

Methodology for calculating the
**Environmental Profit &
Loss Account** , including
Material Flow

At Philips, our purpose is to improve people's health and well-being through meaningful innovation. Our goal is to improve the lives of 2.5 billion people a year by 2030.

We launched our ESG commitments, with ambitious targets to be achieved by the end of 2025, in 2020. Besides our social impact, focusing on SDG 3, we have an environmental impact through our global operations (including our supply chain), but even more so through our products and solutions. This is where we contribute to SDG 12 (Ensure sustainable consumption and production patterns) and SDG 13 (Take urgent action to combat climate change and its impacts).

The Philips Environmental Profit & Loss (EP&L) account reports our efforts on the ecological dimension. It is an economic valuation in EUR of the impact that Philips has on the environment, or in other words: an environmental footprint of Philips' complete value chain expressed in monetary terms with some exclusions mentioned later in the report.

Our EP&L account is based on Life-Cycle Assessment (LCA) methodology. Philips has been performing LCAs since 1990. The assessments are used to steer our EcoDesign efforts and to determine the Green EcoDesign Focal Areas (GFAs) of the Philips product portfolio. The GFAs focal areas are energy, substances, packaging and circular design include are product characteristics like energy efficiency, weight and product lifetime that determine the environmental impact of our product portfolio. They form the basis of our steadily growing Green/EcoDesigned/EcoHero products solutions portfolio.

The EP&L account is a logical next step to extend the scope from individual product value chains to Philips' complete value chain. It will support the direction of our sustainability strategy by providing insights into the main environmental hotspots from an overall business point of view and it will guide Philips in its efforts to deliver on its commitment to reduce its full value chain emissions in line with a 1.5-degree global warming scenario.

The current EP&L account only includes the hidden environmental costs that are associated with our activities and products. It does not include the benefits ('profit') to society that Philips generates by improving people's lives through our products and solutions, e.g. our healthcare solutions. We have a well-established methodology to calculate the number of lives we positively touch with our products and solutions. We aim to look into valuing these societal benefits in monetary terms in the future.

This document describes the methodology we used to calculate the 2023 EP&L account, including information on the scope, assumptions and data sources. It also describes the material flow that is derived from the EP&L. The 'EP&L' metric and material flow metric are part of the assurance assignment of EY. EY's assurance report can be found here: chapter 13.6 of the Annual Report 2023.

Scope

The scope of the EP&L account comprises three parts:

Philips Group Scope of Environmental Profit& Loss Account, 2023

1

Business activities

All business activities and markets are included in scope except software, hardware servicing during use phase (parts replacement), consumables and accessories

2

Value chain

The scope of the EP&L account is 'cradle to grave'. It includes raw material, component, and packaging production and processing; Philips' own operations (manufacturing, offices, business travel, and logistics); usage of our products; production related waste; and disposal at the end of life.

3

Environmental impact

The choice of environmental impacts is related to the LCA methodology ReCiPe and the monetary valuation methodology that has been chosen. Further explanation is given under 'Methodology'.

