 estimation methodology was developed to improve completeness across all operations.
        ii. Usage from Ray-Ban Meta smart glasses were incorporated into Category 11 as a newly sold-by-Meta product.
        iii. Emissions associated with overhead electricity load at our leased data centers were recategorized into Scope 2 instead of Scope 3 to better align with the GHG Protocol Operational Control Approach.
    d. 2024:
        i. Meta's Management's Criteria has been introduced to account for contractual instruments applied to select Scope 3 categories.
        ii. Scope 3 emissions calculated from energy activity data includes emissions calculations on a well-to-tank (WTT) basis and from transmission and distribution losses (electricity) for data center construction energy (Category 1) and upstream leased assets (Category 8).
        iii. The percentage of emissions calculated from LCAs or Supplier Provided data was increased in Category 1 and 2.
        iv. Category 4 includes sustainably maritime fuel certificates (SMFc) applied as a contractual instrument in accordance with Meta's Management's Criteria.
6. Not included in our 2024 water withdrawal numbers are an additional 1,019 mega liters of water withdrawn for the construction of Meta data centers.

Our Environmental Metrics Methodology

At Meta, our sustainability work helps us to operate efficiently and responsibly in our mission to build community and bring the world closer together. As a global company, we recognize the tech industry's environmental impact and role to play in addressing climate change. We embrace the responsibility to understand the full scope of our footprint and be transparent and accountable in our mission to reduce our emissions.

Identifying the source of our emissions on an annual basis enables us to prioritize emissions reduction where we can make the most meaningful progress on our path to net zero emissions across our value chain in 2030. Similarly, minimizing our water use, being transparent with our water data, and restoring water in the same watersheds where our data centers are located are vital to reach our commitment to restore more water than we use in 2030.

Our Greenhouse Gas Emissions

Our Greenhouse Gas (GHG) footprint includes the emissions associated with running our business and data centers, as well as the indirect emissions upstream and downstream of our global operations. These emissions correspond to Scope 1, Scope 2, and Scope 3 emissions as defined by World Resources Institute's (WRI) GHG Protocol (GHGP)↗. We use the operational control approach when calculating our GHG footprint, in which we account for 100 percent of the GHG emissions over which we have operational control.

Operational Emissions

Scope 1 and 2 emissions are considered our operational emissions. **Scope 1** emissions come from our direct operations, such as combustion of natural gas to heat our offices and the fuel burned in our employee shuttles. **Scope 2** includes indirect emissions from purchased energy, such as the electricity powering our data centers. We consider purchased electricity and fuel consumed for construction outside of our operational control and therefore report these in scope 3.

Scope 1 emissions Direct emissions from our data centers, offices and transportation fleet	• Stationary combustion (e.g., natural gas consumed at our Menlo Park campus for heating) • Mobile combustion (e.g., diesel emissions from our intercampus shuttles) • Fugitive emissions (e.g., refrigerant losses)
Scope 2 emissions Indirect emissions from purchased energy for our data centers and offices	• Purchased electricity • District heating and cooling

Full Value Chain Emissions†

Scope 3 emissions come from sources within our full value chain beyond our operations and comprise the largest component of our footprint. Scope 3 includes:

1. Upstream emissions, such as the emissions from manufacturing our data center servers or emissions from employee commuting; and
2. Downstream emissions, such as the emissions associated with consumers using our Meta Quest VR headset devices.

Scope 3 emissions Our value chain emissions upstream and downstream of our operations	**Upstream:** • Purchased goods and services (e.g., upstream emissions from purchased office supplies) • Capital goods (e.g., server hardware) • Fuel and energy-related activities • Upstream transportation and distribution (e.g., emissions associated with the transportation of our augmented and virtual reality related consumer hardware) • Waste generated from our operations • Business travel • Employee commuting (including telecommuting) • Upstream leased assets (Including leased data center overhead electricity use)
	Downstream: • Downstream transportation and distribution • Direct use of our augmented and virtual reality related consumer hardware • End-of-life treatment of our augmented and virtual reality related consumer hardware

How we Calculate our GHG Emissions

We are aligning our emissions reduction targets with the Science Based Targets initiative↗ and take a scientific, standardized approach to calculating our GHG emissions in accordance with the GHG Protocol (GHGP)↗ and Meta's Management's Criteria described below. Furthermore, our GHG emissions data undergoes limited assurance conducted by a third party. This is completed annually to provide additional confidence to our publicly reported metrics.

