The Dutch WEEE Flows

An overview of WEEE Flows in the Netherlands in 2024

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Colophon

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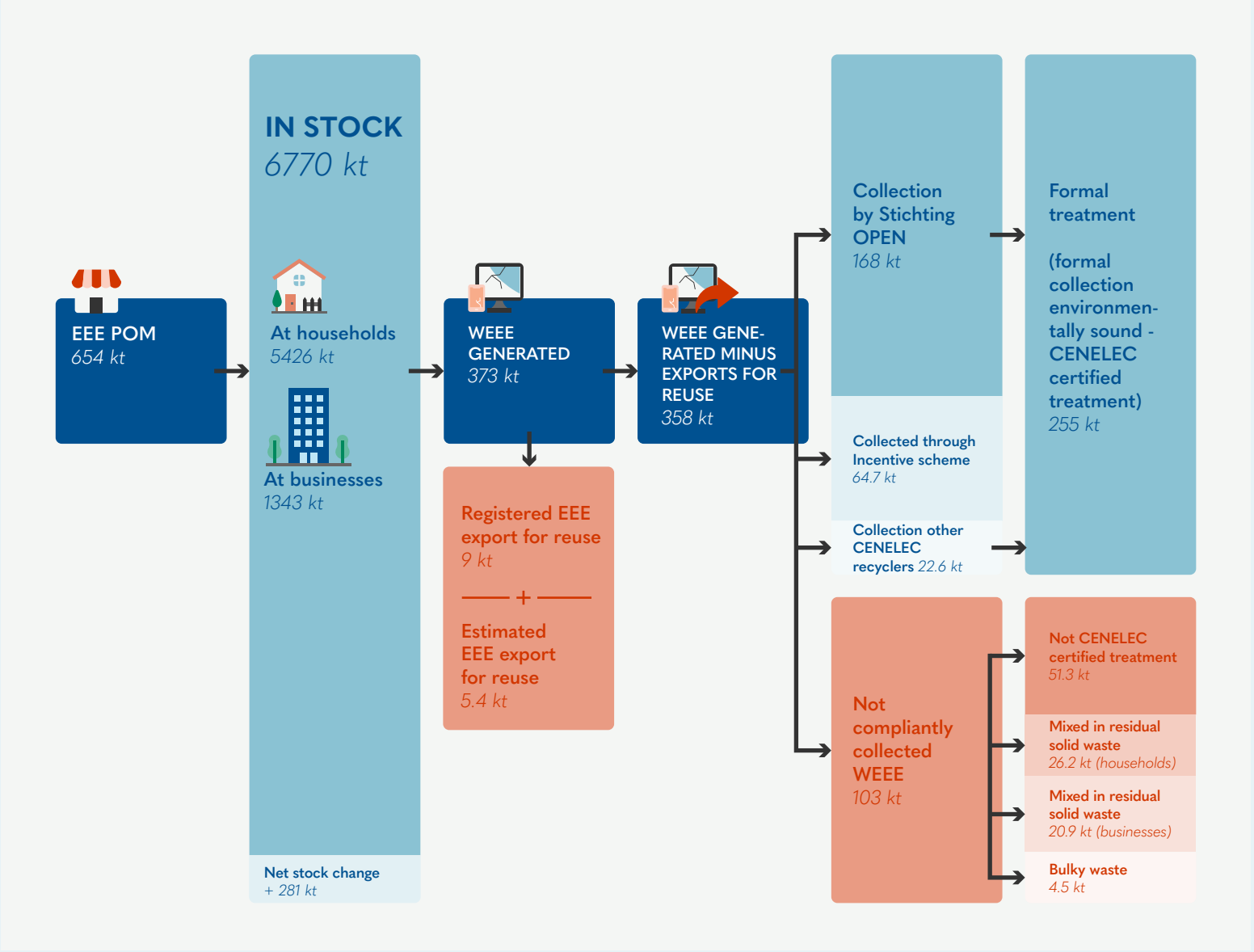
Executive Summary

Produced on behalf of Stichting OPEN, this report gives an overview of waste electrical and electronic equipment (WEEE) flows in the Netherlands in 2024. It presents up-to-date figures on electrical and electronic equipment (EEE) placed on the market (POM), WEEE Generated, and WEEE collection and treatment, along with trends over time. The assessment updates earlier *Dutch WEEE Flows* studies, including those published in 2012 and 2020 (Huisman et al., 2012; Baldé et al., 2020a).

The analysis underpinning this report draws on multiple data sources. These have been integrated in line with an internationally recognised methodology for constructing WEEE statistics, as outlined in the *E-waste Statistics Guidelines* (Baldé et al., 2015; Forti, Baldé and Kuehr, 2018; Lysaght et al., 2026). Figure 1 presents an overview of the flows in the Netherlands in 2024 quantified as part of this report, *The Dutch WEEE Flows 2024*. Each flow, including its underlying data sources and calculation steps, is described in further detail in the report.

FIGURE 1. OVERVIEW OF THE NETHERLANDS WEEE FLOWS, 2024



EEE POM

In the Netherlands, all producers (and importers) of EEE are required to report on the quantities they first place on the market and, in proportion to this, pay a waste management fee financing collection and appropriate end-of-life treatment. In 2024, 654 kilotonnes (kt) of EEE were reported as having been placed on the market in the Netherlands[1], a decrease of 21.5% compared to a peak of 834 kt in 2023. This fall was driven largely by a drop in the sales of photovoltaic (PV) panels. When excluding PV panels, EEE POM was broadly stable between 2023 and 2024, having increased slightly from 502 kt to 505 kt (0.5%).

EEE POM in 2024 nevertheless remained approximately a third (32.2%) higher than in 2018, reflecting a general upward trend in the consumption of electronic goods in the Netherlands over the longer term. This has been driven particularly by sales of PV systems, heat pumps, air conditioners, and electric bicycles in recent years. This trend is expected to lead to higher levels of WEEE Generated in the future, as increases in EEE POM translate into waste depending on product lifetimes. Large equipment accounted for the greatest share of EEE POM in 2024 at approximately 389 kt, followed by small equipment (103 kt) and temperature exchange equipment (102 kt). The three-year average POM for the Netherlands was 807 kt (2021-2023).

EEE Stocks

The total stock of EEE in the Netherlands reached 6.8 Mt in 2024, the highest level recorded to date. This was equivalent to 377 kg per person or 806 kg per household. Of this total, an estimated 5.4 Mt of EEE could be found in households, while 1.3 Mt was held by businesses. The estimated quantity of EEE hoarded in households in 2024 was approximately 645 kt. These hoarded products are no longer in active use but remain stored, reducing their chance for (preparation for) reuse and delaying their entry into the waste stream. The scale of EEE hoarded in businesses and the public sector is currently unknown. Overall, the total stock in 2024 represented an increase of 53.4% compared to 2018. Recent stock growth has been driven primarily by products that are not direct replacements, for example, PV panels and electric bicycles, therefore contributing to a net increase in the total stock rather than substituting for existing items.

WEEE Generated

In the Netherlands, WEEE Generated stood at an estimated 373 kt in 2024. This represents the maximum amount of EEE exiting the stock that could become available for end-of-life management or export of EEE for reuse. WEEE Generated in 2024 was 11.6% higher compared with 2018, and 2.4% higher than in 2023. A level of WEEE Generated lower than EEE POM contributes to the continued expansion of stocks of EEE goods seen in the Netherlands at present.

WEEE Formal Collection and Recycling

WEEE is regulated at the European Union (EU) level under Directive 2012/19/EU, which establishes minimum requirements for collection, recycling, and recovery. The Directive stipulates performance-based collection targets for EU Member States of either 65% of the average weight of EEE POM in the three preceding years, or 85% of WEEE Generated in the current year. In 2024, the Dutch State Secretary for Infrastructure and Water Management informed the House of Representatives that compliance would be assessed primarily on the basis of the WEEE Generated target. This method accounts for product lifetimes in alignment with circular economy objectives such as repair, reuse, and lifetime extension, and is less sensitive to short-term fluctuations in EEE POM.

[1] Corresponding to 36.5 kg per inhabitant.

Total WEEE collection within the formal system in the Netherlands amounted to 255 kt in 2024, compared with 184 kt in 2018. This represented a collection rate of 68.5% of WEEE Generated in 2024, up from approximately 50% in 2018. Even when compared with 2023, WEEE collection was almost a fifth (16.4%) higher. Notwithstanding these increases, collection fell short of the 85% target by 61,695 tonnes in 2024. To better estimate the volume of WEEE available for domestic treatment, exports of EEE for reuse need to be deducted from WEEE Generated. The National (W)EEE Register (NWR) reported that 9 kt of EEE were exported for reuse in 2024; however, this is likely an undercount as not all reuse of EEE exports are captured in the reporting (NWR, 2025). In light of this, this report adopts a higher estimate of 14 kt of exports of EEE for reuse in 2024. After subtracting for these exports, the effective collection rate in 2024 was 71.2% (see Table 1).

In 2024, the majority of compliant WEEE collection and treatment was undertaken directly by Stichting OPEN (168 kt; 66%), followed by being captured through an incentive scheme (65 kt; 25%) also managed by Stichting OPEN. Additional volumes were directly reported by CENELEC-compliant recyclers to the NWR (23 kt; 9%).

TABLE 1. COLLECTION RATES, BY METHOD, 2024, %

INDICATOR	VALUE %
Collection / WEEE Generated	68.5
Collection / WEEE Generated (adjusted for reuse exports of EEE)	71.2
Collection / EEE POM (3-year average 2021-2023)	31.7
Collection / EEE POM (3-year average 2021-2023, excluding PV panels)	49.3

EU recycling and recovery targets were exceeded across all reported categories in 2024, with an overall material recycling rate of 81% and an overall recovery rate of 99%.

Leakage Flows

Although there has been a long-term increase in formal or CENELEC-compliant WEEE recycling in the Netherlands, leakage flows remain a non-negligible component of the WEEE system at present. In 2024, an estimated 103 kt of WEEE Generated was not treated within the formal collection and treatment system. This consisted of WEEE mixed in metal scrap (51 kt), which although going on to be recycled is not necessarily treated in a CENELEC-compliant manner, and WEEE disposed of in the residual waste stream (52 kt). WEEE in the residual waste stream was found primarily in household waste collected kerbside (26 kt; 51%), followed by residual waste from businesses (21 kt; 41%), and bulky waste (5 kt; 9%).

Overview

Levels of EEE POM and WEEE Generated in the Netherlands have continued to rise since the last *Dutch WEEE Flows* report was published in 2018, highlighting the continued relevance of this growing waste stream. Since 2010, there has been a substantial increase in properly treated WEEE in the Netherlands, reflecting ongoing efforts to expand environmentally sound management. The 'one third, one third, one third' split between compliantly recycled, non-compliantly recycled, and leakage flows observed in 2010 improved to 'half, one quarter, one quarter' by 2018, and now stands at 'two thirds, one sixth, one sixth' in 2024. While representing significant progress, a non-negligible share of WEEE continues to be dealt with outside of the formal collection system in the Netherlands at present, including entering residual waste (see Figure 2). Continued efforts to reduce leakage flows are needed to further align system performance with the targets set out under Directive 2012/19/EU.