Business activities

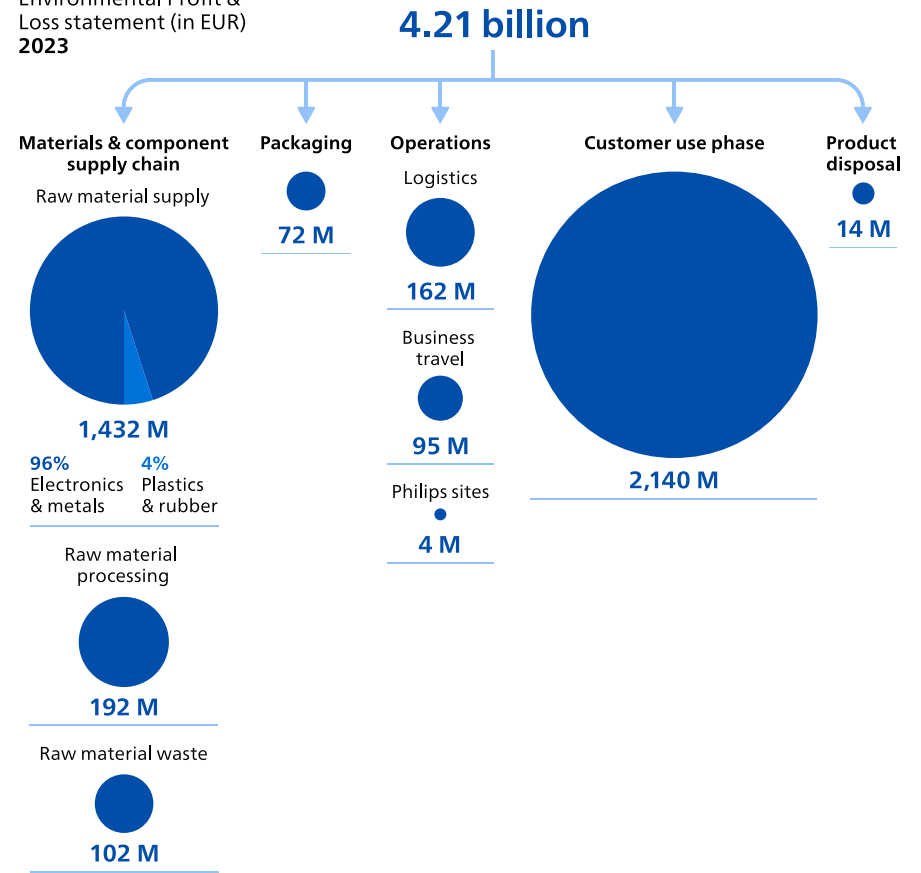
For Personal Health, 95% of the product portfolio revenue is covered in the EP&L. Non covered products consist of accessories, spare parts and products with relatively low sales revenue. Consumables that are directly connected to consumer electronic products, such as brush heads for toothbrushes, have been included. Consumables not directly attached to the product (e.g. shaving gel) are not included.

For Philips segments Diagnosis and Treatment, Connected Care, and Other, 83% of the revenue is included in scope when the sales from products described as "Not Assigned" by finance and products with Material IDs that have "0" quantities are excluded from this calculation. All medical systems and most monitors are included in the calculation with the exception of Lumify, and product (spare) parts.

Consumables, accessories, and hardware upgrades are excluded from the scope with the exception of masks, cuffs, and selected cables (including ECG cables). Reason for the exclusion of consumables (e.g. sensors, etc.) and accessories is that due to the large variety it is not yet possible to accurately determine the overall material composition and weight. Hardware upgrades and parts replacement (repair) of medical equipment during the use phase of medical equipment are difficult to trace back to material composition and are thus not included yet in scope. However, the environmental impact of business travel of the service engineers is included in scope.

The Philips products subject to the Respironics recall was evaluated as part of the 2023 EP&L calculation. In accordance with the EP&L methodology, products replaced during the recall by new products with lifetime guarantees were included in the 2023 EP&L calculation for all life cycle stages. Refurbished products and repair kits were not included.

Philips
Environmental Profit &
Loss statement (in EUR)
2023



Value chain

The scope of the EP&L addresses the key environmental contributors. For extraction and production of components (e.g. plastics and printed circuit boards), generic environmental impact data from the LCA database EcoInvent v3.9.1 have been used. EcoInvent references associated with Global (GLO) or Rest of World (ROW) values are primarily used since the origin of the materials is not easily determined given the many intermediate suppliers. Forming of metal and plastic materials into parts, e.g. with metal extrusion or injection moulding, is included in scope as the raw material processing lifecycle stage.

Use Phase

Energy consumption of our products (> 50%) is by far dominating Philips' environmental impact. The energy consumption during the full lifetime of the products sold in 2023 is included. As shown in Table 2 below, lifetime for Personal Health products is based on Lives Improved data and lifetime for Health Systems products is based on guaranteed service lifetime.

For example, the environmental impact of electricity needed to use a Diamond Clean toothbrush during its full lifetime of an estimated five years, so until 2028, is included in the 2023 EP&L account. This is a significant overestimate of the 2023 impact; however, as the life-cycle impact is 'generated' in 2023 it has been decided to account for this impact in the year that the products are sold. The only exception is Reference Products identified as rentals. The energy consumption of one year of rental and a one year allocation of materials are included in the 2023 EP&L calculation.

The use-case scenarios, defined by the power consumption, duration and frequency of use, has a significant impact on the result, especially for consumer products, which have large sales volumes, long lifetimes and frequently high energy consumption (e.g. haircare products).

As of 2023 we measure the impact of the electricity consumption of our products based on the specific energy mix of the country where the products are sold. For those countries without an emission factor, the market data is first used and if the market data is not available, then the world average is being used.

