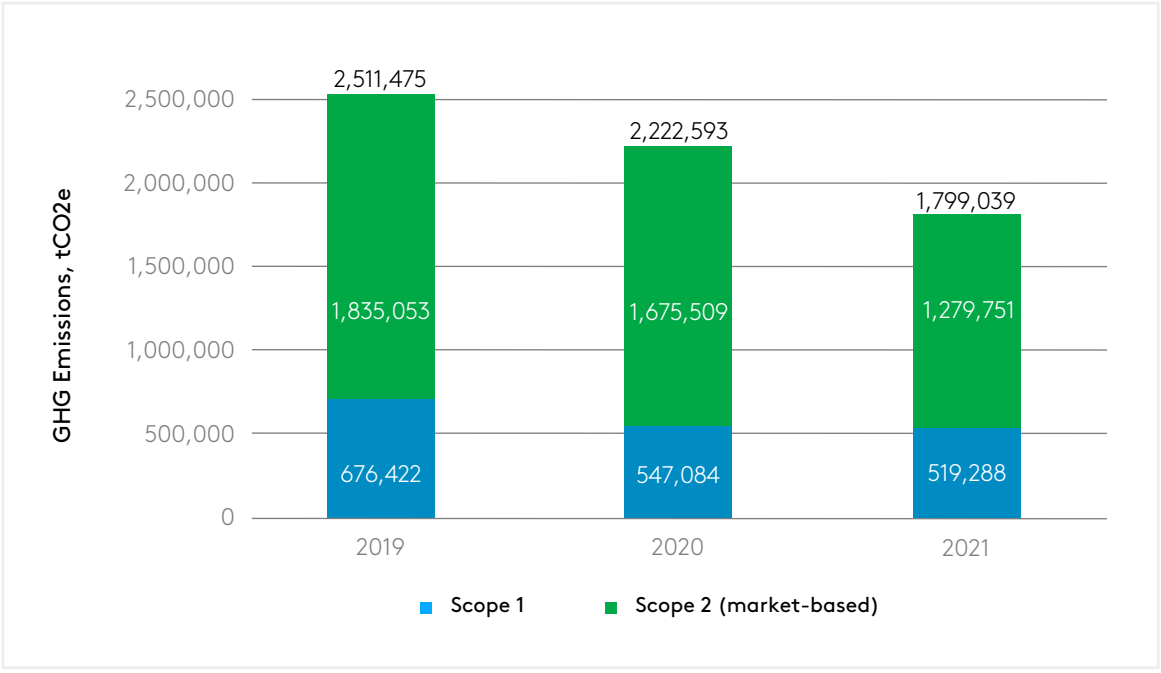
COMCAST

2022 Carbon Footprint Data Report

This Report includes data from calendar years 2019 through 2021. Learn more about our environmental goals and impact on the **Environment page** of our website. Inclusion of information in the materials in this Report and on our website should not be construed as a characterization of the materiality or financial impact of that information with respect to our company.

Comcast Scope 1 and 2 Market-Based Greenhouse Gas Emissions

During 2021, greenhouse gas emissions, tCO2e, decreased by 19% primarily as a result of our increased use of renewable energy, a reduction in global electricity grid emissions, and our continued effort to reduce energy usage.



Organizational Boundaries

The energy and greenhouse gas ("GHG") reporting boundary for the information in this report is for Comcast Corporation and its consolidated subsidiaries, including Comcast Cable Communications, NBCUniversal Media, and Sky (collectively "Comcast").

To establish the activities and relevant assets for purposes of its GHG inventory, Comcast used the Operational Control approach, as defined by the World Resource Institute ("WRI") and World Business Council for Sustainable Development ("WBCSD") Greenhouse Gas Protocol's Corporate Accounting and Reporting Standard – Revised Edition ("GHG Protocol"). Per the GHG Protocol, Operational Control over an operation exists where a company has full authority to introduce and implement operating policies at the operation. Included within this scope are consolidated joint ventures where we have operational control.

Scope 1 and 2 Emission Data

The emission data in this report includes certain estimates that are based on a combination of measured and estimated emission data using reasonably available information at the time, as described in additional detail in the table below. As with any projections or estimates, actual results or numbers may vary based upon factors such as variations in processes and operations, availability and quality of data, and methodologies used for measurement and estimation. Changes to emission estimates may occur if updated data or emission methodologies become available.

