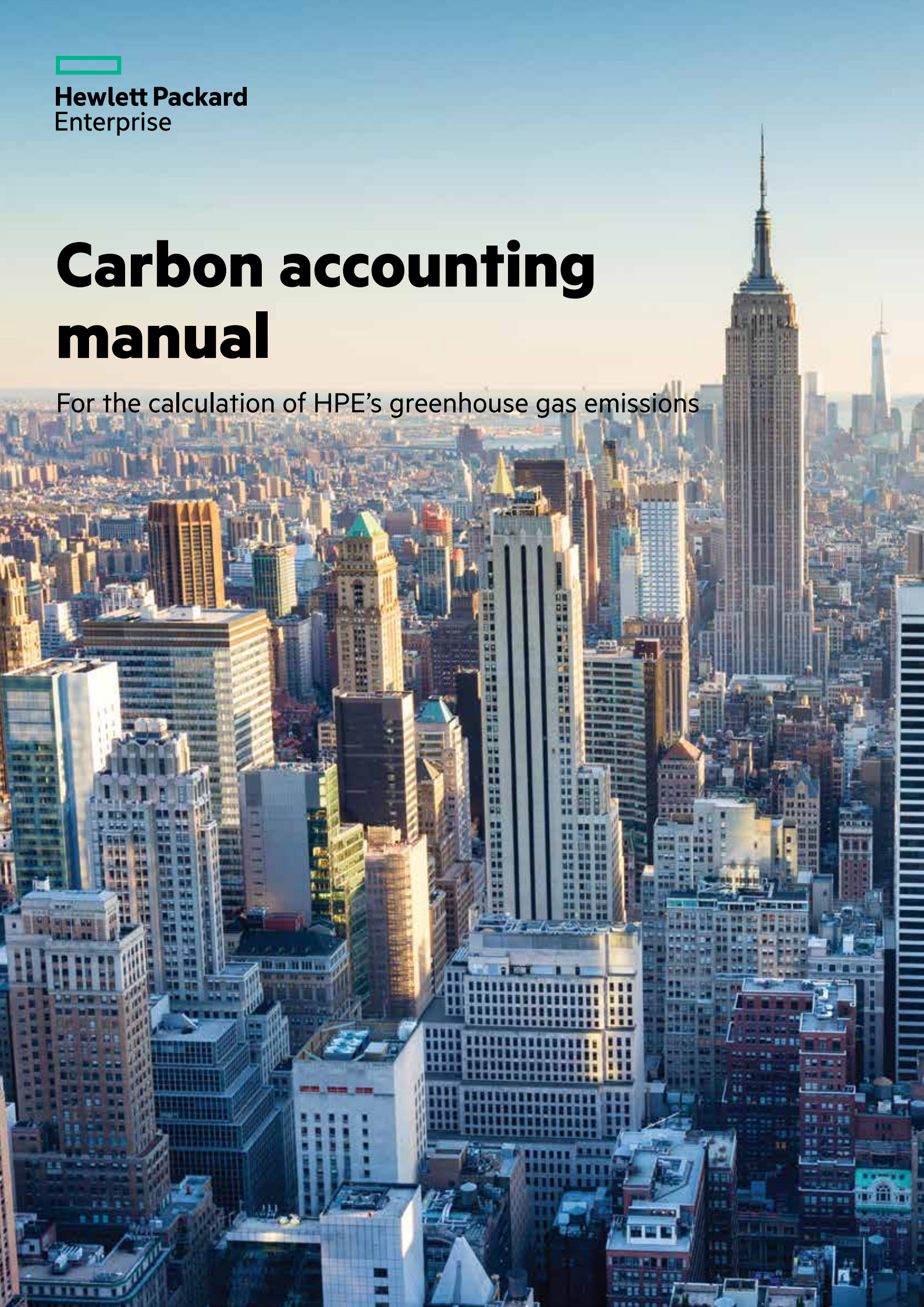




**Hewlett Packard
Enterprise**

Carbon accounting manual

For the calculation of HPE's greenhouse gas emissions



Purpose of the document

The purpose of this document is to provide additional details on the calculation methodology for Scope 1, 2, and 3 greenhouse gas (GHG) emissions of Hewlett Packard Enterprise as communicated in the HPE Living Progress Report (LPR).