FIGURE 2. BREAKDOWN OF WEEE GENERATED BY ROUTE IN 2024, KT/%

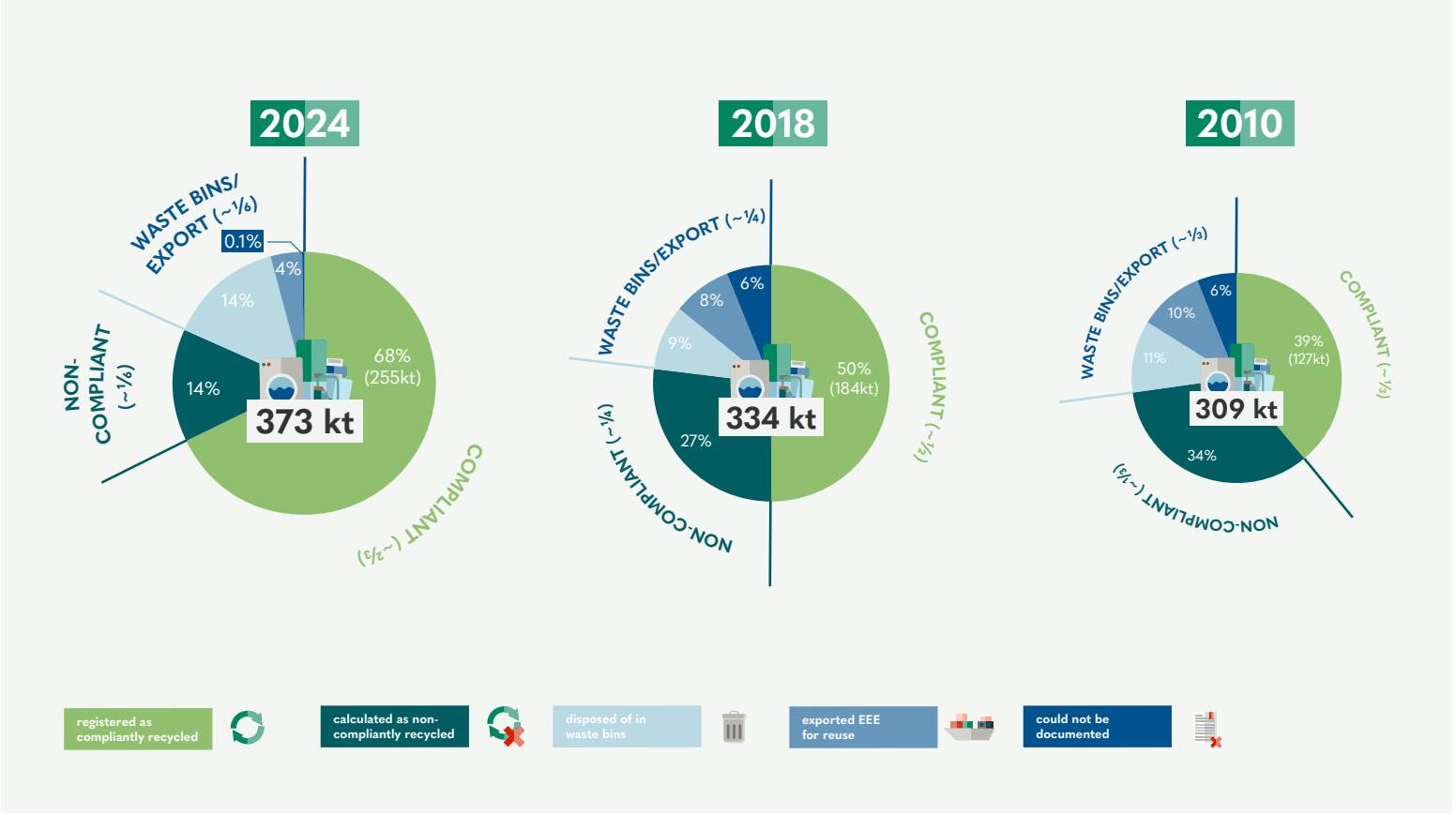


Table 2 presents the key flows quantified as part of this report, broken down by product category.

TABLE 2. DUTCH WEEE FLOWS IN 2024 BY CATEGORY, KT

Variable	Temperature exchange equipment	Screens and monitors	Lamps	Large equipment	Small equipment	Small IT and telecommunication equipment	Total
EEE POM	101.8	31.5	2.9	389.0	103.2	26.1	654.5
WEEE Generated	63.1	24.5	3.6	146.6	103.8	31.4	373.1
Export EEE for Reuse	0.1	1.2	0.0	5.2	2.4	5.5	14.4
WEEE Collected	42.9	14.1	1.4	94.1	71.9	31.0	255.4
Estimated Non-Compliant Recycling	18.8	6.5	1.9		24.2[a]		51.3
WEEE in Waste Bins (Residual waste from households, businesses and residual bulky waste)	1.2	2.8	0.4	6.3	36.8	4.6	51.6

[a] There is a negative mass balance for small equipment and small IT and telecommunication equipment. This is likely due to reporting inconsistencies between those categories and large equipment in WEEE Collected. Therefore, these groups have been merged.

LIST OF ABBREVIATIONS AND DEFINITIONS

Abbreviation	Description
CENELEC	European standard for the treatment, including preparation for reuse, of WEEE.
CN	Combined Nomenclature
CRT	Cathode Ray Tubes
EEE	Electrical and Electronic Equipment
EPR	Extended Producer Responsibility
EU-6	Classification of electrical and electronic equipment under the six categories as set out in Annex III of the Directive 2012/19/EU on WEEE
kt	Thousand metric tonnes (1,000,000 kg)
Lifetime	The period from EEE POM to WEEE: this includes the first use of the equipment, any second-hand use and period in dormancy (the time during which non-functioning or unused equipment is stored at households or businesses).
Mt	Million tonnes = 1,000,000 tonnes = 1,000,000,000 kg
NWR	National (W)EEE Register
POM	Placed on the Market

LIST OF ABBREVIATIONS AND DEFINITIONS

Abbreviation	Description
PRO	Producer Responsibility Organisation
PV	Photovoltaic
SCYCLE	Sustainable Cycles Programme of the United Nations Institute for Training and Research
Stichting OPEN	Organisation for Producer Responsibility E-waste Netherlands
t	Metric tonne (1,000 kg)
UNITAR	United Nations Institute for Training and Research
UNU-KEYs	WEEE classification established by the United Nations University
WEEE	Waste Electrical and Electronic Equipment
WEEE Generated	The amount of discarded electrical and electronic products due to consumption within national territory in a given reporting year, prior to any collection, reuse, treatment, or export.
WEEELABEX	WEEE LABel of EXcellence: set of harmonized standards regarding collection, transport, and recycling of WEEE.

Introduction

What is WEEE?

Electrical and electronic equipment (EEE) refers to devices that depend on electric currents or electromagnetic fields to function properly, as well as equipment used for the generation, transfer, and measurement of such currents and fields. When EEE, or its components, are discarded by the holder without the intention of reuse, they become waste electrical and electronic equipment (WEEE), also known as e-waste. EEE/WEEE covers a wide range of products, including large household appliances, information and communication technology equipment, consumer electronics, and lighting.

Current status in the Netherlands

Policy context and regulatory framework

According to UNITAR statistics, across the countries making the European Union (EU) plus Switzerland, Iceland, Norway and the United Kingdom, 10.7 million tonnes (Mt) of WEEE were generated in 2022 (Iattoni et al., 2025). These volumes are expected to reach between 12.5 and 19 Mt by 2050 (Iattoni et al., 2025). WEEE contains a complex mixture of valuable materials, including metals and critical raw materials, but also hazardous substances that can pose risks to the environment and human health if not properly treated.

Across EU Member States, WEEE is regulated under Directive 2012/19/EU (the "WEEE Directive"), which establishes minimum requirements for collection, treatment, and recovery. At present, the Directive sets performance-based collection targets of either 65% of the average weight of EEE placed on the market (POM) in the three preceding years or 85% of WEEE Generated in the same year. It also establishes requirements for registration and reporting (Article 16), under which producers must report annually on quantities of EEE POM and WEEE treated.

National implementation in the Netherlands

In the Netherlands, the WEEE Directive is implemented through the *Regeling afgedankte elektrische en elektronische apparatuur* or "WEEE Regulation" (Ministerie van Infrastructuur en Waterstaat, 2014). Under this framework, producers and importers are responsible for financing the collection and treatment of EEE at end-of-life, in line with the principle of extended producer responsibility (EPR). Since December 2024, compliance with collection targets in the Netherlands is assessed primarily against a collection target of 85% of WEEE Generated in a given year, as confirmed by the State Secretary for Infrastructure and Water Management. For international comparability, performance is also reported against the alternative benchmark of 65% of the average EEE POM over the preceding three years, as agreed with the Ministry and Rijkswaterstaat. Both methods have been embedded in the WEEE Regulation since 2019; however, the WEEE Generated approach is now the primary criterion.

Producer responsibility system and institutional setup

Stichting Organisation for Producer Responsibility E-waste Netherlands (Stichting OPEN) implements the statutory extended producer responsibility for WEEE on behalf of all producers and importers of EEE in the Netherlands. Stichting OPEN operates under the Waste Management Contribution Agreement (Afvalbeheerbijdrageovereenkomst, ABBO), for which a generally binding declaration (algemeen verbindend verklaring, AVV) entered into force on 1 March 2021 (Ministerie van Infrastructuur en Waterstaat, 2021).

As a result:

- All producers and importers of EEE are required to participate in Stichting OPEN.
- Stichting OPEN reports on behalf of all producers and importers.

Reporting and data management

The National (W)EEE Register (NWR) is responsible for maintaining the register referred to in Article 16 of the WEEE Directive. The register includes producers, CENELEC compliant operators, and exporters of EEE for reuse. Under the WEEE Regulation, Stichting OPEN reports annually to the NWR on behalf of all producers, including data on EEE placed on the market and WEEE collected and treated.

Purpose of this report

A comprehensive assessment of Dutch WEEE flows was first conducted for the reference year 2010 (Huisman et al., 2012). This formed the basis for subsequent national and international methodologies, including the EU common methodology and global WEEE statistics frameworks. The study was updated in 2020 for the reference year 2018 (Baldé et al., 2020a), highlighting increasing levels of WEEE collection and environmentally sound treatment in the Netherlands.

This report, which is the latest in the series, presents the most recent statistics on EEE and WEEE in the Netherlands, providing an overview of the situation in 2024. It covers key variables including EEE POM, EEE stocks, WEEE Generated, collection and recycling, preparation for reuse, and WEEE entering the residual waste stream.

Methodology

Classifications

A wide range of EEE products enter the market in the Netherlands each year, in addition to those already in circulation. To produce consistent and comparable statistics on EEE POM and WEEE, these products must be grouped into standardised categories that allow key parameters such as product weights and lifetimes, to be applied consistently. In this report, the UNU-KEYs classification, which fulfils this function, is used as the primary framework for compiling statistics and performing calculations.

