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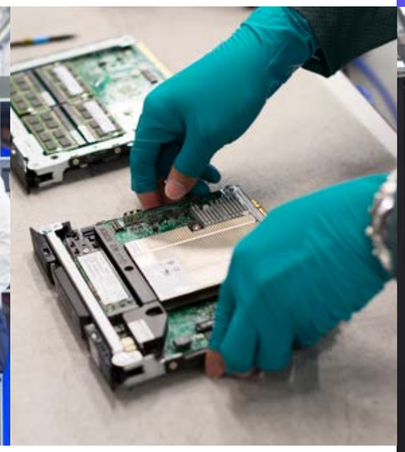
HPE Financial Services
Creating smarter IT lifecycles






HPE Circular Economy Report

Sample report
2025

Hewlett Packard Enterprise

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As AI and other innovations quickly advance the way the world uses technology, HPE Financial Services maintains an unwavering commitment to helping customers create smarter IT lifecycles that are rooted in sustainability practices.

The HPE Circular Economy Report (CER) is an important part of helping customers achieve their innovation goals. By providing relevant and robust information related to their engagement with asset management services from HPE Financial Services, organization can quantify the environmental impact and savings achieved.

The following pages contain examples of what customers can expect with their own report. For more details and instructions on how to obtain a report, contact your HPEFS account manager.

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Glossary

Acronyms:

CER	Circular Economy Report
GHG	Greenhouse Gas
GHG Protocol	Greenhouse Gas Protocol
HPE	Hewlett-Packard Enterprise
HPEFS	HPE Financial Services
ITAD	IT Asset Disposition
LCA	Life Cycle Assessment
TRC	Technology Renewal Center

Terms and their definitions:

Life Cycle Assessment (LCA)	The methodology for assessing environmental impacts associated with all the stages of the life cycle of a product, process or service
Avoided environmental impact	The assessment that measures the environmental benefits minus the impact of HPEFS refurbishment service
Attributional Life Cycle Assessment	A type of LCA method that focuses on the direct environmental impacts of a product, process or service
CER methodology	This document containing both the environmental benefits and the GHG Protocol impact
Consequential Life Cycle Assessment	A type of LCA method that focuses on effects on the broader system as a result of specific decisions or actions taken, in this context the services provided by HPEFS
GHG impact	The GHG Protocol compliant methodology and values to be directly adopted and used in your carbon accounting
HPE service(s)	The HPE Asset Management and IT Financing Solutions provided by HPEFS
Refurbishment	Sanitizing and preparing assets for a new use cycle

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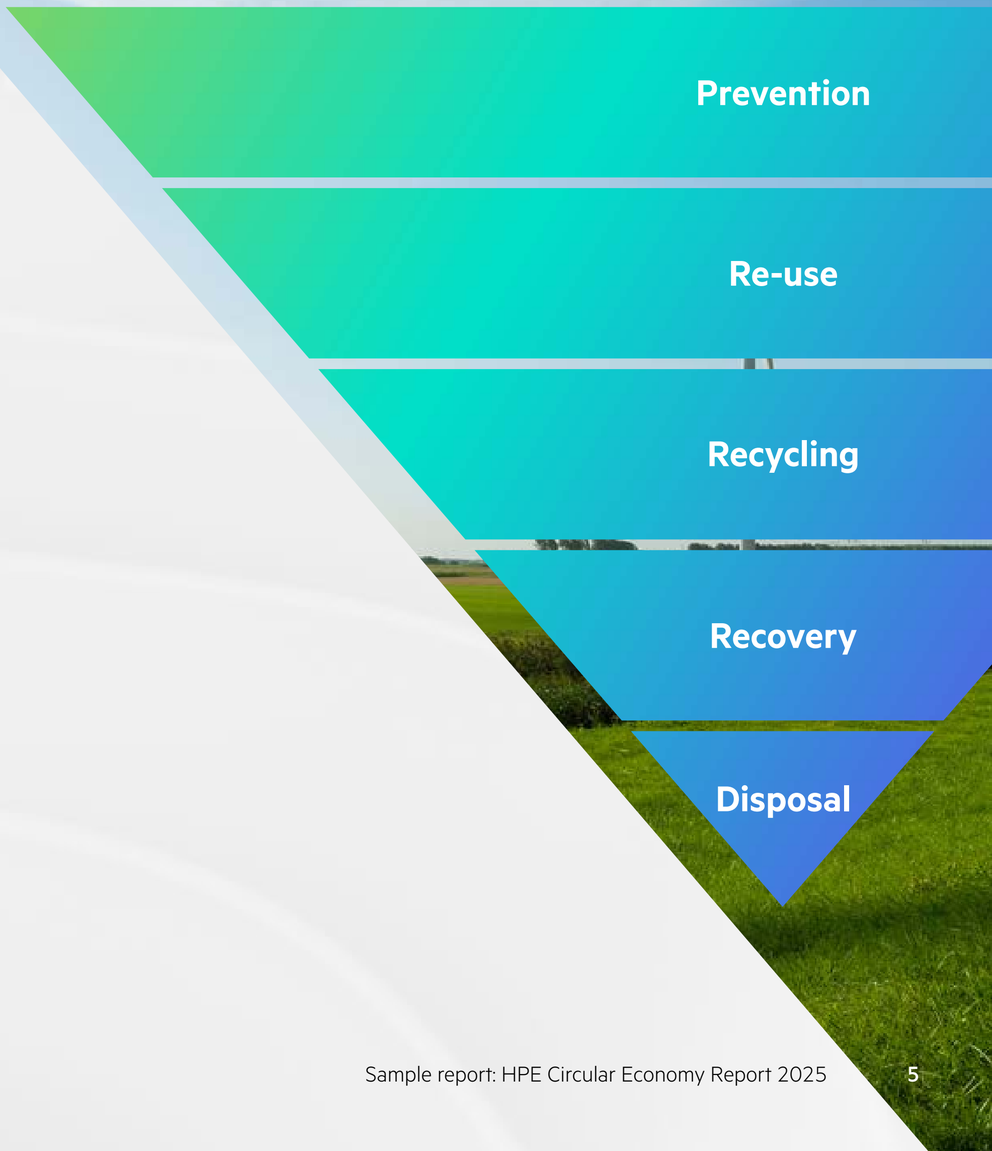
Background