References to the “Company” in this document refer to Hewlett Packard Enterprise as the current reporting entity, as well as to Hewlett-Packard Company as the operating entity during the 1 November 2014 to 31 October 2015 (FY15) reporting period.

GHG reporting standards

Generally, accepted GHG accounting principles exist to provide a standard basis for reporting a faithful, true, and fair account of a company’s GHG emissions. The Company calculates its reported GHG emissions in accordance with the industry guidelines as developed by the World Resources Institute (WRI) GHG Protocol.

- For Scope 1 and 2 emissions reporting, the Company utilizes the GHG Protocol Corporate Standard.
 - Scope 1 is defined as direct GHG emissions occurring from sources that are owned or controlled by the Company.
 - Scope 2 Indirect GHG emissions result from the generation of electricity, heat, or steam generated offsite but purchased by the Company.
- For Scope 3 emissions reporting, the Company utilizes the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.
 - Scope 3 includes indirect GHG emissions from sources not owned or directly controlled by the Company but related to our activities such as product use, vendor supply chains, delivery services, outsourced activities, and employee travel and commuting (other than travel in the Company’s transportation fleet). Scope 3 emissions are a consequence of the activities of the Company, but occur from sources not owned or controlled by the Company.

While GHG accounting and reporting principles continue to evolve, the Company uses principles derived in part from generally accepted financial accounting and reporting principles, including relevance, completeness, consistency, transparency, and accuracy.