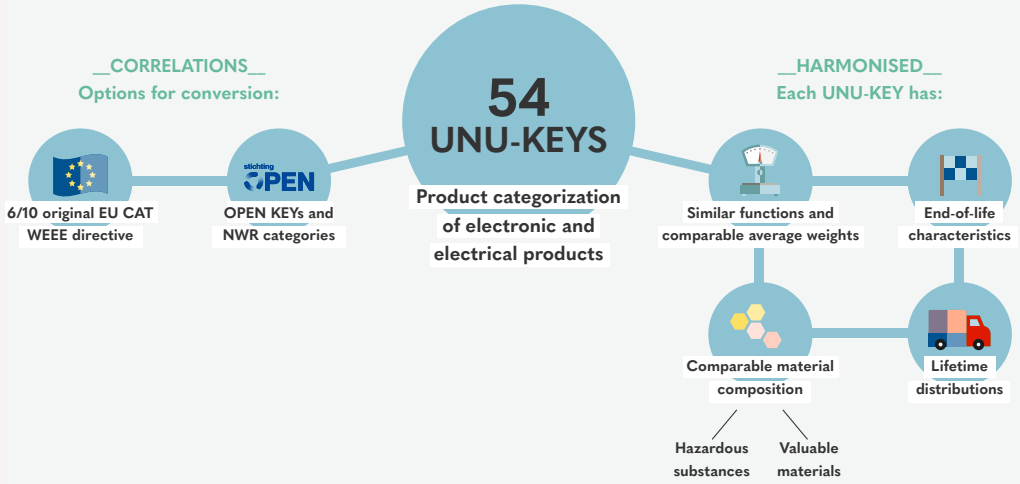
THE UNU-KEYS CLASSIFICATION

The UNU-KEYs comprise 54 product categories (as part of UNU-KEYs v1) and are used within the EU common methodology under Article 7 of the WEEE Directive to calculate EEE POM and WEEE. The categories are defined in such a way that products within each group share similar characteristics, including average weight, material composition (including hazardous substances and valuable materials), end-of-life behaviour, and lifetime distributions. This structure makes the classification particularly suitable for constructing consistent WEEE statistics and for robustly quantifying stocks and flows. The E-waste Statistics Guidelines Edition 3 adjusts and expands the classification to 57 UNU-KEYs.

While calculations in this report are based on the UNU-KEYs, results are primarily presented using the six categories of the WEEE Directive[2], as well as the 'OPEN-KEYs' classification applied in the NWR. This ensures that the outputs are aligned with commonly used reporting formats and are directly comparable with officially reported data[3].

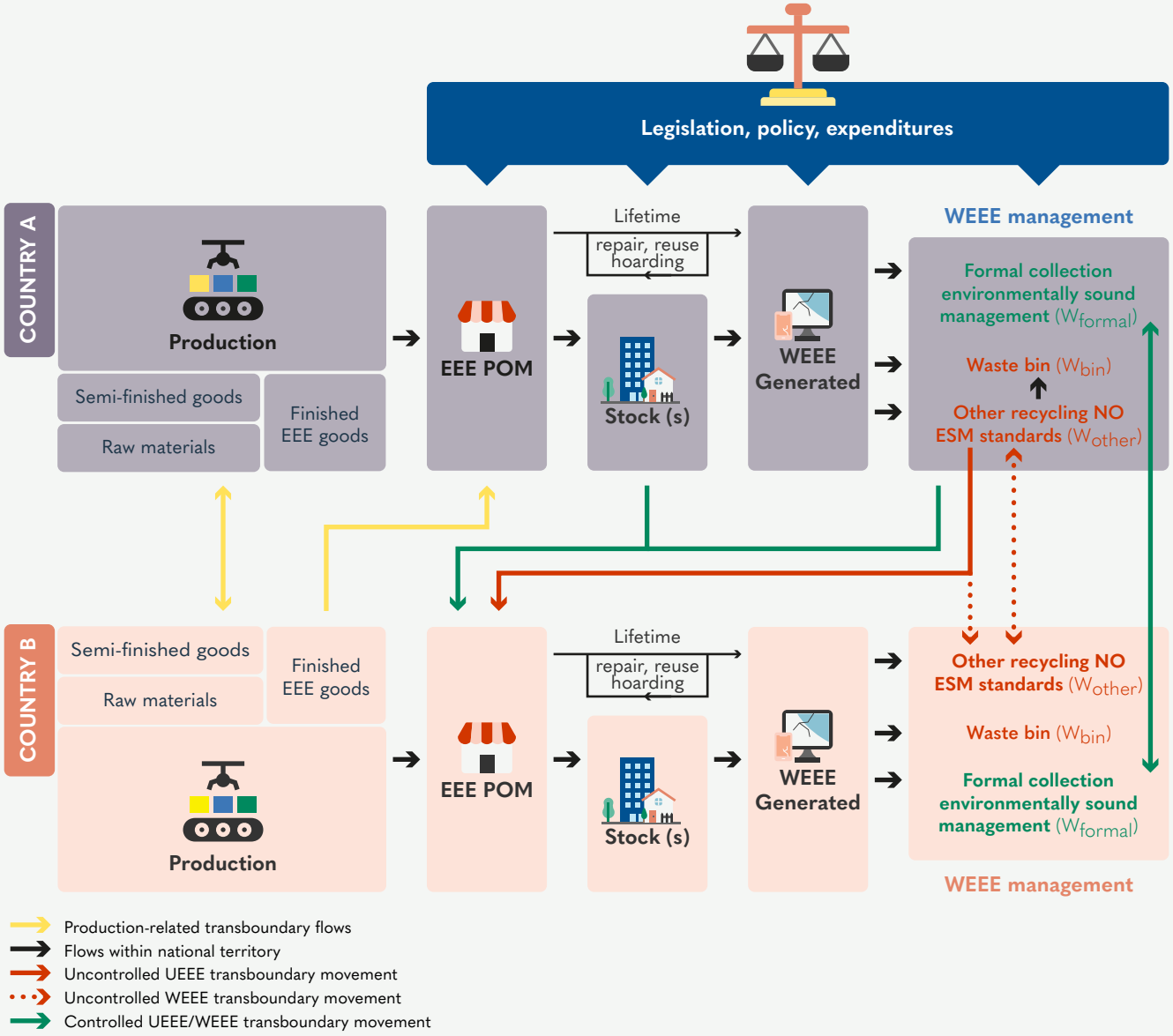
Measurement framework

This study integrates multiple data sources within a mass-balance framework, in line with internationally recognised methodologies for WEEE statistics (Baldé et al., 2015; Forti, Baldé and Kuehr, 2018; Lysaght et al., 2026). The measurement framework is implemented in four stages (see Figure 3). First, **EEE POM** is compiled from production and trade data, or sourced from national registers. Second, these inflows accumulate in **the stock**. Third, **WEEE Generated** is estimated by linking POM to discards over time based on product lifetimes. Fourth and finally, WEEE flows are allocated across **end-of-life pathways**.



[2] In line with recent EU reporting practices, category 4 (large equipment) is split to distinguish PV panels from other large equipment.
[3] Descriptions of the entries making up these classifications, along with the correspondence tables, are provided in Annex 1.

FIGURE 3. OVERVIEW OF THE MEASUREMENT FRAMEWORK FOR WEEE STATISTICS



Data sources and calculation steps

EEE POM

EEE POM represents the quantity of final EEE goods entering the national market in a given year. In this study, POM is compiled at the level of the 54 UNU-KEYs. Two main approaches are used to estimate POM. For the historical time series up to 2013, POM is calculated using the apparent consumption method based on trade and domestic production data, calculated as:

$$POM(t) = Domestic\ production(t) + Imports(t) - Exports(t)$$

From 2014 onwards, POM is based on annual producer-reported data compiled by the NWR, forming the official basis for EEE POM in the Netherlands in accordance with Article 18(3) of the WEEE Regulation. Reported POM figures are adjusted on an ongoing basis to ensure they accurately reflect EEE entering the domestic market, including corrections for products subsequently exported. The NWR works on an ongoing basis to improve data quality and encourages reporting companies to perform checks. Stichting OPEN's monitoring is independently audited and verified, and the NWR considers these controls sufficient to ensure data accuracy and reliability.

Product lifetimes

After being placed on the market, EEE remain in use within households, businesses, and the public sector before being discarded. Within the measurement framework, this period is referred to as the product lifetime or lifespan and includes both active use and periods of reuse and storage prior to entering the waste stream. In this study, lifetimes are represented using statistical distributions to capture variability in discard behaviour, in line with established WEEE modelling practice. Formally, the lifetime distribution $L^P(t,n)$ describes the probability that a product placed on the market in year t reaches end-of-life in year n. Lifetimes are modelled using the Weibull distribution, defined by a shape parameter, which determines the spread and skewness of discards over time, and a scale parameter, representing the characteristic lifetime.

Baseline parameters used in this study are based on previously developed and validated estimates for the Netherlands. For a subset of UNU-KEYs, these parameters were further refined through calibration against national stock and WEEE data. The categories for which lifetimes were adjusted include photovoltaic (PV) panels (0002), leisure equipment (0703), other cooling equipment (0112), and cathode ray tube monitors and TVs (0308, 0407). Stock estimates were primarily derived from GfK reports. WEEE data for PV panels was sourced from a 2025 TNO study conducted for Stichting OPEN, and as part of the calibration, collection data from Stichting OPEN was used (TNO, 2025). Calibration involved optimising lifetime parameters to minimise deviations between modelled and observed stock and WEEE. Where sufficient data were available and results were plausible, this led to updated lifetime assumptions that better reflect observed discard patterns and stock dynamics. For selected UNU-KEYs (0111 and 0113), historic POM data were adjusted as part of the calibration process.

Stock

Within the measurement framework, the stock represents the quantity of equipment present in households, businesses, and the public sector at a given point in time. It includes both functioning and non-functioning products. The stock is modelled as the accumulation of historical POM flows, net of outflows to WEEE Generated. Stock calculations are implemented within the WEEE Generated model and subsequently disaggregated into household and business sectors using proportions derived from a study undertaken by FFACT (FFACT, 2023). The share of household stock estimated as being 'dormant' is calculated based on the same proportion as in the FFACT study.

WEEE Generated

After a period of use and, in some cases, storage, EEE goods reach end-of-life and become waste. Within this framework, WEEE Generated refers to the annual quantity of WEEE arising within a territory before any collection, treatment, export of EEE for reuse, or disposal occurs, and excludes imports of used or waste equipment. It therefore represents the total domestic outflow from the stock. WEEE Generated is estimated using a lifetime-based modelling approach that combines historical POM data with product-specific lifetime distributions. For each UNU-KEY, the quantity generated in year ***n*** is calculated as the sum of POM in all previous years ***t***, weighted by the probability that those products reach end-of-life in year ***n***. As such, WEEE Generated reflects the combined effects of historical sales and lifetime dynamics.

To assess sensitivity to lifetime assumptions, lifetime parameters were varied by ±30%. This analysis shows that moderate changes in lifetimes have a fairly limited impact on total WEEE Generated, while highlighting greater sensitivity for specific product categories. Reported WEEE data from the NWR differ from the WEEE Generated estimates used in this study in part due to the exclusion of equipment exported for reuse in the NWR figures.