For Philips segments Diagnosis and Treatment and Connected Care, we calculate the energy consumption according to the average use case. In 2024, we plan to calculate the energy consumption according to the [COClR standard](#). This standard describes how a measurement should be carried out and what use case scenario to apply as to number of hours per day in ready-to-scan, standby, off and scanning mode. In the current EP&L account, the worst case scenario is applied (e.g. 10 hours of scan mode instead of 10 hours of alternating between scan and ready to scan mode), which provides an overestimation of the impact.

The total energy impact is also determined by the number of days that a medical system is used per year and the total lifetime. For the use frequency we apply 250 to 365 days per week for diagnostic medical systems assuming usage during normal working hours only (5 days per week and including 2-week holiday) or usage every day of the year. Actual number of days that diagnostic equipment is being used will depend on patient schedules and emergency situations which will differ per hospital. In next year's EP&L calculation we will apply a harmonized use frequency across the diagnostic portfolio. As to lifetime, an average of 10 years is used for patient monitors, X-ray, CT-, MR- IGT- and Ultrasound equipment and between 5 and 10 years for S&RC equipment. The lifetime is based on our guaranteed service lifetime.

Purchased Goods

For 2023 EP&L reporting, Philips has included the following lifecycle stages associated with Purchased Goods: Raw Material Supply, Packaging, Raw Material Processing, and Raw Material Waste. The impact of purchased goods relative to the total Philips' environmental impact is >40%. For the materials and packaging in the reference products, the Bill of Material provided from the business is used. The materials and associated weights per reference product are multiplied by the quantity sold of that reference product. Each material is mapped to an Ecolnvent reference associated with processing to determine the impact of upstream (supplier) processing.

The Raw Material Waste life cycle stage in the EP&L includes a subset of the Philips industrial sites (i.e. those that have adopted automated waste reporting) plus one non-industrial site (Mount Pleasant). Therefore, 83% of the total Philips waste (16,318 tonnes out of 19,375 tonnes of total Philips waste from industrial sites + 363 tonnes of Philips waste from Mount Pleasant) is captured in the EP&L reporting. Out of waste included in the EP&L reporting, 64% is considered to be "in scope" with remaining 36% considered "out of scope". The In Scope Items include: production related waste; and Batteries, Metals (Iron and Steel), Paint, and Printing Ink associated with Chemical Waste. Philips will continue to expand the reporting on raw material waste in 2024.

Environmental impacts

The choice of environmental impacts is related to the LCA methodology (ReCiPe) and the monetary valuation method that has been chosen. Further explanation is found under 'Methodology'.

Out of scope

Not included in the EP&L, besides the above mentioned out-of-scope business activities, are inputs- and outputs that are difficult to assess and have a relatively low contribution:

- Inbound transport of subassemblies
- Emissions to air and water, waste, consumption of water and process chemicals at Philips manufacturing sites
- End-of-Life for waste from industrial Philips sites
- Waste and water consumption of non-industrial Philips sites (e.g. offices and warehouses)

Philips uses mostly off the shelf components in its products which means that the net Bill of Materials (BOM) of products as used in the EP&L calculation will not deviate much (i.e. up to +/- 5% in terms of weight) from the gross purchased materials.

Methodology

The method used to calculate the EP&L account is the internationally recognized ReCiPe 2016 v1.03, midpoint (H) methodology, in combination with environmental pricing as provided by CE Delft. The EP&L calculation uses the environmental impact per reference product multiplied by the quantities of products sold and then expressed in EUR. A “reference product” is defined as a product representative of part of the product portfolio sold by Philips. Philips uses reference products to simplify the data required for the EP&L account, while ensuring coverage. Reference products cover almost the entire Philips portfolio (see Business Activities section above). Data models are based on the Swiss national LCI database Ecoinvent v.3.9.1, for background as well as foreground data.

Environmental impacts included in the assessment

- Climate change
- Ozone depletion
- Human toxicity (carcinogenic and non-carcinogenic)
- Eutrophication (marine and freshwater)
- Photochemical oxidant formation (human health and terrestrial ecosystems)
- Particulate matter formation
- Acidification (terrestrial)
- Ionizing radiation
- Ecotoxicity (terrestrial, marine, and freshwater)
- Agricultural land occupation
- Water depletion
- Fossil depletion
- Material resources metals minerals

Figure 4: Environmental impact categories

The environmental pricing methodology of CE Delft is based on the ReCiPe 2016 methodology for LCA. The prices (see table 1) are so-called damage costs (as opposed to prevention or abatement costs) and represent the willingness of citizens to pay for not having to be exposed to an additional 1 kg of environmental pollution, expressed in EUR per 1 kg of emissions.