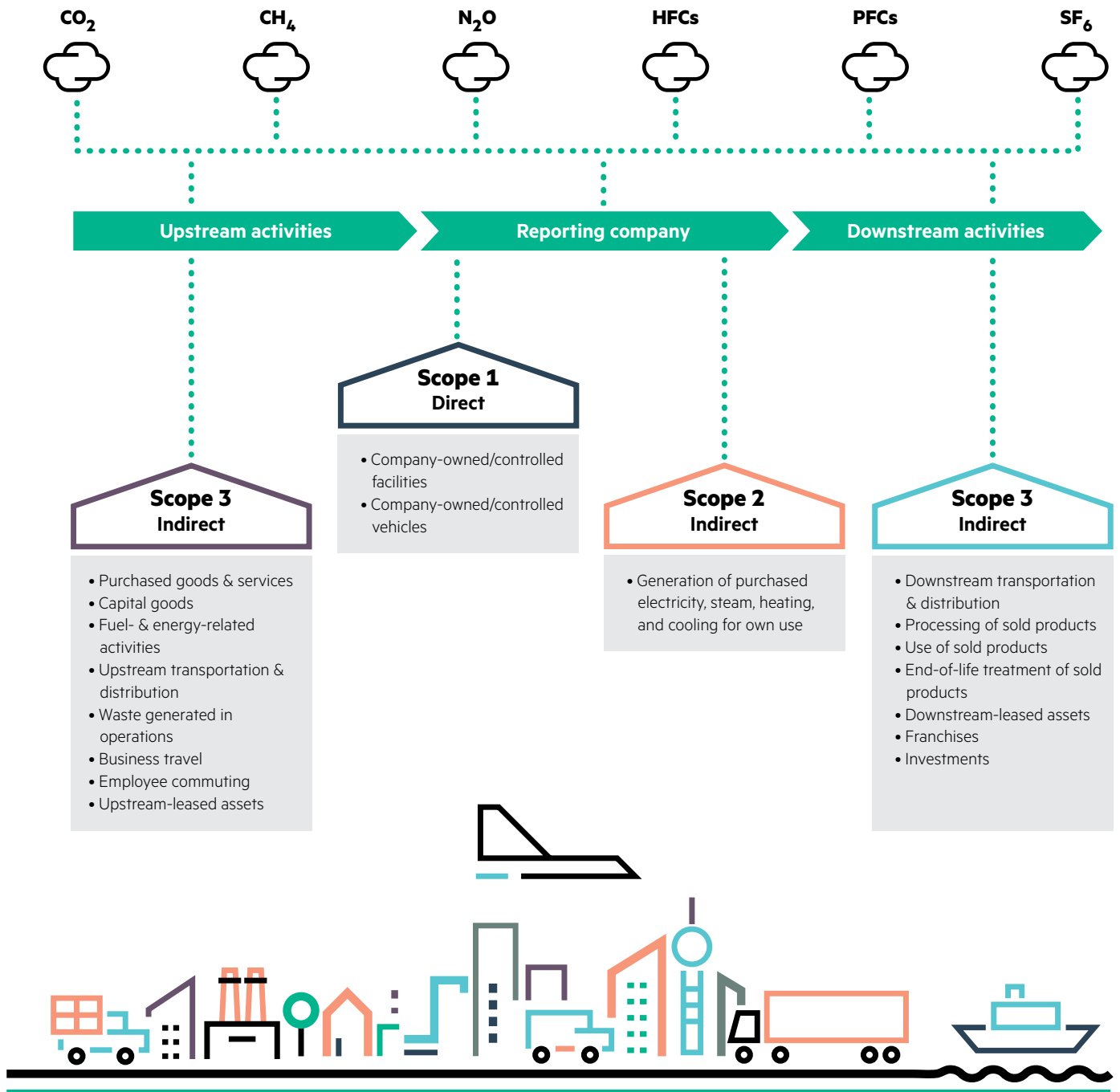


Figure 1: "Overview of GHG Protocol scopes and emissions across the value chain" based on WRI's "Corporate Value Chain Accounting and Reporting Standard," GHG Protocol



Organizational boundaries

Scope 1 and 2 emissions are calculated for all sites within the Company's operational control. Emissions from the Company-owned transportation are reported in Scope 1.

GHG emissions not within the Company's operational control are accounted for in Scope 3 emissions; these emissions are related to our activities in the reporting year (that is, emissions related to products purchased or sold in the reporting year).

For some Scope 3 categories, emissions occur simultaneously with the activity (for example, from combustion of energy), so emissions occur in the same year as the Company's activities. For some categories, emissions may have occurred in previous years (for example, the purchase of goods used to create a product sold). For other Scope 3 categories, emissions are expected to occur in

future years because the activities in the reporting year have long-term emission impacts. For these categories, reported emissions have not happened yet but are expected to happen as a result of the waste generated, investments made, and products sold in the reporting year. For these categories, the reported data should not be interpreted to mean that emissions have already occurred, but that emissions are expected to occur as a result of activities that occurred in the reporting year.

Fiscal year reporting

GHG emissions are reported using the fiscal year of the Company, 1 November through 31 October. For Scope 1, 2, and 3 emissions, the most recent fiscal year completed is reported in the following year's reporting.

Units

The Company reports GHG emissions in metric tons of carbon dioxide equivalents (mtCO₂e).

Calculation methodology

Sources of emission factors

Emission factors are used to convert an activity (such as purchased electricity in kilowatt-hours) to GHG emissions (in metric tons CO₂e). The Company utilizes the most accurate emission factors where available and feasible. Priority is given to supplier emission factors and then regional emission factors as defined by the United States Environmental Protection Agency or International Energy Agency (IEA).

Data collection and estimations

For electricity, natural gas, and refrigerant use, we collected data from all the Company-owned manufacturing sites and our largest owned and leased office, warehouse, data center, and distribution sites. This accounted for the majority of our total floor space. For the remaining sites where data is not tracked directly, we extrapolated data as available from comparable operations, primarily data centers and office space, for the remaining floor space, unless stated otherwise. We continue to refine the process by which we collect data and calculate trends.

Scope 1

Accounting for refrigerants

Refrigerants are generally used in air conditioning units in the Company's buildings and GHG emissions are linked to leakages in these systems. Leakage from these systems is generally very small; however, the global warming potential of these chemicals is high. Numerous refrigerant types are used and reported from sites for which different emission factors exist.

- When actual consumption values are available based on invoices, GHG emissions are calculated using the appropriate emissions factor for each type of refrigerant.
- Some sites may not report any refrigerants for a given year—if the sites have historically reported refrigerant use, these sites are assumed to have zero leakage in the year.

- Other sites have not ever reported refrigerant leakage because no measured or invoiced data is available—refrigerant use for these sites is estimated using a regional intensity factor (refrigerant CO₂e per square foot). This factor is based on an average of measured refrigerant-emission values and tracked square footage for these sites from the previous year in each region. Refrigerant use is estimated quarterly.