Key performance indicator	Unit	2019	2020	2021
Greenhouse gas emissions[1]				
Scope 1 [2,3]	tCO2e	676,422	547,084	519,288
Scope 2 (market-based) [4,5]	tCO2e	1,835,053	1,675,509	1,279,751
Scope 2 (location-based)[4,6]	tCO2e	1,863,480	1,743,564	1,551,747
Total Scope 1 and Scope 2 market-based	tCO2e	2,511,475	2,222,593	1,799,039
Total Scope 1 and Scope 2 location-based	tCO2e	2,539,902	2,290,648	2,071,035
Carbon intensity				
Revenue	$ million	108,942	103,564	116,385
Carbon emissions per $ million revenue[7]	tCO2e/$ million	23.1	21.5	15.5
Energy				
Energy from fuel consumption[8]	MWh	2,381,976	2,062,394	1,907,571
Grid electricity	MWh	4,740,096	4,434,339	4,180,378
On site renewable generation consumed and renewable attributes not sold	MWh	6,119	6,362	7,317
On site renewable generation consumed and renewable attributes sold	MWh	1,178	1,667	2,937
Total energy consumed[9, 10]	MWh	7,129,369	6,504,762	6,098,203
Percent grid electricity[9]	%	66.5	68.2	68.6
Energy intensity				
Energy intensity per $ million revenue	MWh/$ million	65.4	62.8	52.4
Renewable energy[11]				
Energy attribute certificates[12]	MWh	140,705	248,496	655,227
On site renewable generation consumed and renewable attributes not sold	MWh	6,119	6,362	7,317
Total renewable energy	MWh	146,824	254,858	662,544
Percent renewable energy[9]	%	2.1	3.9	10.9
Percent renewable electricity[9]	%	3.1	5.7	15.8

1 Comcast calculates its GHG emissions inventory based on the WRI/WBSCD GHG Protocol and the WRI/WBSCD GHG Protocol Scope 2 Guidance – an amendment to the GHG Protocol Corporate Standard. Comcast includes carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O) and hydrofluorocarbons (HFCs) for Scope 1 and CO_2, CH_4 and N_2O for Scope 2. Sulfur hexafluoride (SF_6) is not present in Comcast's operations. Biogenic emissions are not reported in either Scope 1 or Scope 2 emissions. To calculate GHG emissions in CO_2 equivalents (CO_2e) for Scope 1 and Scope 2 emissions, Comcast uses the Global Warming Potentials ("GWP") from the IPCC Fourth Assessment Report ("AR4").

2 Scope 1 emissions include GHG emissions from stationary combustion sources such as from heating, emergency generators and cooking operations, mobile combustion sources from fleet, and fugitive and refrigerant emissions. For stationary combustion, fugitive and refrigerant emissions, actual data from invoices or similar records are used to calculate the respective GHG emissions. When actual data is not available for certain sources or locations, Comcast estimates usage using proxy data primarily based on actual data from similar sites and assets or by utilizing industry standards such as the U.S. Energy Information Administration's ("EIA") Commercial Buildings Energy Consumption Survey ("CBECS"). For mobile combustion, direct fuel consumption data obtained through various mechanisms (e.g., fuel cards, fuel logs) is used to calculate GHG emissions. For vehicles, when actual fuel usage data is not available, Comcast estimates usage using proxy data primarily based on actual data from similar fleet.

3 Emission factors used in the 2021 Scope 1 emissions calculations include U.S. EPA Climate Leaders, Emissions Factors for Greenhouse Gas Inventories (April 2021), UK Government (DEFRA/BEIS) Greenhouse Gas Conversion Factors for Company Reporting (June 2021), Japan's Ministry of Environment Combustion Factors (April 2021) and China's Ministry of Ecology & Environment (December 2020). See the 2020 Carbon Footprint Data Report for relevant factors used in 2019 and 2020 emissions calculations.

4 Scope 2 emissions include GHG emissions from purchased electricity, heat, steam and cooling. For purchased electricity, heat, steam and cooling, Comcast uses usage specified in invoices, when available, to calculate GHG emissions. Similar to Scope 1 emissions, when actual data is not available, Comcast estimates the usage using proxy data primarily based on actual data from similar sites and assets. Purchased electricity is also used for power supplies to power the cable network. Emissions from power supplies are calculated or estimated based on real-time monitoring data.

