2024 Environmental Data Tables



The data behind our sustainability efforts.

The following tables compare our year-to-year environmental performance across key data points. They align with and supplement our annual sustainability reports.

Our company.

Crown Castle works in every major US market to build, operate and maintain the communications infrastructure that supports the essential connections people, communities and businesses rely on every day. We own, operate and lease a portfolio of over 40,000 towers, approximately 105,000 small cells on air or under contract and approximately 90,000 route miles of fiber throughout the US.

We were founded in 1994 and today operate as a real estate investment trust (REIT) that owns, operates and leases space on our shared infrastructure through contracts with our customers. Our business model not only makes economic sense, but also is a more sustainable means of meeting today's growing connectivity needs. It's a tangible representation of our long-standing sustainability commitment.

We are headquartered in Houston, TX, with several additional office locations in the communities we serve throughout the US.

Driving toward carbon neutrality.

Our shared infrastructure model is inherently sustainable, as it allows us to build once and serve multiple customers with the same assets—reducing the use of natural resources. Building on that strong foundation, we continue to invest in energy reduction initiatives, source renewable energy and, to a lesser extent, utilize high-quality carbon offsets—which we believe puts us on track to reach our goal of being carbon neutral in Scope 1 and 2 emissions for 2025.

For 2024, we built upon the foundation of our first comprehensive Scope 3 emissions inventory, continuing to report on the categories that are relevant to our business. This analysis has confirmed the most significant drivers of our value chain emissions and highlighted areas where we may be able to impact future reductions.

Greenhouse Gas (GHG) Emissions^{1,2}

	2020	2021	2022	2023	2024		
Scope 1 & 2 GHG Emissions (MTCO₂e)							
Scope 1	13,979	13,052	13,328	14,332	11,374		
Scope 2 ³							
Market-based (with renewables)	-	_	18,609	4,626	4,012		
Location-based	63,821	57,787	60,329	55,271	52,114		
Total Scope 1 + Scope 2 (market-based)	-	-	31,937	18,958	15,386		
Total Scope 1 + Scope 2 (location-based)	77,800	70,839	73,657	69,603	63,488		

	Description	2023	2024			
Scope 3 GHG Emissions (MTCO₂e)						
Scope 3 ⁴						
Category 1: Purchased goods and services ⁵	Emissions from the spend supporting our ongoing operations	117,318	74,686			
Category 2: Capital goods⁵	Emissions from construction-related spend, largely associated with fiber installation	357,139	192,820			

	Description	2023	2024			
Scope 3 GHG Emissions (MTCO₂e) cont'd						
Category 3: Fuel- and energy- related activities ⁶	Emissions associated with activities required to extract, process and transport fuels or energy to Crown Castle	9,622	8,359			
Category 4: Upstream transportation and distribution ⁷	Emissions associated with third-party transportation and distribution of our materials	651	1,379			
Category 5: Waste generated in operations ⁸	Emissions from third-party disposal and treatment of waste from our operations	268	226			
Category 6: Business travel ⁹	Emissions associated with employees traveling for business	2,832	2,085			
Category 7: Employee commuting ¹⁰	Emissions related to employees commuting to and from work in non-company-owned vehicles	6,428	2,873			
Category 8: Upstream leased assets ¹¹	Indirect emissions from operation of assets leased by Crown Castle that are not already included in Scope 1 and 2	4,584	4,768			
Category 13: Downstream leased assets ¹²	Emissions from our customers' energy use on our infrastructure assets, primarily related to electricity use for telecommunications equipment and HVAC units at tower sites	1,116,621	994,816			
Total Scope 3		1,615,463	1,282,012			

Fuel Consumption and Refrigerants 13,14

	2020	2021	2022	2023	2024
Natural Gas (MMBtu)					
Offices and Warehouses	34,612	38,052	36,284	37,303	22,337
Generators	835	1,473	1,148	794	699
Total Natural Gas	35,447	39,525	37,432	38,097	23,036
Diesel, Gasoline and Propane (MM	Btu)				
Fleet ¹⁵	132,050	116,729	130,444	134,374	111,503
Generators	20,299	20,909	22,299	26,928	25,545
Total Diesel, Gasoline and Propane	152,349	137,638	152,743	161,302	137,048
Total Fuel Consumption (gigajoules)	198,126	186,906	200,635	210,367	168,898
Refrigerants (kg) ¹⁶					
Towers	-	-	_	22	15
Offices and Warehouses	_	_	_	344	112
Fleet	_	_	_	89	94
Total Refrigerants	-	-	-	455	221