Auto fleet

The Company's auto fleet emissions are compiled based on different data acquisition systems worldwide. Auto fleet data is calculated using different methods for different regions. The U.S. and Canada fleet GHG emissions are calculated using direct fuel consumption data. For Europe, Middle East, and Africa (EMEA), country-specific vehicle distances that have been derived from historic data and reported averages, are applied across known vehicle types (as described in the table below). Asia Pacific and Japan (APJ) emissions are calculated by applying average annual emissions per vehicle from EMEA to the number of vehicles used in APJ. Latin America emissions used a similar process but with U.S. average emissions per vehicle.

Table 1: EMEA country-specific vehicle distances

Country	Estimated mileage (km)
Austria	30,000
Belgium	25,000
Switzerland	25,000
Germany	25,000
Denmark	31,000
Spain	25,000
Finland	30,000
France	25,000
UK	31,000
Ireland	25,000
Italy	25,000
Luxembourg	40,000
Netherlands	30,000
Portugal	35,000
Sweden	25,000
U.S. and Canada	Fuel consumption data used

Scope 2

In 2015, the Company reported Scope 2 emissions using both the location-based and market-based methods. 100 percent of the Company's overall electricity consumption reported in the market-based method reflects actual markets with contractual information.

The Company's voluntary renewable energy purchases consist of Renewable Energy Credits (RECs) from power purchase agreements, unbundled RECs, purchased renewables (sourced mostly from wind), and zero-carbon electricity (sourced mostly from large hydro).

The Company purchases RECs and generates renewable energy at some sites. Renewable energy is accounted for in different ways depending on how the contract is entered or metered.

For onsite production (such as solar), the renewable energy is metered separately, and it is included in our total consumption. This amount of consumption is considered to have zero Scope 1 and Scope 2 emissions.

The Company reports location-based and market-based Scope 2 emissions in accordance with the GHG Protocol. In the market-based method, renewable energy is deducted from total purchased electricity prior to calculating emissions. In the location-based method, renewable energy has no effect or benefit to emission figures.

Residual mix

For countries beyond the European Union where a residual mix is not available, emissions are calculated using grid averages, which may result in double counting of voluntary purchases of renewable energy between electricity consumers.

Scope 3

The Company calculates its Scope 3 GHG emissions in accordance with the GHG Protocol, which defines fifteen distinct categories of Scope 3 emissions and provides a systematic framework to organize, understand, and report on Scope 3 activities within a corporate value chain.

The Company uses life cycle assessment (LCA) tools to calculate product-related impacts. An LCA evaluates all stages of a product's life using an inventory of relevant energy and material inputs and environmental releases. LCAs are designed to provide the total product carbon footprint (PCF) and a percentage breakdown of emissions among the four lifecycle stages: manufacturing, transport, use, and end of life.

The Company completed a wide range of LCAs for products across its portfolio and which are representative of the high-volume products that the Company sells. The Company uses different methods or models to calculate LCAs for the various types of products it sells.

Separate models that use Company-specific information have been created for the non-product related Scope 3 categories.

The following table provides additional details for each category:

Category	Description	Calculation methodology
<p>Purchased goods and services (Extraction to production)</p>	<p>Emissions associated with the extraction, production, and transportation of the products the Company sells in each of its major business groups.</p>	<p>The Company uses separate LCA methods to calculate GHG emissions associated with the following three product categories:</p> <ul style="list-style-type: none"> • Personal systems including desktops, notebooks, workstations, displays, thin clients, tablets/slates, and all in ones. • Printers include HP LaserJet, Inkjet, and DesignJet models, as well as scanners. Servers include all BLs, DLs, MLs, SLs, and MicroServers. <p>Personal systems</p> <p>PCFs are generated using the Product Attribute to Impact Algorithm (PAIA) model created by the Massachusetts Institute of Technology in conjunction with the Company and other manufacturers. The inputs to the PAIA model include such things as component characteristics, product energy use and transport information, many of which can be found on the product data sheets. The Company has the ability to generate PCFs for nearly all of our computer products using the PAIA model, including notebooks, desktops, monitors, all in ones, workstations, and tablets. The results are applied across the shipped volumes of all personal system products. Digital signage, retail point-of-sale units, and calculators are not considered in the calculation due to their small relative number and availability of lifecycle information.</p> <p>Printer LCAs for Inkjet and LaserJet products are prepared in conformance with ISO 14040 by thinkstep (formerly PE INTERNATIONAL). The LCA for printer products includes the GHG emissions associated with all consumables, including paper and cartridges, over the lifetime of the product. Adjustments are made to the printer LCA outputs to account for use patterns and duplexing rates as understood by the Company. We have prepared as many LCAs as possible to represent the mix of our products, and the results are applied across the shipped volumes of Inkjet, LaserJet, DesignJet, and scanner products. The analysis will be expanded in the future to include graphic solution products and other large format Inkjet printers; these are not considered at this time due to their relatively small numbers and availability of lifecycle information.</p> <p>Server LCAs are derived using a detailed energy analysis for the use phase, the primary Scope 3 impact for servers. The energy consumption is calculated using the publically available HPE Power Advisor using the typical configuration (memory, processor, chassis, etc.) of each server category. Utilization is estimated between 15 and 30 percent based on the type of server running 365 days by 24 hours per day. Energy emission factors per the IEA and a five-year estimated lifespan (per the product ECO Declarations) are used. The lifecycle phases of a server are estimated as 75.5 percent use phase, 21 percent manufacturing, three percent transportation, and 0.5 percent end of life based on the Company's analysis. This is applied across the total shipped volume for each server category.</p> <p>The calculation methodology for all three LCAs encompasses the following Scope 3 categories: 4 and 9 for transportation; 11 for use of sold products; and 12 for end-of-life treatment of sold products.</p> <p>FY14 reporting period changes</p> <p>The Company improved the accuracy of personal system, printing, and server carbon footprint calculations in FY14. The personal systems carbon footprint calculation methodology changed due to PCF data for many more products becoming available. The printer electricity and paper use calculation methodology utilizes paper consumption field data rather than estimates (field data was previously not available). Server carbon emissions use a more accurate shipped volume data source, which was discovered in FY14. To enhance year-over-year comparability, FY13 server- and printing-related emissions and water use are restated with the new data sources and methodology. Personal systems-related emissions are not recalculated. In addition, data for all years prior to FY13 do not reflect the accounting changes.</p>