5 For Scope 2 market-based emissions, Comcast follows the hierarchy outlined in Table 6.3 of the WRI/WBSCD GHG Protocol Scope 2 Guidance for selecting appropriate emission factors. In countries where reliable residual mix factors are not available, Comcast uses the regional grid averages to calculate market-based emissions. Emission factors used in 2021 Scope 2 market-based calculations include Association of Issuing Bodies: Version 1.0 2020 European Residual Mixes (May 2021), Japan's Ministry of Environment Combustion Factors (April 2021), and applicable factors used in the location-based method. See the 2020 Carbon Footprint Data Report for relevant factors used in 2019 and 2020 emissions calculations.

6 To calculate Scope 2 location-based emissions, only regional and national grid mixes are utilized. Calculations do not reflect any renewable energy purchasing choices made by Comcast. Emission factors used in 2021 Scope 2 location-based method calculations include U.S. EPA's 2019 Emissions & Generation Resource Integrated Database ("eGRID2019") (February 2021), U.S. EPA Climate Leaders, Emissions Factors for Greenhouse Gas Inventories (April 2021), U.S. Energy Star Portfolio Manager Technical Reference (August 2021), IEA Statistics Data Service: 2019 Emission Factors (September 2021), UK Government (DEFRA/BEIS) Greenhouse Gas Conversion Factors for Company Reporting (June 2021) and Japan's Ministry of the Environment Emissions Factor by Electric Power Company (Apr 2021). See the 2020 Carbon Footprint Data Report for relevant factors used in 2019 and 2020 emissions calculations.

7 Carbon intensity is calculated based on Scope 1 and Scope 2 market-based emissions.

8 Includes energy use related to natural gas, propane, diesel, gasoline, fuel oil, biodiesel, kerosene, liquefied petroleum gas, liquefied natural gas, aviation gasoline, compressed natural gas, ethanol, jet fuel, heating, cooling and steam. Where applicable, fuel use is converted to MWh.

9 Comcast calculates these metrics in alignment with Sustainability Accounting Standards Board ("SASB") metric TC-TL-130a.1. For the renewable energy percentage, the numerator excludes grid-supplied renewable energy, which is outside of the control or influence of Comcast. The denominator is total energy consumption, inclusive of energy from direct fuel usage as well as purchased electricity, steam, heat and cooling. An alternate calculation of total renewable electricity using only total electricity consumption in the denominator is also presented.

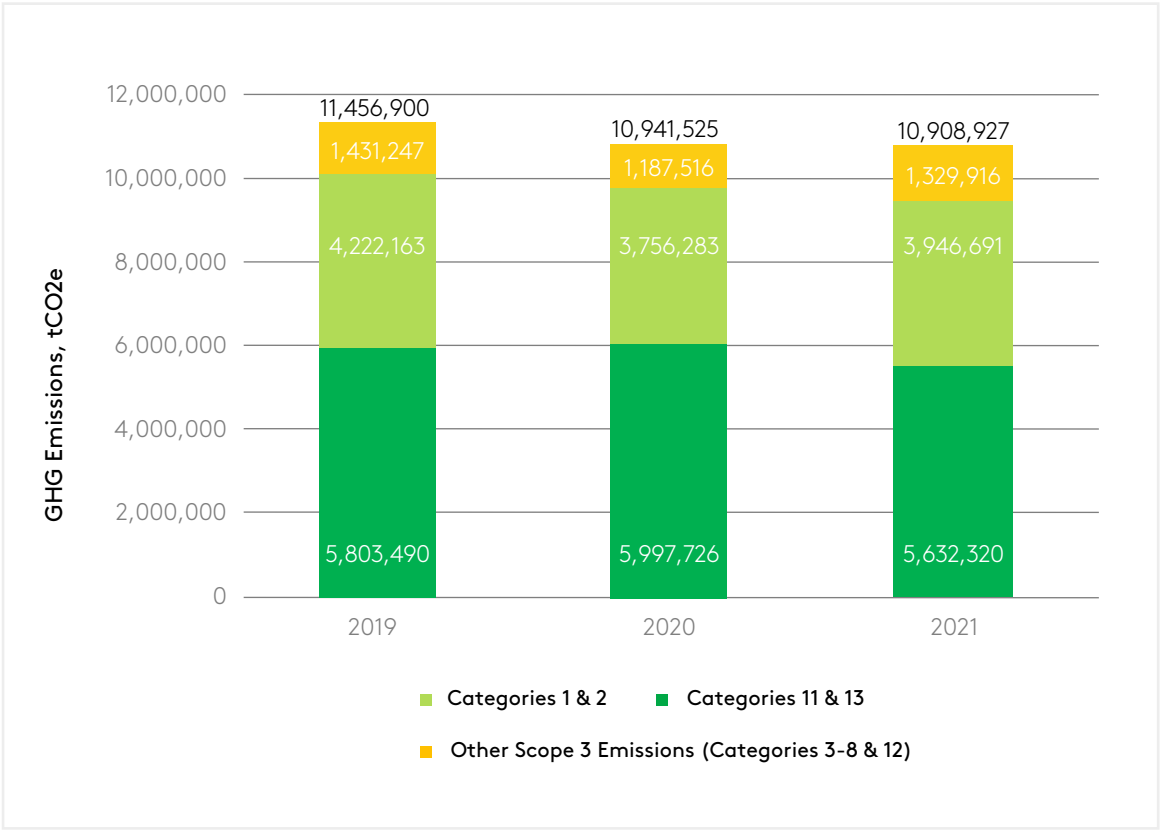
10 Total energy consumed converted to GJ is 21,953,532 GJ in 2021, 23,417,144 GJ in 2020 and 25,665,729 GJ in 2019.