We quantify our GHG emissions via activity data, Life Cycle Assessments (LCAs) and financial data. We prioritize calculating our emissions through activity data, which directly measures an activity that results in GHG emissions such as kilowatt hours (kWh) of electricity. Due to the complex nature of our business and value chain, we use other methods to help calculate our emissions when activity data is not available.

We measure our emissions by metric tons of carbon dioxide equivalent, or CO_2e, units. CO_2e is used to standardize the emissions from different greenhouse gases based on their global warming potentials.

†Category 10: Processing of sold products and Category 14: Franchises are determined to be not applicable. Category 13: Downstream leased assets and Category 15: Investments are determined to not be relevant.

Activity Data

For activity data, we take the quantity of a specific measured activity and multiply it by an associated emissions factor to calculate the total emissions from that activity. For example, the kWh of electricity consumed at a Meta site is multiplied by the appropriate country-specific or regional-specific, publicly available emissions factor to calculate the total emissions from that site's electricity use. We use activity data to calculate:

- Scope 1 and Scope 2 emissions
- Fuel and energy-related activities
- Waste generated in operations
- Upstream Transportation and Distribution where supplier specific data is available
- Business travel (including radiative forcing)
- Employee commuting
- Direct use of our augmented and virtual reality related consumer hardware

Where activity data is incomplete or unavailable for an operation that results in GHG emissions, existing activity data or publicly available intensity metrics (energy/square foot) are used as a proxy to estimate these emissions. This ensures we are reporting a complete GHG inventory across all of our operations. For example, the weight of waste at several Meta sites is used as a proxy to estimate waste at other sites in the same region that do not have final waste weight data.

Life Cycle Assessments

To understand cradle-to-gate emissions and/or upstream emissions that are released before certain assets are used (e.g., the emissions released from the production of concrete before it is poured), we conduct third-party LCA studies or utilize LCA tools to measure our impact. This is applicable in our most recent inventory for the following emissions:

- Upstream emissions associated with the materials used in the construction of our data centers
- Upstream emissions of materials in office renovations and new construction
- Cradle-to-gate emissions of our augmented and virtual reality related consumer hardware, such as our Meta Quest VR headset devices
- Cradle-to-gate emissions in key data center hardware components, such as hard drives
- Cradle-to-gate emissions in key network components, such as fiber optic cables
- Cradle-to-gate emissions in electronics such as laptops and cell phones
- End-of-life treatment of our augmented and virtual reality related consumer hardware

Supplier-Provided Emissions Data

We collect a portion of our upstream emissions data from key suppliers. Where suppliers are able to provide Meta-allocated upstream emissions, we develop a spend-based emissions factor (e.g., kg CO_2e/Meta-specific spend) for that supplier for the emissions and spend within the same time period. We apply that factor to the total spend with that supplier in the reporting period. For suppliers that only provide total, company-wide upstream emissions, we develop a spend-based emissions factor (e.g., kg CO_2e/supplier revenue) for that supplier for the emissions and revenue within the same time period. We apply that factor to the total spend with that supplier in the reporting period.

Financial

Our Environmentally Extended Input Output (EEIO) method utilizes financial spend data and applies industry-specific emission factors (e.g., kg CO_2e per dollar spent on electronic manufacturing) published by the US Environmental Protection Agency (EPA) ↗ to calculate "cradle-to-gate" emissions. We apply the EEIO method to the following:

- Purchased goods and services and Capital goods not calculated with cradle-to-gate LCAs or Supplier-Provided data
- Upstream transportation and distribution where supplier specific data is unavailable
- Upstream leased assets

Meta's Management's Criteria

To measure and report emissions mitigation activities, we provide criteria for select Scope 3 categories using an approach (which we refer to as "Meta's Management's Criteria") for adjusting our GHG inventory as summarized below. These methods and the boundary where they are applied are reviewed on an annual basis and any updates are reflected in the table for the respective reporting year.