As recommended by CE Delft, the environmental price for carbon was adjusted in 2023 with the yearly adjustment (by 4.3% each year).

The European environmental prices have been used for the calculations. Since Philips manufactures and sells products globally, the EU27 prices are considered representative.

Environmental impact category	Environmental price unit	Environmental price (Central) € ₂₀₂₁ /unit
Global Warming	€/kg CO ₂ -eq.	0,13
Stratospheric ozone depletion	€/kg CFC-11-eq.	29,1
Ionizing radiation	€/kBq Co-60-eq.	0,00422
Ozone formation, human health	€/kg NO _x -eq.	2,17
Ozone formation, terrestrial ecosystems	€/kg NO _x -eq.	0,416
Fine particulate matter formation	€/kg PM _{2,5} -eq.	99,2
Terrestrial acidification	€/kg SO ₂ -eq.	5,27
Freshwater eutrophication	€/kg P-eq.	3,74
Marine eutrophication	€/kg N-eq.	14,25
Terrestrial ecotoxicity	€/kg 1.4-DCB-eq.	0,00064
Freshwater ecotoxicity	€/kg 1.4-DCB-eq.	0,0209
Marine ecotoxicity	€/kg 1.4-DCB-eq.	0,0032
Human carcinogenic toxicity	€/kg 1.4-DCB-eq.	3,99
Human non-carcinogenic toxicity	€/kg 1.4-DCB-eq.	0,071
Land use	€/m ² a crop eq.	0,099
Mineral resource scarcity	€/kg Cu-eq.	0,014
Fossil resource scarcity	€/kg olie-eq.	0,028
Water consumption	€/m ³	0,407

Table 1: Environmental prices for LCA: ReCiPe 2016 midpoints, in €2021 per unit for EU27

1 For raw materials and components, the Ecoinvent ‘market for’ datasets are used which include all required logistics to make a material available on the market, where possible. However, the last mile transport from tier 1 suppliers to Philips is not included in our EP&L calculation.

2 Huijbregts MAJ, Steinmann ZJN, Elshout PMF, Stam G, Verones F, Vieira MDM, Van Zelm R, (2016) ReCiPe2016. A harmonized life cycle impact assessment method at midpoint and endpoint level. Report I: characterization. RIVM Report 2016–0104. National Institute for Human Health and the Environment, Bilthoven

Data quality

Several factors are influencing the bandwidth of the final EP&L account results:

- Accurateness of generic datasets
- Scope of data included
- The choice of reference products as proxies to cover all product categories
- The pattern of use of products to derive the electricity consumption (e.g. time per day, number of days, and lifetime)
- Assumptions made and the quality of the data supporting these assumptions

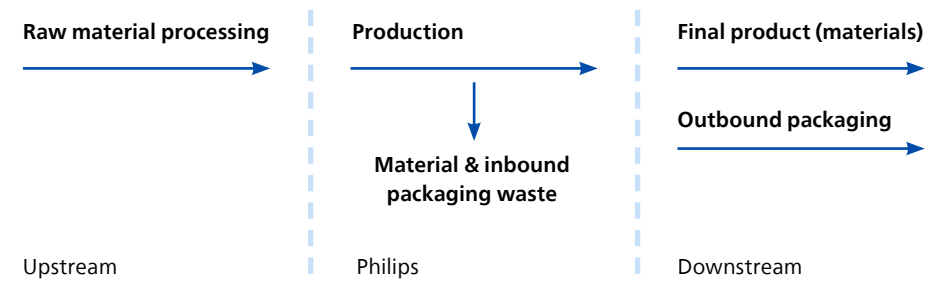
Availability and quality of data is a challenge inherent to LCA and results in uncertainty of the EP&L outcome. Uncertainty also results from the LCA and monetary valuation methodology used, which is based on assumptions that will vary over time.

The figures reported are Philips' best possible estimate. As we gain new insights and retrieve more and better data, we may enhance the methodology and accuracy of results in the future. The inherent uncertainties relevant to the further development of the EP&L are expressed in the related disclosures in the annual report.