11 Comcast utilizes SASB's definition of renewable energy, which is "energy from sources that are replenished at a rate greater or equal to their rate of depletion, such as geothermal, wind, solar, hydro and biomass."

12 Energy attribute certificates ("EACs") are a category of contractual instruments that represent the attributes of one megawatt-hour ("MWh") of renewable electricity generated. EACs include but are not limited to Renewable Energy Certificates ("RECs") and Guarantees of Origin ("GOs"). EACs are generated from renewable energy projects (e.g., solar or wind farm) and can be obtained through long-term contracts (such as green tariffs, PPAs, vPPAs, and other retail renewable energy products) from new renewable energy assets that convey RECs or GOs with the contract, or from existing renewable assets (through supplier contracts or unbundled EAC purchases in the open market). EACs are only taken into account in Scope 2 market-based emission calculations.

Comcast Scope 3 Greenhouse Gas Emissions

In 2022, Comcast began reporting its estimate of the emissions associated with our value chain (Scope 3) from our 2019 baseline through 2021. From 2019 to 2021, Comcast's estimated Scope 3 greenhouse gas emissions, tCO2e, decreased by 5%. Scope 3 emissions represent an estimate of the GHG emissions produced in a company's value chain. By definition, Scope 3 emissions occur from sources owned or controlled by entities outside of the company's control and, in certain cases, two or more companies may account for the same emissions within the GHG inventories they calculate.



Scope 3 Emissions Data

Comcast calculated its estimates of its Scope 3 GHG emissions inventory based on the WRI/WBSCD GHG Protocol Technical Guidance for Calculating Scope 3 Emissions ("GHGP Scope 3 Technical Guidance"). The emission data in this report includes many estimates that are based on a combination of measured and estimated emissions data using reasonably available information at the time, as described in additional detail in the methodology table below. As with any projections or estimates, actual results or numbers will vary based upon factors such as variations in processes and operations, availability and quality of data, and methodologies used for measurement and estimation. Given the inherent data limitations and inconsistent estimation techniques among companies for Scope 3 emission estimates in particular, readers are cautioned to not place any undue reliance on our estimated Scope 3 emissions. Changes to emission estimates may occur if updated data or emission methodologies become available.

For the boundary of these reported emissions, refer to the "Organizational Boundary" section above, which is uniformly applied to Scope 1, Scope 2, and Scope 3.