Formal WEEE collection and recycling

Formal WEEE collection refers to WEEE collected and treated in compliance with national legislation and environmental standards (Baldé et al., 2022). These flows are not modelled but measured directly using administrative data from the NWR and reporting under the AVV system. In the Netherlands, formal collection data are primarily provided by Stichting OPEN. This includes both regular collection activities and targeted incentive schemes designed to capture specific waste streams that might otherwise remain outside the formal system. Additional properly treated volumes are reported by CENELEC-certified recyclers directly to the NWR. Total formal treatment is defined as the sum of these sources and provides the basis for assessing collection performance relative to WEEE Generated.

Leakage flows

Other recycling ("non-CENELEC")

"Other recycling" refers to WEEE that is not properly (i.e. by a CENELEC-certified treatment operator) treated. This typically includes equipment entering scrap metal or other recycling streams without being properly treated as WEEE. In this study, these flows are estimated as a residual, defined as the difference between WEEE Generated and all documented pathways, including formal collection, export of EEE for reuse, and WEEE disposed of in residual or general household and business waste. Evidence from sector studies and surveys of recyclers (e.g. MRF- and EERA-affiliated operators) indicates that a substantial share of WEEE enters such pathways.

WEEE mixed in residual waste

WEEE can enter residual waste streams when households, businesses, or other actors dispose of WEEE outside of dedicated collection systems. This includes both mixed residual waste (e.g. general waste bins) and bulky waste collection streams. Within this study, WEEE in residual waste is estimated using a combination of waste composition analyses and official waste statistics. Where available, composition studies provide estimates of the share of WEEE in these waste streams, which are combined with total waste quantities to derive WEEE tonnages (Stichting OPEN, 2025a).

Residual waste from households (kerbside collection)

For residual waste from households, estimates are based on detailed waste composition analyses commissioned by Stichting OPEN on an annual basis (Stichting OPEN, 2025b; Stichting OPEN, 2025c). These studies quantify the presence of WEEE in municipal residual waste and provide a breakdown across product categories. Category-specific estimates are derived and scaled using total household waste collection data (Stichting OPEN, 2025a).

Residual waste from businesses

For residual waste from businesses, WEEE in residual waste is estimated using data on total residual waste generated in the services sector, combined with an assumed WEEE share of approximately 1% in mixed waste based on composition studies (Rijkswaterstaat, 2025). As total waste data is only available up to 2022, values are extrapolated to 2024 based on a linear trend. Due to the absence of category-specific information, the distribution of WEEE across product groups is assumed to follow that observed for household residual waste.

Bulky waste

Bulky waste represents a separate residual pathway in which larger items are discarded through municipal bulky collection systems rather than general waste bins. Bulky waste is estimated based on dedicated studies commissioned by Stichting OPEN (Stichting OPEN, 2025a).

Exports of EEE for reuse

Exports of EEE for reuse refer to the transboundary movement of used electrical and electronic equipment intended for continued use or refurbishment in another country. Within the mass-balance framework, these flows are treated as an outflow from the stock prior to entry into the domestic waste management system. Exports for reuse are estimated using reported data from the NWR supplemented by complementary methods to account for underreporting[4]. Although reporting of exports for reuse has been mandatory since 2021, and has increased from 1,980 tonnes in 2021 to 9,188 tonnes in 2024, reported volumes remain below expected levels. Since 2022, inventories have been conducted to identify companies required to report, with results shared with the Dutch Human Environment and Transport Inspectorate for enforcement.

To address remaining gaps, additional estimates are derived using trade data, including price-based analyses to distinguish used equipment from new products, and supported by evidence from literature and sector studies. The UNU-ViE-SCYCLE (Baldé et al., 2020b) methodology is applied for these estimates. Together, these methods provide an indicative estimate of exports not captured in administrative data. Given data limitations, these estimates should be interpreted with caution; however, their inclusion is necessary to more accurately reflect the full set of pathways through which products exit the national system.

[4] This supplementation will no longer be permitted for volumes from 2025 onwards.

Results

This chapter presents the results for each WEEE flow in 2024, including a comparison with equivalent figures in 2018 and 2010.

EEE POM

In 2024, 654 kt of EEE were placed on the market in the Netherlands. This represents a substantial increase of 32.2% compared to 2018, reflecting sustained growth in the consumption of electronic goods (see Figure 4). Nevertheless, EEE POM had declined by 21.5% from a 2023 peak of 834 kt, driven primarily by a drop in PV panel sales, and to a lesser extent, temperature exchange equipment.

Stichting OPEN considers reported POM to capture the vast majority of products entering the market and actively works with product organisations to identify and register non-compliant producers. In 2024, these efforts included targeted outreach, collaboration with external platforms, and enforcement actions, resulting in 589 new registrations of producers and importers of EEE.

Large equipment accounted for the greatest share of EEE POM in 2024 at approximately 389 kt (59.4%), followed by small equipment (103 kt, 15.7%), temperature exchange equipment (102 kt, 15.6%), screens, monitors, and equipment containing screens (32 kt, 4.9%), small IT and telecommunication equipment (26 kt, 4%), and lamps (3 kt, 0.5%) (see Table 3).

FIGURE 4. EEE POM IN THE NETHERLANDS, BY WEEE DIRECTIVE CATEGORY (EU-6)

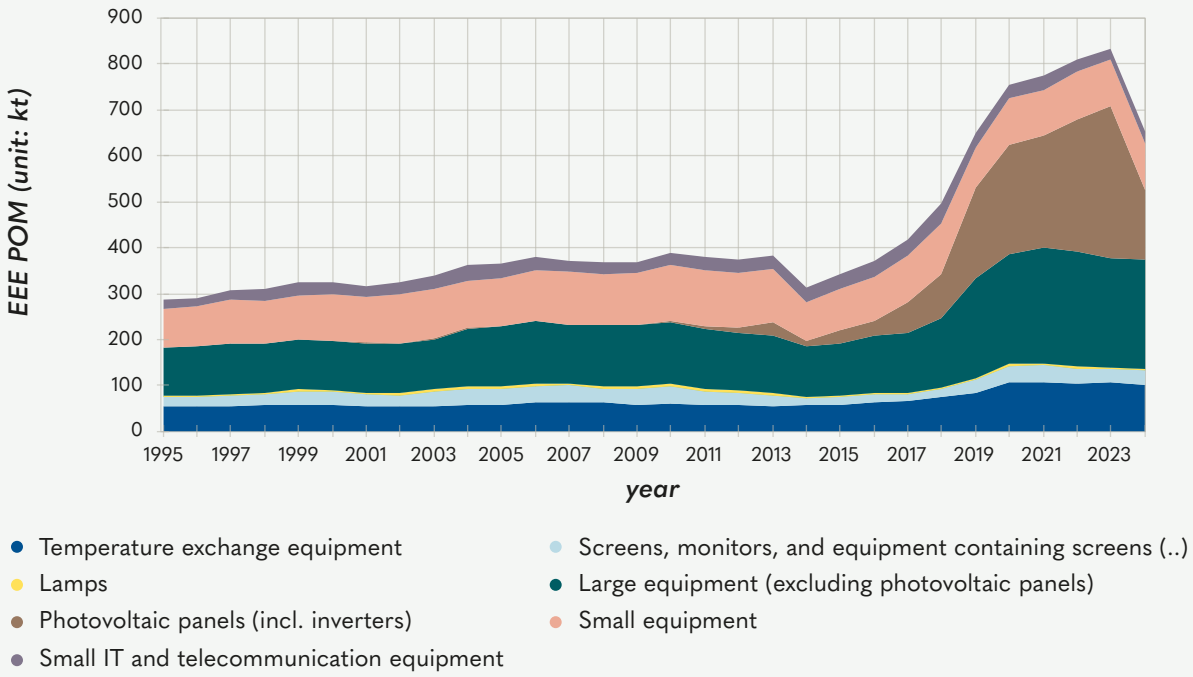


TABLE 3. EEE POM BY WEEE DIRECTIVE CATEGORY (TONNES)

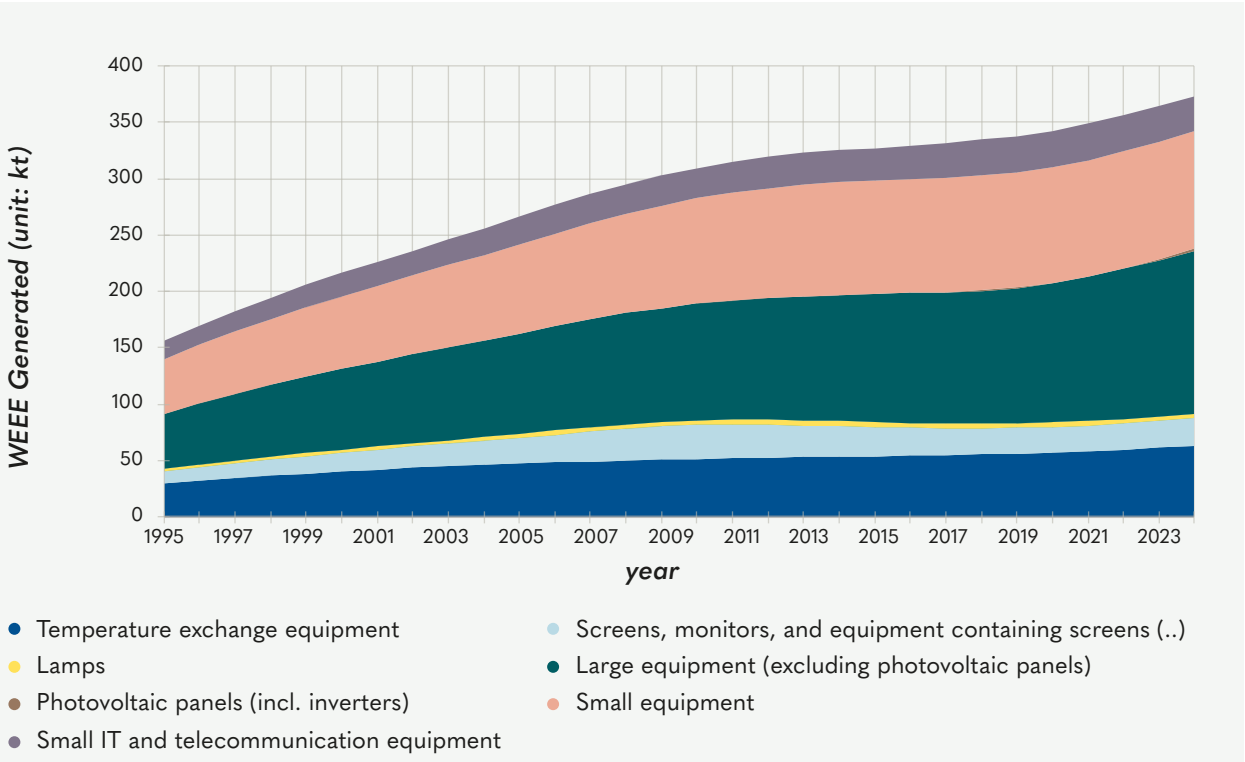
CATEGORY	2010	2018	2024
Temperature exchange equipment	60,966	73,771	101,823
Screens, monitors, and equipment containing screens (..)	37,736	19,087	31,525
Lamps	5,186	2,855	2,860
Large equipment (excluding photovoltaic panels)	133,381	150,560	239,287
Photovoltaic panels (incl. inverters)	1,932	96,285	149,665
Small equipment	122,699	109,569	103,196
Small IT and telecommunication equipment	26,441	43,025	26,097
TOTAL	388,341	495,152	654,453

Overall, the makeup of POM has shifted notably over time. PV panels have driven much of the recent volatility, rising from negligible levels in 2010 to a peak in 2023 before declining in 2024, while remaining a major contributor to POM. In contrast, large equipment (excluding PV panels) and temperature exchange equipment show steady long-term growth, and small equipment remains consistently significant. Lamps continue a declining trend to 2024, while screens and monitors show partial recovery since 2018.