Consolidated Electricity Use

	2020	2021	2022	2023	2024
Electricity (kWh)					
Towers ¹⁷	71,753,219	72,485,536	72,518,291	69,019,613	55,862,384
Small Cells and Fiber ¹⁸	67,877,983	72,145,362	65,133,975	60,759,961	72,448,808
Offices and Warehouses ¹⁹	39,680,535	30,766,147	29,959,989	27,796,939	27,353,449
Total Electricity (kWh)	179,311,737	175,397,045	167,612,255	157,576,513	155,664,641
Total Electricity (gigajoules)	645,522	631,429	603,404	567,275	560,393
Renewable Electricity Contracted (kWh)	-	_	114,193,000	144,193,000	144,193,000
% Renewable Electricity ²⁰	0%	0%	68%	92%	93%
% Grid Electricity	100%	100%	32%	8%	7%

LED Lighting

	2020	2021	2022	2023	2024
Total towers upgraded to LED	6,390	6,950	7,234	7,355	7,589
Total lit towers ²¹	12,059	12,101	12,117	12,137	12,139
Percentage covered ²²	53%	57%	60%	61%	63%

1 Based on an operational control approach, as defined by World Resource Institute (WRI) GHG Protocol and scope guidance. Boundaries include all material operating locations as they operated during the 2024 reporting period. In early 2025, we announced the agreement to sell our Fiber segment, which includes our fiber and small cell assets, with the transaction expected to close in the first half of 2026. When consummated, the transaction will change our energy consumption and emissions profile in future years as we transition to a pure-play tower business. 2 We used emission factors from 40 CFR Part 98 Tables C-1 and C-2 and EPA eGRID factors. Global Warming Potential documented in the Intergovernmental Panel on Climate Change AR5 report was used to calculate CO₂e for methane (CH₄) and nitrous oxide (N₂O). 3 Our 2022-2024 Scope 2 emissions were calculated using WRI GHG Protocol's market-based method and location-based method. Prior years' Scope 2 emissions calculations were reported using WRI GHG Protocol's location-based method. 4 Scope 3 emissions were calculated using the Corporate Value Chain (Scope 3) Accounting and Reporting Standard: Supplement to the GHG Protocol Corporate Accounting and Reporting Standard. Scope 3 emissions quantification is subject to significant inherent measurement uncertainty due to the emissions being outside of Crown Castle's organizational boundaries, where the company has limited control over the availability of primary data. Additionally, uncertainties arise from (1) using GHG emissions factors, which are themselves estimates, in mathematical models for calculating emissions and (2) the models' inability, due to incomplete scientific knowledge and other factors, to precisely measure the relationship between various inputs and the resultant GHG emissions in all scenarios. In early 2025, we announced the sale of our small cells and fiber solutions businesses, with the transaction expected to close in the first half of 2026. This transaction will change our emissions profile in future years as we transition to a towers-focused business model. 5 Scope 3 emissions from Category 1: Purchased goods and services and Category 2: Capital goods were calculated using the spend-based method based on the economic value of goods and services purchased or acquired as recorded in Crown Castle's financial reporting system. Certain spend categories, such as taxes, land rent, and payroll-related spend, are not included in the analysis because Crown Castle determined that there are not significant emissions associated with the spend. Total category spend was multiplied by the orresponding NAICS emissions factors from NAICS v1.3 (2024), adjusted for inflation. 6 Scope 3 emissions from Category 3: Fuel- and energy-related activities were calculated using Scope 1 and 2 energy consumption totals. A standard 4.2% grid loss is applied to all US electricity consumption. Emissions factors were then applied from the UK Department for Environment, Food and Rural Affairs (DEFRA) 2024 WTT ("Well-to-Tank") Fuels for Scope 1 and DEFRA 2021, EPA eGRID 2023 for Scope 2.