Scope 3 Categories	Unit	2019	2020	2021
Greenhouse gas emissions				
Category 1: Purchased goods and services & Category 2: Capital goods	tCO2e	4,222,163	3,756,283	3,946,691
Category 3: Fuel- and energy-related activities	tCO2e	564,710	498,581	669,777
Category 4: Upstream transportation and distribution	tCO2e	307,484	330,003	388,871
Category 5: Waste generated in operations	tCO2e	28,862	23,128	17,277
Category 6: Business travel	tCO2e	202,470	50,739	46,651
Category 7: Employee commuting	tCO2e	305,359	65,032	42,844
Category 8: Upstream leased assets	tCO2e	14,711	216,617	158,049
Category 11: Use of sold products	tCO2e	1,540,692	1,688,780	1,479,007
Category 12: End-of-life treatment of sold products	tCO2e	7,651	3,416	6,447
Category 13: Downstream leased assets	tCO2e	4,262,798	4,308,946	4,153,313
Scope 3 Total	**tCO2e**	**11,456,900**	**10,941,525**	**10,908,927**

Scope 3 Emissions Methodology

Comcast's estimated Scope 3 emissions were prepared in accordance with the GHG Protocol, based on the GHGP Scope 3 Technical Guidance, using a variety of methodologies as described in the table below. Comcast included carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O) and hydrofluorocarbons (HFCs) in its Scope 3 emissions inventory. Sulfur hexafluoride (SF6) is not present in Comcast's operations. Biogenic emissions are not included in Comcast's reported Scope 3 emissions inventory. To convert GHG emissions into CO2 equivalents (CO2e), Comcast followed UNFCCC guidance using the Global Warming Potentials ("GWP") from the IPCC Fourth Assessment Report ("AR4").

Categories	Primary Methods	2021 Emission Factors
Category 1: Purchased goods and services & Category 2: Capital goods	Spend-based method: Multiplies the spend in dollars by the relevant secondary emission factors per unit of economic value (i.e., tCO2e/$) Spend related to programming contracts, licensed content, and sports rights were excluded	• Approximately 10% of emissions were calculated using supplier-specific emission factors from the most recently available CDP Supplier submissions, vendors surveys, or supplemental research. The supplier Scope 1 emissions, Scope 2 emissions, upstream Scope 3 emissions, and revenue were utilized to create a supplier-specific spend-based emission factor. • Remaining 90% of emissions were calculated using cradle-to-gate EEIO emission factors from the U.S. EPA Supply Chain Greenhouse Gas Emission Factors for US Industries and Commodities (January 2022), or the OpenLCA lifecycle assessment software.
Category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)	Average-data method: Utilizes average emissions per unit of consumption, multiplying by the well-to-tank ("WTT"), WTT transportation and distribution ("T&D"), and T&D factors when relevant	• U.S. EPA 2019 Emissions & Generation Resource Integrated Database ("eGRID2019") (February 2021) • IEA Statistics Data Service: 2019 Emission Factors (September 2021) • UK Government (DEFRA/BEIS) Greenhouse Gas Conversion Factors for Company Reporting 2021 (Revised January 2022)
Category 4: Upstream transportation and distribution	Spend-based method: Multiplies the spend in dollars by the relevant secondary emission factors per unit of economic value (i.e., tCO2e/$)	• Approximately 9% of emissions were calculated using supplier-specific emission factors from the most recently available CDP Supplier submissions, vendors surveys, or supplemental research. The supplier Scope 1 emissions, Scope 2 emissions, upstream Scope 3 emissions, and revenue were utilized to create a supplier-specific spend-based emission factor. • Remaining 91% emissions were calculated using cradle-to-gate EEIO emission factors from the U.S. EPA Supply Chain Greenhouse Gas Emission Factors for US Industries and Commodities (January 2022), or the OpenLCA lifecycle assessment software.