WEEE Generated

In the Netherlands, WEEE Generated stood at an estimated 373 kt in 2024, or 57% of POM in the same year. The level of WEEE Generated in 2024 represents an increase of 11.6% compared to 2018 (see Figure 5).

FIGURE 5. WEEE GENERATED IN THE NETHERLANDS, BY WEEE DIRECTIVE CATEGORY (EU-6)



Sensitivity analysis indicates that WEEE Generated results are relatively robust to lifetime assumptions. Varying lifetimes by ±30% yields WEEE Generated estimates of between 348 and 405 kt in 2024 (–7% to +8% around the central estimate). Uncertainty is more pronounced for rapidly growing product categories, particularly PV panels.

Table 4 presents WEEE Generated by category. Most categories show gradual increases over time, although trends vary by product type. Large equipment (excluding PV panels) remains the dominant contributor, increasing from around 103 kt in 2010 to 145 kt in 2024. Small equipment is the second largest category and has remained broadly stable, while temperature exchange equipment has grown steadily. Screens and monitors declined between 2010 and 2018 and have only partially recovered to 2024, whereas lamps continue a gradual downward trend. WEEE from PV panels remains the smallest tonnage across these categories, but is increasing rapidly.

TABLE 4. WEEE GENERATED BY WEEE DIRECTIVE CATEGORY (TONNES)

CATEGORY	2010	2018	2024
 Temperature exchange equipment	51,280	55,226	63,067
 Screens, monitors, and equipment containing screens (..)	30,099	23,435	24,495
 Lamps	4,492	4,066	3,635
 Large equipment (excluding photovoltaic panels)	103,161	117,710	144,527
 Photovoltaic panels (incl. inverters)	61	357	2,086
 Small equipment	93,270	101,986	103,843
 Small IT and telecommunication equipment	26,878	31,566	31,417
TOTAL	**309,241**	**334,346**	**373,070**

Lifetimes

Calibration of the baseline lifetime parameters against national stock and WEEE data led to material changes in both the level and timing of WEEE Generated, with effects varying by UNU-KEY (see Figure 7). For emerging product groups such as PV panels (0002) and heat pumps (0112), updated lifetimes were calculated to be longer, thereby further delaying the onset of waste flows and reducing WEEE Generated in recent years. In contrast, for products undergoing technological substitution, such as CRT monitors (0308) and televisions (0407), calibrated lifetimes are shorter, resulting in earlier and more concentrated peaks followed by lower recent volumes. Revisions to historic POM for air conditioning-related UNU-KEYs (0111) and (0113) also impacted WEEE results.

Overall, the updated lifetimes (see Table 5) improve alignment between modelled and observed stock (Figure 6) and better reflect observed WEEE collection patterns (Figure 7).

TABLE 5. ORIGINAL AND UPDATED WEIBULL LIFETIME PARAMETERS BY UNU-KEY, NETHERLANDS

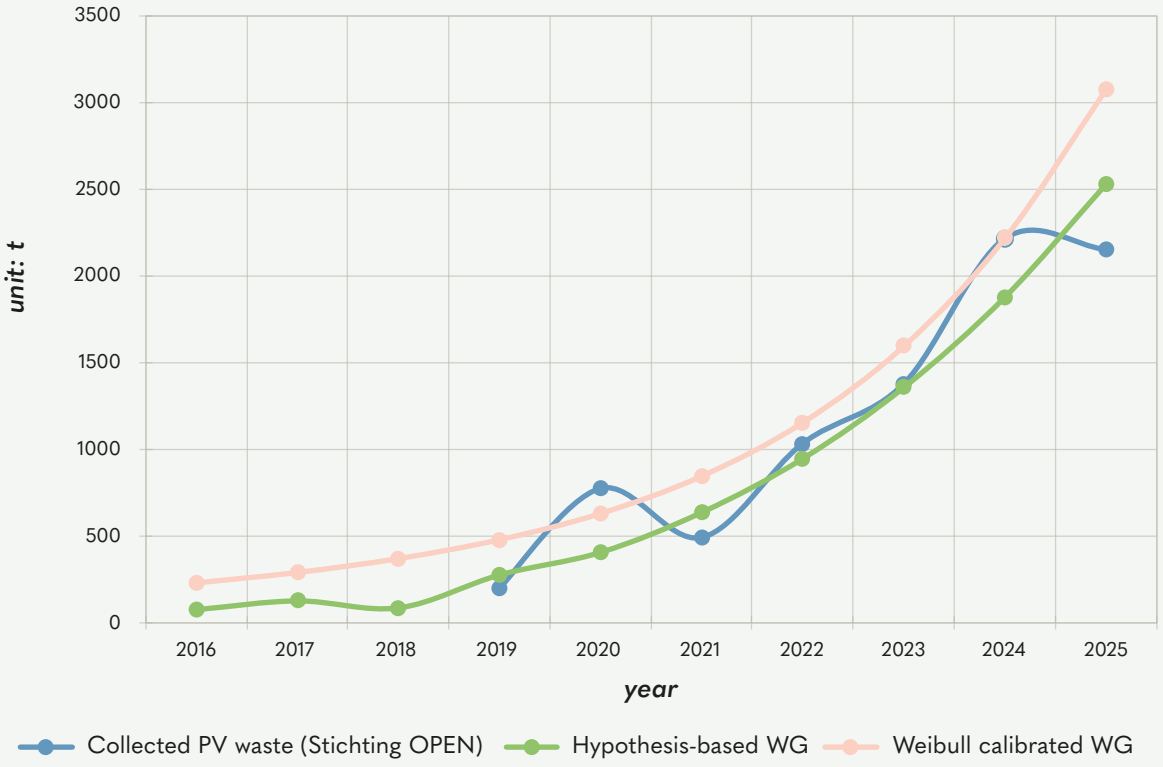
UNU-KEY	Original shape	Original scale	Updated shape	Updated scale	Calibration Method
0002 - Photovoltaic Panels (incl. inverters)	4.25	40.53	3.90	29.06 Scale varies by cohort (2015–2024 shown)	WEEE calib. (TNO)
0703 - Leisure equipment (e.g. sports equipment, juke boxes) excl. electric bikes	2.40	11.56	3.63	12.47	Stock calib.
0112 - Other Cooling equipment (e.g. dehumidifiers, heat pump dryers)	2.36	13.36	4.00	20.46	Stock calib. (CN adj.)
0308 - Cathode Ray Tube Monitors	1.40	15.94	2.60	10.41	Stock calib. (GfK)
0407 - Cathode Ray Tube Televisions (TVs)	2.49	12.08	3.00	pre: 13 post: 5.7 (Transition: 2004)	Two-regime stock calib. (GfK)

FIGURE 6. STOCK COMPARISON (BASELINE VS UPDATED) FOR SELECTED UNU-KEYS, UNIT: ITEMS

FIGURE 7. WEEE GENERATED COMPARISON (BASELINE VS UPDATED) BY UNU-KEY, UNIT: KT

[a] The lifetime distribution for this UNU-KEY was updated based on the analysis of E-bikes'

FIGURE 8. PV WEEE GENERATED ESTIMATES IN THE NETHERLANDS: COMPARISON OF WEIBULL-CALIBRATED WEEE GENERATED, HYPOTHESIS BASED WEEE GENERATED (TNO), AND STICHTING OPEN WASTE COLLECTION



EEE Stocks

In the Netherlands, the total EEE stock was an estimated 6.8 million tonnes (Mt) in 2024, the highest level to date (see Figure 9), representing an increase of 53.4% compared to 2018. Using proportions derived in a 2023 FFACT study, approximately 5.4 Mt (80%) is held in households and 1.3 Mt (20%) in businesses. The stock corresponds to approximately 377 kg per person or 806 kg per household, highlighting the scale of EEE accumulation in the Netherlands. An estimated 645 kt of equipment is thought to be hoarded in households in 2024, thereby delaying entry into the waste stream and minimising the potential for (preparation for) reuse. Stock growth in recent years has been driven primarily by products that add to, rather than replace, existing equipment, such as PV panels and electric bicycles.

FIGURE 9. EEE STOCKS IN THE NETHERLANDS, BY WEEE DIRECTIVE CATEGORY (EU-6)

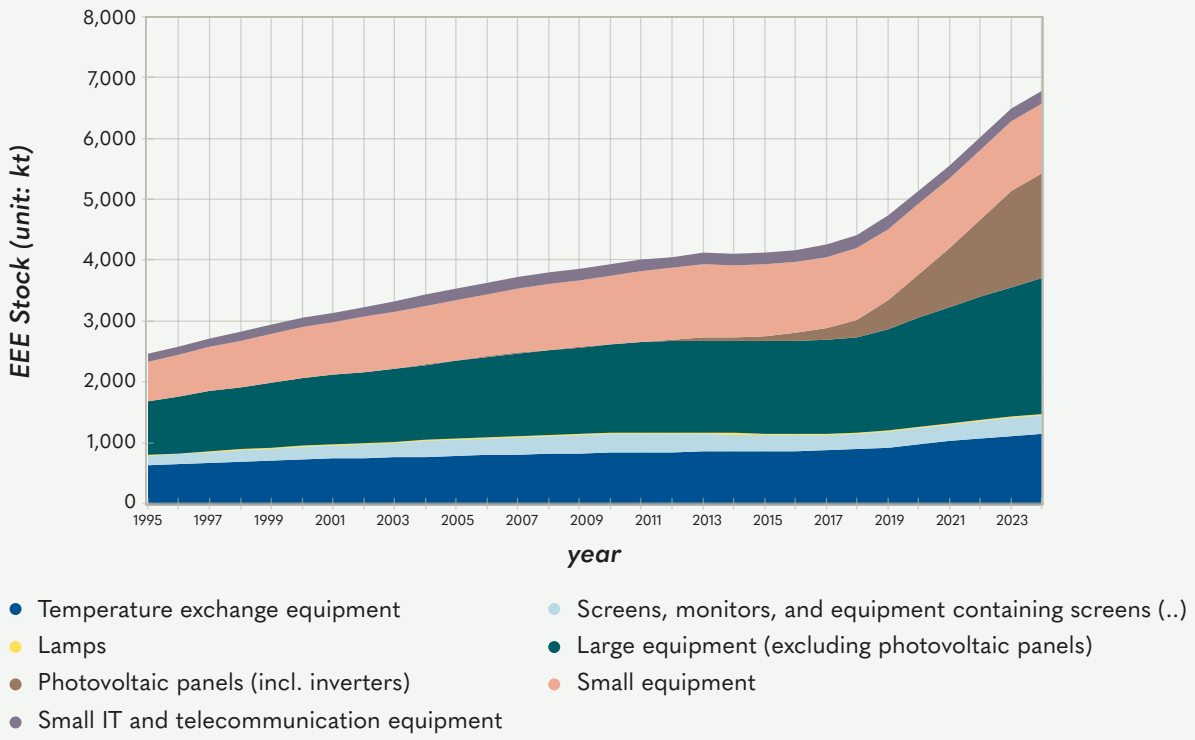


Table 6 shows EEE stocks by category. Large equipment (excluding PV panels) remains the dominant category, followed by small equipment, which has remained broadly stable. Temperature exchange equipment has shown steady growth, while PV panels account for the most pronounced increase, rising from negligible levels in 2010 to over 1.7 Mt in 2024. In contrast, small IT equipment has declined slightly since 2018, while lamps remain marginal. Screens and monitors have shown a modest increase since 2018 following a decline between 2010 and 2018.