Scope 3 Category	Meta's Management's Criteria Metric for Adjustment
Category 1 Purchased goods and services	We apply contractual instruments (energy attribute certificates (EACs)) to the MWh purchased electricity consumed during data center construction.
Category 4 Upstream transportation and distribution	We apply contractual instruments (sustainable maritime fuel certificates (SMFc) [tCO_2e]) to supplier-provided ocean freight emissions [tCO_2e]. The SMFc are required to include details about origin and chain-of-custody, exclusivity and third-party certification. SMFc applied by Meta are certified by various independent third parties and meet the requirements of an internationally recognized sustainability certification.
Category 6 Business travel	We apply purchased Sustainable Aviation Fuel certificates (SAFc) to reduce the emissions (MT CO_2e) from air travel. The SAFc are certified prior to receipt by Meta and required to include details about origin and chain-of custody, exclusivity and third-party certification. SAFc applied by Meta are certified by various independent third parties to meet the requirements of an internationally recognized sustainability certification.
Category 7 Employee commuting	We apply contractual instruments (EACs) to the electricity (MWh) attributed to remote employee work from home.
Category 8 Upstream leased assets	We apply contractual instruments (EACs) to the electricity (MWh) consumed by third-party energy use associated with our upstream leased assets.
Category 11 Use of sold products	We apply contractual instruments (EACs) to a portion of use-phase electricity (MWh) during the reporting year only for products sold during the reporting year. For countries where residual emission factors are available (European AIB countries) the residual emission factors are used to calculate emissions. Otherwise, location-based emission factors are used.

A core focus of our renewable energy program is adding new renewable energy projects to the electricity grids that support our data centers to drive the transition to renewable energy in our communities. In alignment with these principles, we adhere to the following EAC market boundaries in accordance with Meta's Management's Criteria:

- EACs from same grid region
- EACs from same same market (in accordance with GHGP Scope 2 Guidance)
- EACs from same Geographic Region: Americas (AMER); Europe, Middle East and Africa (EMEA); Asia Pacific (APAC)

Renewable Energy

We have publicly committed to matching 100% of our electricity use with clean and renewable energy including wind, solar, and hydropower. We procure and retire one EAC for every MWh of electricity used to power our global operations. We apply the same EAC market boundary hierarchy for EACs as defined by Meta's Management's Criteria above.

Improving our GHG Methodology

As we work to decarbonize our value chain over the next decade, the data and methodology that drives our climate work will evolve and improve each year. We have disclosed our Scope 1 and 2 emissions for the last decade. We began reporting on some Scope 3 categories in 2015 and have reported on every relevant category defined by the GHG Protocol since 2019. As techniques to calculate our emissions improve, we will apply those methods to previous years to refine our GHG footprint. For example, in 2020 we used the EPA's updated EEIO emission factors for our Scope 3 calculations and updated our 2019 data accordingly.

Going forward, we will focus on increasing accuracy and granularity of our data. For example, we recalculated our 2020 data based on updated LCA data for key data center hardware and our augmented and virtual reality related consumer hardware. We will use activity data for more emissions categories as methods to do so become available. We will continue reporting and updating our emissions boundaries as our business grows and we continue on our path to net zero emissions.

PUE/WUE

Each year, we calculate the Power Usage Effectiveness (PUE) and Water Usage Effectiveness (WUE) of our data centers. PUE measures how efficiently our data centers consume the energy to operate our servers and network infrastructure. It is calculated by dividing the energy consumed at the data center by IT electricity load. The closer our annual PUE is to "1", the more efficiently our data centers utilize electricity.

Annual WUE is calculated by dividing our water withdrawal, in liters, by IT electricity load, in kWh. WUE values closer to "0" equal more efficient consumption of water to cool our IT-related infrastructure.

These metrics are calculated based on best available data, including internal meters, design estimates and utility bills where applicable.

Our Water Withdrawal

The water that we use in our offices and at our data centers are withdrawn from our local water utilities or local aquifers. We report our water withdrawals based on data from our local water utilities or meter data, where available. Where water activity data is incomplete or unavailable for an operation, existing activity data or publicly available intensity metrics (gallons/square foot) are used as a proxy to estimate water withdrawal and consumption. We also report our water withdrawal during construction separately, based on reported data from our construction partners.

Our Water Consumption

For our data centers, we determine our water consumption via two methods:

1. Calculating the difference between water withdrawal and wastewater discharge
2. Calculating consumption based on cycles of concentration from our cooling systems

For our offices, we estimate our water consumption based on industry averages. All of our wastewater is discharged to local wastewater facilities.

Water Risk

We use water stress metrics in the World Resources Institute's Aqueduct tool↗ to conduct initial assessments of our water risks. When appropriate, we adjust the level of water risk based on additional local knowledge. For more information, refer to Our Approach to Water Restoration↗.

Meta

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