Scope 3 Emissions Methodology

Categories	Primary Methods	2021 Emission Factors
Category 5: Waste generated in operations	Spend-based method: Multiplies the spend in dollars by the relevant secondary emission factors per unit of economic value (i.e., tCO2e/$) Waste-type-specific method: Multiplies the weight in short tons by relevant secondary emission factors per unit of weight (i.e., tCO2e/short)	• Greenhouse Gas Protocol Scope 3 Evaluator Quantis Tool • U.S. EPA Climate Leaders, Emissions Factors for Greenhouse Gas Inventories: Table 9 (April 2021) • UK Government (DEFRA/BEIS) Greenhouse Gas Conversion Factors for Company Reporting 2021 (Revised January 2022)
Category 6: Business travel	Distance-based method: Multiplies the travel reported in miles by the relevant emission factor (i.e., tCO2e/mile) Additional methodologies based on hotel nights, fuel usage, and spend employed as relevant	• U.S. EPA Climate Leaders, Emissions Factors for Greenhouse Gas Inventories: Table 10 (April 2021) • UK Government (DEFRA/BEIS) Greenhouse Gas Conversion Factors for Company Reporting 2021 (Revised January 2022) • GreenView Hotel Footprinting Tool - Heat Map of Carbon Emissions per Room Night (November 2020) • U.S. EPA Supply Chain Greenhouse Gas Emission Factors for US Industries and Commodities (January 2022) • OpenLCA lifecycle assessment software
Category 7: Employee commuting	Average-data method: Multiplies headcount by return to office data, then by relevant emission factor (i.e., tCO2e/FTE)	• UK Government (DEFRA/BEIS) Greenhouse Gas Conversion Factors for Company Reporting 2021 (Revised January 2022) • Greenhouse Gas Protocol Scope 3 Evaluator Quantis Tool
Category 8: Upstream leased assets	Spend-based method: Multiplies the spend in dollars by the relevant secondary emission factors per unit of economic value (i.e., tCO2e/$) Average-data method: Multiplies leased asset square footage by the appropriate usage intensity factor then by the relevant emission factor (i.e., sq ft * kWh/sq ft * tCO2e/kWh)	• IEA Statistics Data Service: 2019 Emission Factors (September 2021) • U.S. EPA 2019 Emissions & Generation Resource Integrated Database ("eGRID2019") (February 2021) • U.S. EPA Climate Leaders, Emissions Factors for Greenhouse Gas Inventories: Table 1 (April 2021) • U.S. EPA Climate Leaders, Emissions Factors for Greenhouse Gas Inventories: Table 11 & Table 12 (April 2021) • U.S. EIA Commercial Buildings Energy Consumption Survey (May 2016) • U.S. EPA Supply Chain GHG Emission Factors for US Commodities and Industries v1.1 (January 2022) • OpenLCA lifecycle assessment software

Scope 3 Emissions Methodology

Categories	Primary Methods	2021 Emission Factors
Category 9: Downstream transportation and distribution	Not applicable	
Category 10: Processing of sold products	Not applicable	
Category 11: Use of sold products	Product-specific method: Multiplies total volume of devices by a model-specific or weighted average annual energy usage per device, then by an estimated lifetime and relevant secondary emission factor (i.e., number of devices * kWh/year * lifetime in years * tCO2e/kWh)	• U.S. EPA 2019 Emissions & Generation Resource Integrated Database ("eGRID2019") (February 2021) • IEA Statistics Data Service: 2019 Emission Factors (September 2021) • UK Government (DEFRA/BEIS) Greenhouse Gas Conversion Factors for Company Reporting 2021 (Revised January 2022)
Category 12: End-of-life treatment of sold products	Waste-type-specific method: Multiplies the number of products sold by the estimated product weight and the appropriate end-of-life emission factor matching the type of material being disposed (i.e., weight (lb) * tCO2e/ lb)	• U.S. EPA Climate Leaders, Emissions Factors for Greenhouse Gas Inventories: Table 9 (April 2021) • Green Story Inc: "Comparative Life Cycle Assessment (LCA) of Second-Hand vs New Clothing" (May 2019)
Category 13: Downstream leased assets	Product-specific method: Multiplies total volume of devices by a model-specific or weighted average annual energy usage per device, then by the relevant secondary emission factor (i.e., number of products out on lease * unit energy usage (kWh/yr) * emission factor (tCO2e/kWh)) Average-data method: Multiplies leased asset square footage by the appropriate usage intensity factor then by the relevant emission factor (i.e., sqft * kWh/sqft * tCO2e/kWh) Distance-based method: Multiplies total miles driven (based on number of days rented) by the relevant emission factor (i.e., days * miles/day * tCO2e/mile)	• U.S. EPA 2019 Emissions & Generation Resource Integrated Database ("eGRID2019") (February 2021) • U.S. EPA Climate Leaders, Emissions Factors for Greenhouse Gas Inventories: Table 10 (April 2021) • IEA Statistics Data Service: 2019 Emission Factors (Sep 2021) • U.S. EPA Climate Leaders, Emissions Factors for Greenhouse Gas Inventories: Table 1 (Apr 2021) • U.S. EPA Climate Leaders, Emissions Factors for Greenhouse Gas Inventories: Table 11 & Table 12 (Apr 2021) • U.S. EIA Commercial Buildings Energy Consumption Survey (May 2016)
Category 14: Franchises	This category has not been evaluated by Comcast	
Category 15: Investments	This category has not been evaluated by Comcast	