7 Scope 3 emissions from Category 4: Upstream Transportation and Distribution were calculated using the spend-based method on the economic value of transportation and distribution services purchased, as recorded in Crown Castle's financial reporting system. Relevant spend was multiplied by the corresponding NAICS emissions factors from CASM adjusted for inflation. 9 May see four purple users to fully service and in efficiency with a phase of the representation of the proposal and in efficiency with a phase of the representation of the proposal and in efficiency with a phase of the representation of the proposal and in efficiency with a phase of the representation of the proposal and in efficiency with a phase of the representation of the proposal part of the proposal and in efficiency with the phase are fully efficiency for the proposal and the proposal part of the proposal and the proposal part of the proposal pa from NAICS v1.3 (2024), adjusted for inflation. **8** Many of our employees work in a hybrid capacity (mix of remote and in-office work), while others are fully remote or fully in-office. As such, our calculation methodology projects waste generated and recycled both in Crown Castle offices (owned and leased) and remotely (e.g., employees working from home or in the field). We used emissions factors from U.S. EPA, 2024, Emission Factors for Greenhouse Gas Inventories, Table 9 (Waste Generated in Operations). **9** Scope 3 emissions from Category 6: Business Travel were calculated using both the activity-based method for travel (air, rail and ground transportation) using distances traveled and emissions factors from the 2024 EPA GHG Emissions database and the spend-based method based on the economic value of employee hotel stays for business purposes as recorded in Crown Castle's financial reporting system, using emissions factors from DEFRA 2024. 10 Scope 3 emissions from Category 7: Employee Commuting were calculated using both a distance-based approach, measuring total employee commuting distance and frequency and applying the 2024 EPA GHG Emissions factors for travel in passenger vehicles, and an estimate-based approach of emissions generated by employees working remotely, using EPA eGRID 2023 emissions factors. 11 Scope 3 emissions from Category 8: Upstream Leased Assets were calculated to estimate the "overhead" power associated with auxiliary equipment within leased Fiber Points of Presence ("PoPs") that support the operation of Crown Castle's owned network devices. The estimate was calculated by using Crown Castle's POP equipment data from its Scope 2 measurement and applying a Power Usage Effectiveness (PUE) factor for smaller data centers, derived from the Uptime Institute Global Data Center Survey 2022. Additionally, EPA eGrid emission factors were used to convert electricity usage into associated greenhouse gas emissions. 12 Scope 3 emissions from Category 13: Downstream Leased Assets were calculated separately for tower, small cell and fiber customers, with emissions across all three asset types calculated by zip code to align with the correct eGRID regions. For tower customers' energy use, an average data method was used that estimated annual consumption per tower for each of our largest customers individually and grouped similar smaller customers together based on their anticipated energy use profiles. These estimates were tower for each of our largest customers individually and grouped similar smaller customers together based on their anticipated energy use profiles. These estimates were validated with a sample of our largest customers. Where applicable, customer renewable energy contributions were factored in to reduce market-based emissions, using publicly reported data. For small cells customers, average equipment electricity use was estimated based on device type and location. For fiber customers, average energy consumption calculations were based on service type and speed. 13 Based on an operational control approach, as defined by WRI GHG Protocol and scope guidance. Reporting boundaries include all material operating locations as they operated during the 2024 reporting period. In early 2025, we announced the sale of our small cells and fiber solutions businesses, with the transaction expected to close in the first half of 2026. This transaction will change our energy consumption and emissions profile in future years as we transition to a towers-focused business model. 14 Where actual consumption data was not available, we used a sampling approach or public information, such as equipment fuel efficiency and power ratings, to estimate fuel and energy consumption. 15 Based on estimated allocation between diesel and gasoline vehicles. 16 Refrigerant estimates, which we began reporting in 2023, were determined using vehicle data, active HVAC unit data, and assumed refrigeration and HVAC systems in office and warehouse spaces, based on square footage, using the EPA's Accounting Tool to Support Federal Reporting of Hydrofluorocarbon Emissions: Supporting Ordice and warehouse spaces, passed on square rootage, using the EPA'S Accounting 1001 to Support Federal Reporting of Hydrofiuorocarbon Emissions: Supporting Documentation (Oct. 2016). 17 The 2020 methodology for capturing emissions associated with HVAC systems at our tower sites leveraged an assumed energy consumption for all sites with HVAC. Beginning in 2021, we improved our data collection processes by identifying the type of HVAC systems situated in ground shelters at our tower sites (e.g., central air, window unit) to more precisely reflect the differing energy consumption levels of each type of unit and resulting emissions, also taking into account assumptions regarding (i) customer tenancy at company-owned shelters, (ii) customer reliance (or lack thereof) on our HVAC units and (iii) HVAC system operations in unoccupied shelters. The 2024 analysis identified that HVAC electricity use was incorrectly included for units located in unoccupied shelters in 2022 and 2023. This has been corrected in the 2024 calculation. 18 Beginning in 2020, we refined our methodology for calculating energy consumption and the resulting emissions for the Small Cell and Fiber asset base, accordingly impacting the year-over-year comparability of the results. Detailed explanations of these adjustments are available in our sustainability reports for the respective years. 19 Based on (1) actual office consumption data, when available, (2) owned and leased square footage and (3) estimates derived from nationwide energy intensity statistics from the Energy Information Administration's (EIA) Commercial Building Energy Consumption (CBEC) Survey for the remainder of the offices, taking into account significant events impacting the company and its operations, where appropriate. 20 Percentage calculated using reported annual renewable energy contracted compared with reported annual electricity consumption. 21 The number of total lit towers is subject to slight fluctuations year-over-year as the result of regulatory changes. 22 Percentages calculated based on the total lit tower count as of December 31 of each year represented.