TABLE 6. EEE STOCK BY WEEE DIRECTIVE CATEGORY (TONNES)

CATEGORY	2010	2018	2024
 Temperature exchange equipment	836,999	895,264	1,153,346
 Screens, monitors, and equipment containing screens (..)	299,858	251,138	304,149
 Lamps	24,783	19,443	18,724
 Large equipment (excluding photovoltaic panels)	1,452,948	1,569,752	2,219,615
 Photovoltaic panels (incl. inverters)	8,702	287,372	1,727,308
 Small equipment	1,125,120	1,171,756	1,148,503
 Small IT and telecommunication equipment	186,228	217,477	197,815
TOTAL	3,934,637	4,412,201	6,769,459

Exports of EEE for reuse

Exports of EEE for reuse refer to used electrical and electronic equipment exported for continued use or refurbishment abroad. In 2024, 60 producers reported such exports to the NWR. Reported exports amounted to approximately 9 kt; however, reporting remains incomplete. To account for this, an additional 5.4 kt is estimated by NWR using complementary methods, resulting in a total of approximately 14.4 kt of exports of EEE for reuse in 2024. These exports reduce the volume of WEEE requiring domestic treatment and should be deducted from WEEE Generated when assessing collection performance. After accounting for exports for reuse, the effective collection rate increases to 71.2%. Given data limitations, these estimates should be interpreted with caution.

WEEE Collection

Overall, there has been a sustained increase since 2010 in the quantities of compliantly collected and treated WEEE in the Netherlands, alongside a reduction in non-compliant collection and WEEE disposed of in residual waste streams. Total WEEE collection within the formal collection system in the Netherlands in 2024 amounted to 255 kt, up from 184 kt in 2018.

Collection by Stichting OPEN

In 2024, the majority of compliant WEEE collection and treatment was undertaken directly by Stichting OPEN, with this amounting to 168 kt (66% of total collection). Table 7 shows this collection broken down by category. Collection by Stichting OPEN is coordinated via the MyOPEN platform, which tracks logistics flows and records volumes at the point of transfer to the first CENELEC-certified operator. AEEA B.V. manages procurement of collection and treatment, while strategy is implemented through the Action Plan Leakage Flows and Action Plan Circular Economy, supported by targeted initiatives. Stichting OPEN collaborates exclusively with CENELEC-certified treatment operators in the Netherlands, Germany, and Belgium. In 2024, volumes treated on behalf of Stichting OPEN amounted to 140,400 tonnes domestically and 27,700 tonnes exported for treatment abroad.

TABLE 7. DISTRIBUTION OF WEEE COLLECTED DIRECTLY BY STICHTING OPEN BY CATEGORY, 2024 (TONNES)

CATEGORY	COLLECTED (TONNES)
 1. Temperature exchange equipment	39,730
 2. Screens, monitors and equipment containing screens	11,728
 3. Lamps	1,388
 4. Large equipment (>50 cm)	74,433
 5. Small equipment (≤50 cm)	31,262
 6. Small IT and telecommunications equipment (≤50 cm)	9,536
TOTAL	168,077

The WEEE Regulation sets minimum targets for material recycling and recovery per category, all of which were met in 2024. Overall performance reached 81% material recycling and 99% total recovery, based on processor-reported data via WF-RepTool[5].The breakdown of treatment outcomes was 1.1% preparation for reuse, 79.7% recycling, 18.0% other recovery (including 17.5% energy recovery), and 1.3% disposal.

Treatment outputs are dominated by metals (54.4%), followed by plastics (20.1%) and minerals and glass (approximately 8–9% combined). The total recycling share across materials is approximately 80%, with metals representing the largest recovered fraction (Stichting OPEN, 2025a).

Collection through the incentive scheme

In 2024, the incentive scheme accounted for 25% of formal collection. The incentive scheme encourages non-certified market actors, particularly metal recyclers, to separately collect WEEE and deliver it intact to CENELEC-certified treatment operators. Financial compensation is provided on top of material value, and collection services are offered for appliances that would otherwise incur treatment costs (see Table 8).

TABLE 8. INCENTIVE SCHEME FEES, 2025 & 2026, € (CONTINUES ON THE NEXT PAGE)

Category	Description	Basis	Fee 2025 (€)	Fee 2026 (€)
Municipalities (recycling centres)	Collection channel for consumers	Per ton mixed collection	112.47	117.08
Retail (in-store collection)	CRT / FPD	Per unit	4.24	4.37
	Cooling / freezing equipment	Per unit	7.96	8.20
	Pallet box	Per unit	15.91	16.39
	Roll box	Per unit	7.17	7.38
	Box	Per unit	3.18	3.28
	Loose appliance	Per unit	1.06	1.09
Retail bulk (distribution centres)	Collection channel via distributor role (bulk + transport)	Per ton	169.74	174.83
Incentive scheme	Generic categories 4/5/6	Per ton	125.00	140.00
	Air conditioning / heat pumps	Per ton	150.00	170.00
	Lighting equipment	Per ton	150.00	170.00
	Boilers / heating systems	Per ton	200.00	225.00

[5] https://wf-reptool2.org/

TABLE 8. INCENTIVE SCHEME FEES, 2025 & 2026, € (CONTINUATION FROM PREVIOUS PAGE)

Category	Description	Basis	Fee 2025 (€)	Fee 2026 (€)
Registration incentive scheme	Reporting by receivers (CENELEC reuse/prep, processors) in MyOPEN format; from 2026 also NWR & RepTool	Per ton	5.00	10.00
	Bonus for timely reporting	Per ton		5.00
CENELEC certification	Initial certification	Per certification process	5,000.00	5,000.00
	Re-certification	Per certification process	2,000.00	2,000.00

In 2024, tonnages through the scheme were 65 kt of WEEE (64,691 tonnes), a substantial increase compared to the year prior 2023 (41,619 tonnes). Participation in 2024 included 248 companies across 196 locations and 52 CENELEC-certified processors. The scheme was expanded in 2024 to include additional equipment categories such as air conditioners and heat pumps. The distribution of collection across categories in 2024 is presented in Table 9.

TABLE 9. DISTRIBUTION OF WEEE COLLECTED THROUGH THE INCENTIVE SCHEME BY CATEGORY, 2024 (TONNES)

CATEGORY	COLLECTED (TONNES)
 **Temperature exchange equipment**	2,399
 **Screens, monitors, and equipment containing screens (..)**	485
 **Lamps**	0
 **Large equipment (> 50cm)**	14,264
 **Small equipment (≤ 50cm)**	34,044
 **Small IT and telecommunication equipment (≤ 50cm)**	13,499
TOTAL	**64,691**

Collection - other CENELEC recyclers

CENELEC-certified recyclers also conduct independent collection activities. In 2024, volumes reported by CENELEC-certified recyclers amounted to 23 kt, corresponding to 9% of total formal collection (see Table 10 for a breakdown by category).

TABLE 10. DISTRIBUTION OF WEEE COLLECTED BY OTHER CENELEC-CERTIFIED RECYCLERS BY CATEGORY, 2024 (TONNES)

CATEGORY	COLLECTED (TONNES)
Temperature exchange equipment	811
Screens, monitors, and equipment containing screens (..)	1,852
Lamps	0
Large equipment (> 50cm)	5,434
Small equipment (≤ 50cm)	6,553
Small IT and telecommunication equipment (≤ 50cm)	7,996
TOTAL	22,646

These volumes have declined over time as the incentive scheme has expanded, reflecting a shift towards incentivised collection channels. Overall, the volume treated in accordance with CENELEC standards continues to increase.

Collection performance

Total collection in 2024 amounted to 255,414 tonnes (compared with 219,455 tonnes in 2023), representing an increase of 71 kt since 2018 or 39%. Growth in physical collection by Stichting OPEN (up from 145 kt in 2018) was supported by an expansion of collection infrastructure and increased use of business collection services. Collection is now carried out via multiple channels, including municipal, retail, business, and social routes. In total, the system comprises at least 7,800 collection points and 17,360 service locations, ensuring nationwide coverage.

TABLE 11. COLLECTION RATES, BY METHOD, 2024 (%)

INDICATOR	VALUE %
Collection / WEEE Generated	68.5
Collection / WEEE Generated (adjusted for reuse exports)	71.2
Collection / EEE POM (3-year average, 2021-2023)	31.7
Collection / EEE POM (excluding PV panels, 3-year average, 2021-2023)	49.3

Notwithstanding these improvements, the 85% collection target of WEEE Generated has not yet been met, largely due to persistent leakage flows and resulting incomplete capture of all WEEE.

Leakage Flows

Leakage flows represent (W)EEE not captured by official collection systems. The following leakage flows have currently been quantified as part of this report: non-CENELEC treatment, WEEE in residual waste, including household residual waste, business residual waste, and bulky household waste, as well as exports of EEE for reuse (covered under section Export for Reuse).

In 2024, total leakage was an estimated 117,293 tonnes. The distribution of leakage flows was as follows: exports of EEE for reuse (3.9%), household residual waste (7%), residual waste from businesses (5.6%), bulky household waste (1.2%), and WEEE mixed in metal scrap / unknown (13.7%). In total, leakage flows correspond to 31.4% of WEEE Generated in 2024, a decline from approximately half of WEEE in 2018. The reduction in leakage flows since 2018 reflects improvements in collection performance, particularly through targeted action plans, although significant volumes remain outside the formal system.

Non-CENELEC treatment

Non-CENELEC treatment, including processing by non-certified operators or through informal or unreported channels, amounted to 51 kt in 2024, corresponding to 13.7% of total WEEE Generated. A significant share is likely handled by metal recovery and refining operators, where WEEE is processed together with metal scrap. Many metal recyclers receive discarded electrical equipment as part of mixed waste streams. Through the incentive scheme, these recyclers are encouraged to separate WEEE, prevent further damage, and channel it to CENELEC-certified treatment facilities.