Category	Description	Calculation methodology	
Capital goods	Emissions associated with the extraction, production, and transportation of the capital goods purchased by the Company.	Capital expenditures are identified on the Company's balance sheet; generally, the goods identified in property, plant, and equipment (PP&E) represents the annual investment in capital goods by the Company. The upstream impacts of these investments are estimated using the following category factors:	
		Buildings	589,000 mtCO ₂ e/\$ USD (in billion)
		Mechanical equipment	567,000 mtCO ₂ e/\$ USD (in billion)
		Electronic equipment	454,000 mtCO ₂ e/\$ USD (in billion)
		Other	464,000 mtCO ₂ e/\$ USD (in billion)
Fuel- and energy-related activities	All upstream emissions of purchased energy, including raw material extraction up to the point of combustion, as well as transportation and distribution losses (T+D).	<p>This category accounts for all of the upstream emissions associated with the energy purchased by the Company (Scope 1) and electricity consumed by the Company (Scope 2) for facilities under our operational control and as defined by the boundary for Scope 1 and 2 emissions. This category excludes emissions from the combustion of fuels or electricity consumed by the reporting Company since they are already included in Scope 1 or Scope 2.</p> <p>A total factor of 18 percent is applied to estimate the upstream impacts and is based on transportation and distribution losses, plant use losses, and emissions associated with extraction and transportation of fuels. Location-based method Scope 2 emissions are used to calculate this category.</p>	
Upstream transportation and distribution	The upstream transportation and distribution of the products the Company sells in each of its major business groups, including any retail and storage.	This category is calculated using the methods described for Category 1 (Purchased Goods and Services) and is considered together with Category 9 for upstream transportation.	
Waste generated in operations	Disposal and treatment of nonhazardous waste generated in the Company's facilities.	The total nonhazardous waste activity across the Company is reported in the annual Living Progress Report. An emissions factor determined by the United States Environmental Protection Agency's (EPA) Waste Reduction Model (WARM) is used to convert this to GHG emissions. A portion of nonhazardous waste is diverted from the waste stream and reused; emissions from this portion are not considered at this time, which is considered a conservative approach. The emission associated with processing hazardous waste is assumed negligible given the low relative volumes and comprehensive management practices the Company has in place.	
Business travel	Commercial air travel by employees	The estimation takes into account the type of aircraft, passenger and cargo load, cabin class, and miles traveled for each ticketed purchase. The average emissions factor used is 0.38 lb CO ₂ per passenger mile. The Company includes emissions from commercial air travel but excludes emissions relating to car rental and hotel stays since the data is currently not available. Emissions from transportation in vehicles owned or controlled by the Company are accounted for in Scope 1 (for fuel use).	
Employee commuting	Transportation of all worldwide employees between their homes and their worksites (in vehicles not owned and operated by the Company), including teleworking.	<p>Assumptions for commute distance, vehicle type, and number of working days for categories of employees (office, teleworkers, and mobile sales) are based on an U.S. transportation survey. Emission factors for the conversion of gasoline and other fuel types to carbon dioxide equivalents are obtained from the EPA's Greenhouse Gas Equivalencies and 2006 IPCC Guidelines for National Greenhouse Gas Inventories, chapter on "Mobile Combustion."</p> <p>For teleworkers, the household emissions for an eight-hour workday are calculated by using the average U.S. household energy per day times the IEA worldwide electricity conversion factor of 528 grams of CO₂e per kWh.</p>	
Upstream-leased assets	There are no known facilities that are excluded from Scope 1 and 2 at this time that would require inclusion in this category.	Not applicable.	
Downstream transportation and distribution	The downstream transportation and distribution of the products the Company sells in each of its major business groups, including any retail and storage.	This category is calculated using the methods described for Category 1 (Purchased Goods and Services) and is considered together with Category 4 for upstream transportation.	
Processing of sold products	The Company does not currently have any major product lines that require additional processing and the majority of products are accounted for in the product LCAs.	It is assumed that this category is negligible.	

Category	Description	Calculation methodology
Use of sold products	The use-phase emissions associated with energy consumption of the products the Company sells in each of its major business groups and includes the emissions associated with the paper and cartridges used during the lifetime of the Company's printer products.	This category is calculated using the methods described for Category 1 (Purchased Goods and Services).
End-of-life treatment of sold product	Emissions associated with the disposal and treatment of sold products.	This category is calculated using the methods described for Category 1 (Purchased Goods and Services).
Downstream-leased assets	Emissions associated with the operation of assets leased to other entities where the Company is a lessor and the facilities are not accounted for in our Scope 1 and 2 emissions.	The Company calculates this category using square footage from buildings leased to third parties as reported in the Company's annual report assuming that these facilities are outside of its operational control and not included in the Company's Scope 1 or 2 emissions. Only real estate assets are included in the calculation; product equipment leasing is accounted for in the shipped volume of each business group. The U.S. Department of Energy Commercial Building Energy Consumption Survey data for average office building emissions intensity and the worldwide average emissions factor intensity per the IEA are used. According to the survey, the average energy consumption of office buildings is 92,860 BTU per square foot, the emission factor of the worldwide average from IEA is 528 grams of CO ₂ e per kWh and the conversion rate of BTU to kilowatt-hours is 1 BTU to 0.00029307 kWh.
Franchises	The Company's franchising activities are negligible.	Not applicable.
Investments	This category includes all investments that the Company makes as indicated in the annual report.	It is assumed that this category is negligible. Investments in the reporting year are predominately in software-related businesses where the associated GHG emissions are relatively low. If the investments increase within the Company, the team will consider looking closer at each investment for possible inclusion in the Scope 3 GHG emission calculation.

Data validation

Learn more at hpe.com/livingprogress

Each year, the Company compares the net revenue recorded in the Company's Form 10-K to the sources of Scope 3 emissions to verify that the key sources are included for each component of net revenue. This analysis especially considers the LCA portion of the calculation. The Company performs a yearly analysis to consider the other Scope 3 categories for possible GHG emissions that should be included in the overall calculation.



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