PHILIPS

Philips' Corporate Emission Accounting Methodology

Scope 3 — Category 11: Use phase

At Philips, while we focus on our purpose to improve health and well-being, we acknowledge that the healthcare industry is a major contributor to climate change and waste. As such we are committed to pave the way for a low-emission future by reducing not only our scope 1 and 2 emissions, but also our indirect scope 3 emissions. This effort is supported and overseen by the Executive Committee, which seeks increased transparency for its stakeholders to ensure accountability.

We account for 100% of scope 1 and 2 emissions from operations over which Philips or one of its subsidiaries has operational control, but not for emissions from operations in which Philips owns an interest but does not have operational control. By contrast, scope 3 emissions are derived from indirect activities outside Philips control, meaning calculations also include non-operated assets.

Of the 15 scope 3 subcategories, we account for Philips' four most material categories, which together make up 95% of our scope 3 emissions. These are: purchased goods and services (category 1), business travel (category 6), downstream transportation and distribution (category 9), and use phase (category 11). The methodology for purchased goods and services will be published in 2023.

Each category is subject to its unique methodology that is elaborated on in its own document. All calculations are in line with the Greenhouse Gas Protocol; used for management purposes; in line with our Science Based Targets initiative submission; and subject to reasonable assurance by the external auditors of Philips.

Scope 3

Category 6
Business travel

Category 9
Downstream transportation and distribution

Category 11
Use phase

Scope 3 — Category 11: Use of sold products

1) Introduction

Energy consumption during the use phase of sold products constitutes the majority of Philips' environmental impact. This document will further explain the methodology used to calculate these emissions, which is done in conjunction with the Environmental Profit & Loss (EP&L) statement.

2) Methodology

There are three key variables that determine the lifetime emissions of a product:

i) the lifetime energy use per product
ii) the number of products sold per country
iii) the country-specific emission factors as determined by EcoInvent

$$\text{Emissions (tonnes } CO_2e) = \sum_{\substack{i=1 \\ j=1}}^{\substack{\text{All energy consuming devices} \\ \text{All countries}}} L_i \times S_{ik} \times \frac{E_k}{1{,}000{,}000}$$

- L_i = Lifetime energy usage of product i (kWh)
- S_{jk} = Number of units of product i sold in country k
- E_k = Country-specific emission factors (g CO_2e/kWh)

It should be noted that the energy consumption during the full lifetime of the products sold is included in the emission calculation of the year of sale. Yearly emission levels are therefore overstated, as they also include the future energy consumption of the products sold at today's grid emission factors (whereas grids are expected to become greener). We decided to include the entire lifetime energy use because the life cycle impact is 'generated' in the year of sale. Without the sale of the respective product, no future emissions would be produced.

Moreover, reference products are used as a proxy for a group of similar products with similar use patterns and energy efficiency (grouped according to business group and cluster). On a monthly basis, sold products are mapped to corresponding reference products via their material IDs. On a quarterly basis, product sales are then validated to ensure the high-selling products are classified as reference products with unique energy consumption data.

2.1) Lifetime energy use

For the lifetime energy use, we apply an average use-case scenario that is dependent on the power consumption, duration, and frequency of use. This is the same for Personal Health, Connected Care, and Diagnosis & Treatment products, with the distinction that a varying number of modes may apply.

For all healthcare diagnostic imaging equipment, we calculate the energy consumption according to the average use case. In 2023, we plan to calculate the energy consumption according to the COCIR standard. This standard describes how a measurement should be carried out and what use case scenario to apply for the number of hours per day in ready-to-scan, standby, off and scanning mode. As stated in the EP&L methodology, 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.

For Personal Health products, we only consider the on, standby, battery-charging and off modes. We determine the duration in the different modes by leveraging our internal expertise and consulting our product experts. Market research is also used to identify consumer use.

The total lifetime energy use per mode is set by: switching the device into that mode, giving time to stabilize in that mode, and then measuring the average power consumption of the product in that mode for a specified time. For the scan mode, this involves applying the scan and entering the average measured power consumption over time.

$$E = \text{Energy usage per day (kWh)} = \sum_{i=1}^{\text{All relevant modes}} \frac{P_i \times H_i}{1000}$$

- P_i = Power consumption in mode I (watt)
- H_i = Hours per day in mode i (the sum of all H_i must equal 24 hours)

In the case that an underlying Connected Care or Diagnosis & Treatment product also includes a battery, the battery-charging time and average power consumption during battery-charging are included as separate modes in our energy-use calculations. The change in battery efficiency over the product's lifetime is not considered, and it is assumed that battery-charging cannot happen while the product is on or in scan mode via a power outlet.

For Personal Health products that are battery powered, only the off and battery-charging modes are of interest. This is because it is estimated that electricity is only consumed during battery-charging. It is not assumed that battery efficiency changes over the product's lifetime.

The total energy impact is determined by the number of days that the underlying product is used per year, and the total lifetime. For the frequency of use, we apply a number based on market research and expert review. The total lifetime is based on our guaranteed service lifetime. For Personal Health equipment, the applied lifetime is aligned with the lifetimes as used in the Lives Improved calculation. These inputs are then used to finalize total lifetime energy usage.

Lifetime energy usage (kWh) = E × D × L

- E = Energy usage per day (kWh)
- D = Number of days the product is used per year
- L = Lifetime in years

2.2) Number of products sold in country

The number of products sold per country is determined by leveraging the Philips Management Accounting (PMA) database that records sales per country. It is assumed that the products are used in the country of sale meaning cross border movement is negligible. The reference products are mapped to the PMA data via Material IDs monthly. For more information on this process, please refer to the EP&L methodology.

2.3) Country-specific emission factors

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. These country-specific emission factors are derived from EcoInvent, and we apply these factors in conjunction with the EP&L calculations.

EcoInvent regularly publishes life cycle emission factors for electricity grids in various countries. This includes upstream processing, production of electricity, infrastructure related to the electricity production plant, and production and distribution losses. The decision to use EcoInvent was made in response to the Greenhouse Gas Protocol, requiring that life cycle emission factors be considered. Furthermore, this decision has streamlined our emission reporting across our EP&L. For those countries without an emission factor, the market-specific emission factor is first used, and if that is not available, then we use the world average.

[1] ecoinvent Database – ecoinvent. (2022). Retrieved from https://ecoinvent.org/the-ecoinvent-database/