Household Residual Waste

Stichting OPEN commissions research on an ongoing basis to determine how much electrical and electronic equipment is disposed of via household residual waste. The most recent available study shows that the total volume of residual waste in the Netherlands has decreased, and within that, the net volume of WEEE declined too. Household residual WEEE fell from 36 kt in 2010 to 33 kt in 2018 and to 26 kt in 2024.

TABLE 12. WEEE IN HOUSEHOLD RESIDUAL WASTE BY CATEGORY (KT)

CATEGORY	2010	2018	2024
Temperature exchange equipment	0.0	0.0	0.0
Screens, monitors, and equipment containing screens (..)	1.0	1.0	1.3
Lamps	0.4	0.4	0.2
Large equipment (> 50cm)	1.0	1.0	1.9
Small equipment (≤ 50cm)	21.0	25.0	20.4
Small IT and telecommunication equipment (≤ 50cm)	13.0	5.0	2.6
TOTAL	36.0	33.0	26.2

WEEE in Business Residual Waste

In 2024, residual waste from the business sector remains a significant leakage pathway. A study conducted for Rijkswaterstaat indicates that approximately 1% of total business residual waste consists of WEEE (Rijkswaterstaat, 2025). Combined with data on residual waste from the services sector, the total leakage flow from business residual waste is estimated at 21 kt in 2024.

WEEE in Bulky Household Waste

In 2023, Afvalspiegel, commissioned by Stichting OPEN, analysed the share of WEEE in the bulky waste stream. Based on the sorting and weighing of nearly 27,000 kg of material, the study found that, on average, 1.4% of the total consisted of WEEE (Afvalspiegel, 2023). Based on these findings, and consistent with the mass-balance results used in this study, the total volume of WEEE in bulky household waste is estimated at 5 kt in 2024.

Table 13 presents a summary of the leakage flows, including as a share of WEEE Generated.

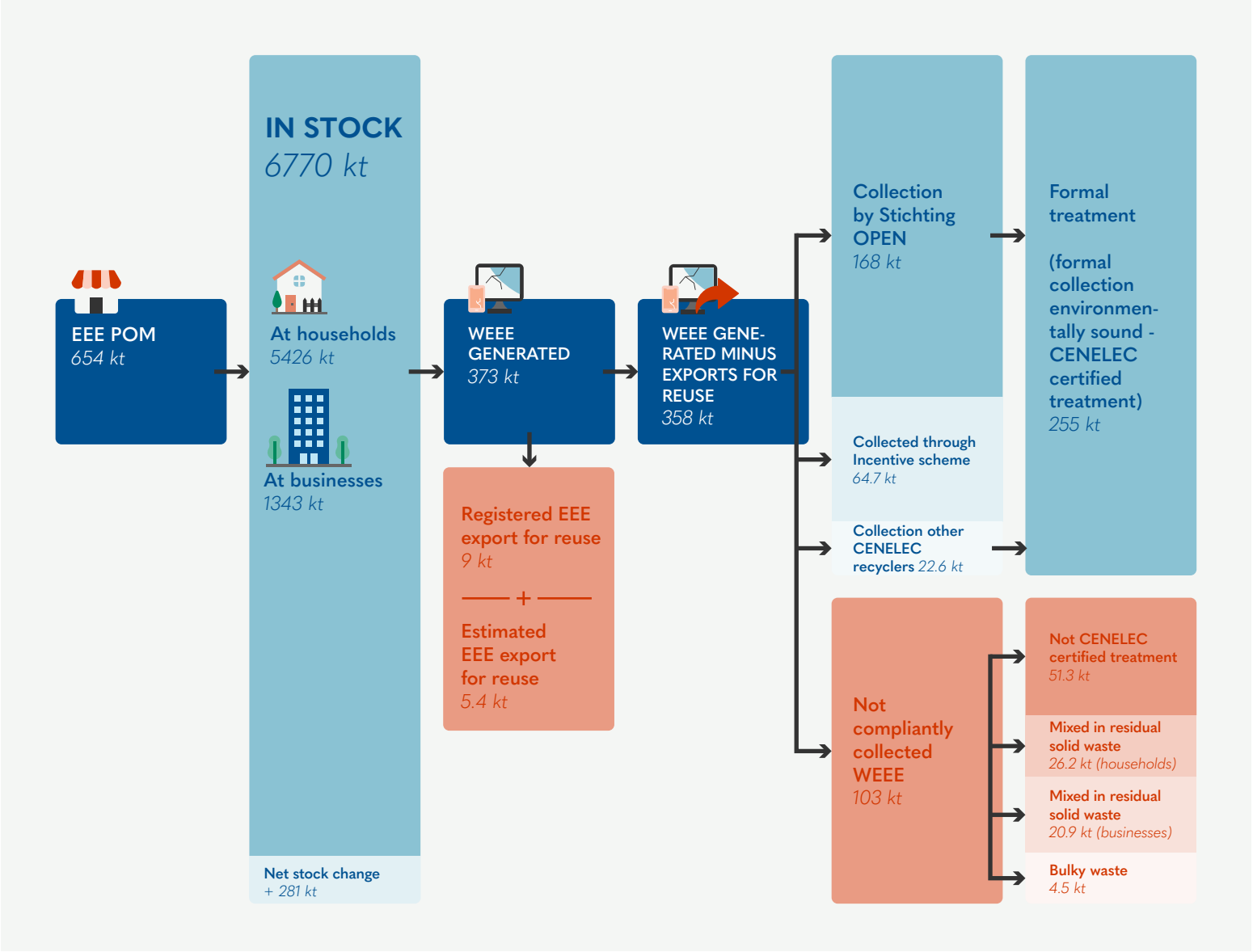
TABLE 13. LEAKAGE FLOWS, 2024

FLOW	TONNES	SHARE OF WEEE GENERATED
Export for reuse	14,387	3.9%
Household residual waste	26,191	7.0%
Business residual waste	20,918	5.6%
Bulky waste (households)	4,500	1.2%
WEEE mixed in metal scrap / unknown	51,296	13.7%
Total	**117,293**	**31.4%**

Overview of the WEEE Flows, 2024

A summary overview of the WEEE flows quantified in this study and their respective tonnages is presented in Figure 10.

•• **FIGURE 10.** OVERVIEW OF THE NETHERLANDS WEEE FLOWS, 2024



Summary and forward look

Measuring progress - collection target

A collection target based on 65% of POM in the three preceding years poorly reflects the actual volume of WEEE becoming available. POM reached record levels in 2023, driven largely by rapid growth in product categories with long lifetimes. While in 2024, POM declined from this peak, primarily due to a drop in PV panel sales, it remained at a historically high level compared to earlier years because of energy transition related products such as heat pumps, air conditioners, PV panels, and charging stations.

Although the WEEE Generated methodology is sensitive to assumptions on product lifetimes and relies on historical POM data, it provides a more stable and realistic basis for defining a collection target. When exports of EEE for reuse are also considered, the concept of *WEEE Available for Collection,* which can be calculated as WEEE Generated adjusted for exports for reuse can serve as a metric to assess current collection and treatment performance in relation to WEEE that is available to be handled domestically.

Table 14 presents the distance to each collection target in both tonnes and percentage points. This is calculated as the difference between the target level implied by each methodology and the actual volume of WEEE collected, providing a direct measure of the additional collection required to meet each benchmark.

TABLE 14. DISTANCE TO EU COLLECTION TARGETS, 2024 (TONNES AND PERCENTAGE POINTS)

Indicator	Gap (kt)	Gap (percentage points)
WEEE Generated target (85%)	62	16.5 pp
WEEE Generated target (adjusted for export for reuse)	49	13.8 pp
EEE POM target (3-year average (2021-2023), 65%)	269	33.3 pp

Reducing leakage flows

Total leakage in 2024 was approximately 117 kt, which corresponds to 31% of WEEE Generated. This is a decline from approximately 50% in 2018. While this indicates progress, leakage flows remain substantial. Continued efforts in awareness-raising and targeted measures to reduce non-compliant treatment are essential to sustain and accelerate this downward trend.

To further improve insight into leakage flows, future reporting through the NWR could be refined to the product level (e.g. washing machines or PV panels), rather than relying solely on broad categories. This would enable more targeted analysis and more effective interventions.

Steps towards a circular economy and future outlook

The government has reaffirmed its ambition for the Dutch economy to become 50% circular by 2030 and fully circular by 2050. Stichting OPEN has taken steps to support this transition, including financial support for CENELEC certification, pilot projects on preparation for reuse, and further development of concepts such as WEEE Generated and WEEE Available for Collection.

Recent growth in EEE POM has been driven by long-lifetime products related to the energy transition such as PV panels, electric bicycles, and heat pumps. As these reach end of life, WEEE Generated is expected to increase gradually, with peak volumes only in the longer term. EEE POM is expected to remain above 600 kt between now and 2030 according to UNITAR statistics. This creates additional potential for collection and circular treatment going into the future.

At present, there are no explicit targets for circularity within the WEEE system beyond requirements for recycling and recovery. To enable further progress, it is important to establish national and European targets that address preparation for reuse (key other loops in the circular economy). Stichting OPEN has initiated work to integrate preparation for reuse into future target setting. This will require further development of the WEEE flows model, including better estimates of WEEE Available for Collection and more realistic assumptions on leakage flows.

Collaboration between Stichting OPEN and UNITAR is ongoing to further develop WEEE Generated and Battery Waste Generated tools. These efforts aim to improve measurement and the feasibility of future targets.

UNITAR training materials on measuring WEEE

WEEE Generated is calculated in the Netherlands using tools developed by UNITAR SCYCLE. UNITAR plays an active role in building countries' capacity to compile WEEE statistics. This includes developing tools and training materials, providing technical support, and delivering initiatives such as regional and national e-waste monitors. As part of this work, UNITAR has created a WEEE statistics toolkit consisting of four Excel-based tools and accompanying manuals to support the production of national-level indicators. These tools are designed to be used sequentially and cover:

- The calculation of EEE POM for UNU-KEYs
- The calculation of EEE POM for PV panels
- The estimation of WEEE Generated based on EEE POM outputs
- The extrapolation of results to 2050 to support scenario analysis, including collection targets, resource recovery, and environmental impacts

The toolkits are available via the Scycle Academy for Circular Economy (ACE) website under the "Toolkits" section.

UNITAR can also provide pre-filled versions of the tools using internally validated data. Countries may further refine the tools by updating historical POM data and/or lifetime assumptions to reflect national circumstances and available evidence. For EU Member States, the WEEE calculation tools are publicly available online.

Stichting OPEN is the PRO in the Netherlands.