Material Flow

The materials data for products and packaging used for the EP&L account can be leveraged to determine the flow of materials out of Philips, expressed in weight. The total mass per material used for the reference products (including packaging) is first classified according to its impact type (e.g., battery, metals, etc.) and then more granular by its material composition (e.g., Battery NiMH, Copper, etc.). Resource inefficiencies and waste packaging are also accounted for by including our sites' waste. On a periodic basis each site reports on waste accumulated during our production which among other things includes material residue left from production and inbound packaging.

The scope of the material flow includes materials from products and packaging put onto the market and the production-related waste materials (associated with both materials and packaging) generated from operations. Non-production related materials (e.g., canteen waste), production-related chemicals, and equipment used in operations are currently excluded. Rather than inspecting the resource inflow we therefore focus on material outflows, and as such assume that total material inflow is equivalent to all material outflows.



As part of the material flow calculations, materials for products and packaging considered "renewable" (e.g. wood, paper, etc) have been identified based on material type. Additionally, global values for the typical recycled content of materials and packaging were used to determine the amount of "virgin" vs "recycled" content.

Additionally, the weight of the critical or strategic raw materials was reported using the 2023 EP&L data. We use the list as defined by the European Commission to determine what is a Critical or Strategic Raw Material (dated 2023, EUR-Lex - 52020DC0474 - EN - EUR-Lex (europa.eu); https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/critical-raw-materials_en). The total weights of the EcoInvent References associated with these materials were then pulled from the 2023 EP&L data and reported in the 2023 Annual Report.

Data	Source	Remark
Product specific data collection		
Material composition and weight Philips products	Bill of materials (BOM) of reference products and product documentation Philips website	For each business, within the mentioned scope, representative reference products with high sales quantities were identified and the material composition of these products derived. These data were used as proxy for comparable other product categories. Net BOM data have been used. For Raw Material Processing, the EcoInvent References for the materials have been mapped to the following material processing groups: aluminum, chromium, copper, steel, rest of metal, plastics, and other.
Packaging composition and weight Philips products	Bill of materials (BOM) of reference products, WEEE packaging documentation, and product documentation Philips website	For each business, within the mentioned scope, representative reference products with high sales quantities were identified and the packaging composition of these products derived. These data were used as proxy for comparable other product categories. For Raw Material Processing, the EcoInvent References for the materials have been mapped to the following material processing groups: aluminum, chromium, copper, steel, rest of metal, plastics, and other.
Production amounts	Sales data	
Use Phase	Based on power (W) and duration of usage per day. Lifetime for Personal Health products is based on Lives Improved data. Lifetime for Health Systems products is based on guaranteed service lifetime.	If data was not available, assumptions were made based on use cases of similar products. Geographical scope of EcoInvent datasets: country-specific datasets used for electricity generation when available; For those countries without an emission factor, the market data is first used and if the market data is not available, then the world average is being used.
Material extraction and processing upstream	Generic data from EcoInvent (LCA) database (industry averages)	No specific environmental data from suppliers have been collected. Geographical scope of EcoInvent datasets: Global (GLO) or Rest of World (RoW) data for materials, unless country of origin is known, or if only European dataset (RER) is available.
Company level data collection		
Environmental data Philips sites - Energy	Energy consumption as registered in Credit360 software (used by Philips sites)	Waste, emissions to air and water, consumption of water, and process chemicals excluded. Geographical scope of EcoInvent datasets: country-specific datasets used for energy processes. For example, for China-based plants, the Chinese electricity mix is used.
Environmental data Philips sites - Waste	Waste weight data was provided by each site's waste service providers in monthly reports/invoices/bill of landing/manifests/SAP.	Treatment details were confirmed by the service provider via reports or email communication or included in the contract. Waste sources, where waste is generated, were provided by the site data collectors. Waste codes were provided according to the local regulations.
Energy consumption office buildings	Invoices from our energy providers	Aggregated at Corporate level and automated into the EP&L calculations using EcoInvent emission factors.
Outbound transportation supplied and (semi)final goods	Invoices from our logistics providers	This includes transportation between Philips sites and from Philips sites to customers.
Business travel	Internal declaration system as used by Philips employees	Aggregated at Corporate level and automated into the EP&L calculations using EcoInvent emission factors.
Final Disposal	WEEE disposal scenario in EcoInvent database	Aggregated at Corporate level and automated into the EP&L calculations using EcoInvent emission factors. Includes the weight of products' materials and packaging. Assumes 30 km transportation by truck from disposal location (e.g. retailer or hospital) to waste treatment / recycling facility.