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Annexes

Annex 1. Correlation tables

CORRELATIONS BETWEEN THE UNU-KEYS (V1) AND EU (WEEE DIRECTIVE) CATEGORIES

UNU	FULL NAME	EU-6	EU-6PV	EU-10
0001	Central Heating (household installed)	4	4a	1
0002	Photovoltaic Panels (incl. inverters)	4	4b	4
0101	Professional Heating & Ventilation (excl. cooling equipment)	4	4a	1
0102	Dishwashers	4	4a	1
0103	Kitchen equipment (e.g. large furnaces, ovens, cooking equipment)	4	4a	1
0104	Washing Machines (incl. combined dryers)	4	4a	1
0105	Dryers (washer-dryers, centrifuges)	4	4a	1
0106	Household Heating & Ventilation (e.g. hoods, ventilators, space heaters)	4	4a	1
0108	Fridges (incl. combifridges)	1	1	1
0109	Freezers	1	1	1
0111	Air Conditioners (household installed and portable)	1	1	1
0112	Other Cooling equipment (e.g. dehumidifiers, heat pump dryers)	1	1	1
0113	Professional Cooling equipment (e.g. large air conditioners, cooling displays)	1	1	1
0114	Microwaves (incl. combined, excl. grills)	5	5	1

UNU	FULL NAME	EU-6	EU-6PV	EU-10
0201	Other small household equipment (e.g. small ventilators, irons, clocks, adapters)	5	5	2
0202	Equipment for food preparation (e.g. toaster, grills, food processing, frying pans)	5	5	2
0203	Small household equipment for hot water preparation (e.g. coffee, tea, water cookers)	5	5	2
0204	Vacuum Cleaners (excl. professional)	5	5	2
0205	Personal Care equipment (e.g. tooth brushes, hair dryers, razors)	5	5	2
0301	Small IT equipment (e.g. routers, mice, keyboards, external drives, accessories)	6	6	3
0302	Desktop PCs (excl. monitors, accessories)	6	6	3
0303	Laptops (incl. tablets)	2	2	3
0304	Printers (e.g. scanners, multifunctionals, faxes)	6	6	3
0305	Telecommunication equipment (e.g. [cordless] phones, answering machines)	6	6	3
0306	Mobile Phones (incl. smartphones, pagers)	6	6	3
0307	Professional IT equipment (e.g. servers, routers, data storage, copiers)	4	4a	3
0308	Cathode Ray Tube Monitors	2	2	3
0309	Flat Display Panel Monitors (LCD, LED)	2	2	3
0401	Small Consumer Electronics (e.g. headphones, remote controls)	5	5	4
0402	Portable Audio & Video (e.g. MP3 players, e-readers, car navigation)	5	5	4
0403	Musical Instruments, Radio, Hi-Fi (incl. audio sets)	5	5	4
0404	Video (e.g. Video recorders, DVD and Blu-ray players, set-top boxes) and Projectors	5	5	4
0405	Speakers	5	5	4
0406	Cameras (e.g. camcorders, photo & digital still cameras)	5	5	4

UNU	FULL NAME	EU-6	EU-6PV	EU-10
0407	Cathode Ray Tube TVs	2	2	4
0408	Flat Display Panel TVs (LCD, LED, Plasma)	2	2	4
0501	Small Lighting equipment (excl. LED & incandescent)	3	3	5
0502	Compact Fluorescent Lamps (incl. retrofit & non-retrofit)	3	3	5
0503	Straight Tube Fluorescent Lamps	3	3	5
0504	Special Lamps (e.g. professional mercury, high & low pressure sodium)	3	3	5
0505	LED Lamps (incl. retrofit LED lamps)	3	3	5
0506	Household Luminaires (incl. household incandescent fittings & household LED luminaires)	5	5	5
0507	Professional Luminaires (offices, public space, industry)	5	5	5
0601	Household Tools (e.g. drills, saws, high-pressure cleaners, lawnmowers)	5	5	6
0602	Professional Tools (e.g. for welding, soldering, milling)	4	4a	6
0701	Toys (e.g. car racing sets, electric trains, music toys, biking computers, drones)	5	5	7
0702	Game Consoles	6	6	7
0703	Leisure equipment (e.g. sports equipment, electric bikes, juke boxes)	4	4a	7
0801	Household Medical equipment (e.g. thermometers, blood pressure meters)	5	5	8
0802	Professional Medical equipment (e.g. hospital, dentist, diagnostics)	4	4a	8
0901	Household Monitoring & Control equipment (alarm, heat, smoke, excl. screens)	5	5	9
0902	Professional Monitoring & Control equipment (e.g. laboratory, control panels)	4	4a	9
1001	Non-cooled Dispensers (e.g. for vending, hot drinks, tickets, money)	4	4a	10
1002	Cooled Dispensers (e.g. for vending, cold drinks)	1	1	10

CATEGORY	DESCRIPTION
1	Heat exchange equipment
1A	Heat exchange equipment (household/dual-use)
1B	Heat exchange equipment (professional)
2	Screens, monitors and equipment containing screens
2A	Televisions (household/dual-use)
2B	Flat panel displays (household/dual-use)
2C	Laptops, tablets and navigation equipment (household/dual-use)
2D	Screens, monitors and equipment containing screens (professional)
3	Lamps
3A	LED lamps
3B	TL-, energy-saving lamps
4-ZP	Large equipment excl. solar panels

CATEGORY	DESCRIPTION
4-ZPA	Large equipment (>50cm | household/dual-use | excl. solar panels, electric bicycles)
4-ZPB	Large equipment (>50cm | professional | excl. solar panels, electric bicycles)
4-ZPC	Solar panels
4-ZPD	Electric bicycles
5	Small equipment
5A	Small equipment (≤50cm | household/dual-use)
5B	Small equipment (≤50cm | professional)
6	Small IT and telecommunication equipment
6A	IT and telecommunication equipment (≤50cm | household/dual-use)
6B	IT and telecommunication equipment (≤50cm | professional)

EU10 CATEGORY DESCRIPTIONS

CATEGORY	DESCRIPTION
1	Large household appliances
2	Small household appliances
3	IT and telecommunications equipment
4	Consumer equipment and photovoltaic panels
5	Lighting equipment
6	Electrical and electronic tools (with the exception of large-scale stationary industrial tools)
7	Toys, leisure, and sports equipment
8	Medical devices (with the exception of all implanted and infected products)
9	Monitoring and control instruments
10	Automatic dispensers

EU6-PV CATEGORY DESCRIPTIONS

CATEGORY	DESCRIPTION
1	Temperature exchange equipment
2	Screens, monitors, and equipment containing screens having a surface greater than 100 cm
3	Lamps
4	Large equipment (any external dimension more than 50 cm)
4a	Large equipment (excl. photovoltaic panels)
4b	Large equipment (photovoltaic panels incl. inverters)
5	Small equipment (no external dimension more than 50 cm)
6	Small IT and telecommunication equipment (no external dimension more than 50 cm)

Annex 2. WEEE Generated broken down by the NWR Categories

WEEE GENERATED, 2020 - 2024, BY NWR CATEGORY (UNIT: T)

NWR	2020	2021	2022	2023	2024
1A	52,099	53,145	54,358	55,744	57,246
1B	4,846	5,058	5,296	5,554	5,822
2A	2,959	2,067	1,398	916	582
2B	15,398	16,132	16,826	17,469	18,062
2C	4,470	4,769	5,123	5,490	5,851
3A	424	442	456	467	474
3B	2,331	2,255	2,199	2,151	2,099
4A	113,047	116,095	119,731	123,781	128,137
4B	23,285	24,605	26,073	27,571	29,064
4C	596	794	1,082	1,497	2,086
4D	6	6	7	8	8
5A	89,843	89,945	90,165	90,259	90,480
5B	2,986	3,034	3,089	3,133	3,181
6A	25,081	25,273	25,302	25,130	24,829
6B	5,245	5,306	5,298	5,228	5,150

These split keys are based on the 2024 WEEE Generated data.

UNU-KEY TO NWR SPLIT KEYS

UNU_KEY	1A	1B	2A	2B	2C	3A	3B	4A	4B	4C	4D	5A	5B	6A	6B
0001	0	0	0	0	0	0	0	0	1.00	0	0	0	0	0	0
0002	0	0	0	0	0	0	0	0	0	1.00	0	0	0	0	0
0101	0	0	0	0	0	0	0	0	1.00	0	0	0	0	0	0
0102	0	0	0	0	0	0	0	1.00	0	0	0	0	0	0	0
0103	0	0	0	0	0	0	0	0.82	0.18	0	0	0	0	0	0
0104	0	0	0	0	0	0	0	1.00	0	0	0	0	0	0	0
0105	0	0	0	0	0	0	0	1.00	0	0	0	0	0	0	0
0106	0	0	0	0	0	0	0	1.00	0	0	0	0	0	0	0
0108	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0109	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0111	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0112	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0113	0	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0
0114	0	0	0	0	0	0	0	0.14	0	0	0	0.86	0	0	0
0201	0	0	0	0	0	0	0	0	0	0	0	0.97	0.03	0	0
0202	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0
0203	0	0	0	0	0	0	0	0	0	0	0	0.09	0.91	0	0
0204	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0
0205	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0
0301	0	0	0	0	0	0	0	0	0	0	0	0	0	0.43	0.57
0302	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	0
0303	0	0	0	0	1.00	0	0	0	0	0	0	0	0	0	0
0304	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	0

UNU_KEY	1A	1B	2A	2B	2C	3A	3B	4A	4B	4C	4D	5A	5B	6A	6B
0305	0	0	0	0	0	0	0	0	0	0	0	0	0	0.47	0.53
0306	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	0
0307	0	0	0	0	0	0	0	0.25	0.75	0	0	0	0	0	0
0308	0	0	1.00	0	0	0	0	0	0	0	0	0	0	0	0
0309	0	0	0	1.00	0	0	0	0	0	0	0	0	0	0	0
0401	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0
0402	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0
0403	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0
0404	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0
0405	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0
0406	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0
0407	0	0	1.00	0	0	0	0	0	0	0	0	0	0	0	0
0408	0	0	0	1.00	0	0	0	0	0	0	0	0	0	0	0
0501	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0
0502	0	0	0	0	0	0	1.00	0	0	0	0	0	0	0	0
0503	0	0	0	0	0	0	1.00	0	0	0	0	0	0	0	0
0504	0	0	0	0	0	0	1.00	0	0	0	0	0	0	0	0
0505	0	0	0	0	0	1.00	0	0	0	0	0	0	0	0	0
0506	0	0	0	0	0	0	0	0.70	0	0	0	0.30	0	0	0
0507	0	0	0	0	0	0	0	0.46	0	0	0	0.54	0	0	0
0601	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0
0602	0	0	0	0	0	0	0	1.00	0	0	0	0	0	0	0
0701	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0

UNU_KEY	1A	1B	2A	2B	2C	3A	3B	4A	4B	4C	4D	5A	5B	6A	6B
0702	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0
0703	0	0	0	0	0	0	0	0.99	0	0	0.01	0	0	0	0
0801	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0
0802	0	0	0	0	0	0	0	0.13	0.87	0	0	0	0	0	0
0901	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0
0902	0	0	0	0	0	0	0	0.17	0.83	0	0	0	0	0	0
1001	0	0	0	0	0	0	0	0.05	0.95	0	0	0	0	0	0
1002	0	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0

2024

The Dutch WEEE Flows

An overview of WEEE Flows in the Netherlands in 2024

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