According to a report by the World Health Organization (WHO) **e-waste is the fastest growing solid waste** stream in the world[1].

One of the key tenets of the circular economy is to keep assets in use longer, **reducing new raw material extraction and minimizing e-waste potential.** Extending products' lifecycle and re-using products and materials is one of the ways we can preserve resources needed to build new products. The efficient use of natural resources is considered a necessary condition for their sustainable use.

The Waste Hierarchy graphic to the right demonstrates the ranking of waste management options according to what is best for the environment.

[1] Source: World Health Organization – Oct. 2023



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HPE commitment

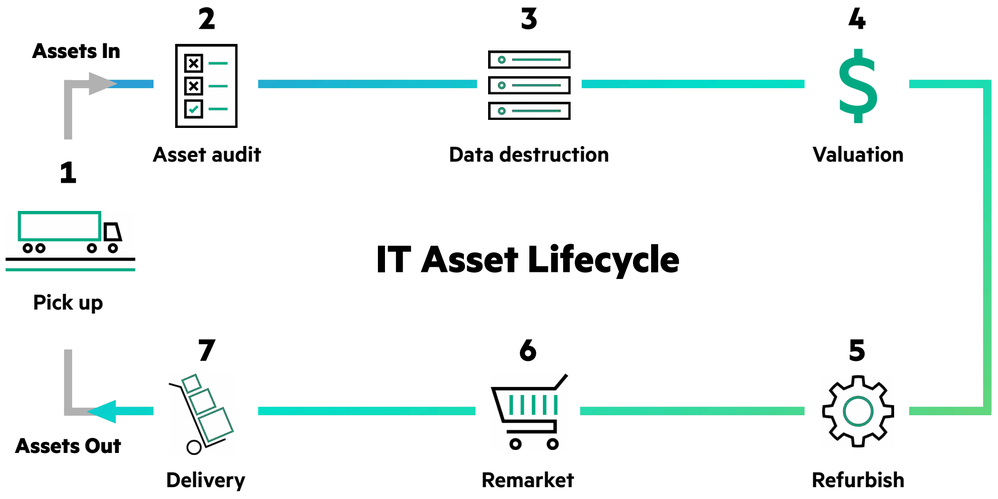
We are living in an unprecedented era of innovation where sustainable IT lifecycles create opportunity. HPE is dedicated to supporting customers and partners at any stage in the lifecycle journey to enable progress on their innovation goals and their sustainability commitments.

Committed to driving a more circular economy, HPE works with customers and partners to remove inefficiencies, extend the useful life of tech and ensure responsible asset management across every stage of the IT asset lifecycle.

HPE takes a data-driven approach to focus our efforts on initiatives that will have the most significant impact on mitigating our environmental footprint.

This commitment, and the technological and engineering innovations it has spurred, is already delivering benefits to our customers: pairing reduced energy and resource consumption, and associated cost, with greater performance.

HPE conducts functionality testing on all decommissioned equipment and its components. This process is a critical step in ensuring that as much technology as possible is put back into the circular economy for reuse, refurbishment, or recycling.



9.5 million

assets processed through **HPE Technology Renewal Centers** over the last 3 years

$1 billion

infused back into customer budgets over **the last 3 years**

86%

reuse for server assets FY24

94%

reuse for PCs FY24

Source: HPE Technology Renewal Center data report, 2024

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Accountability and data

Background

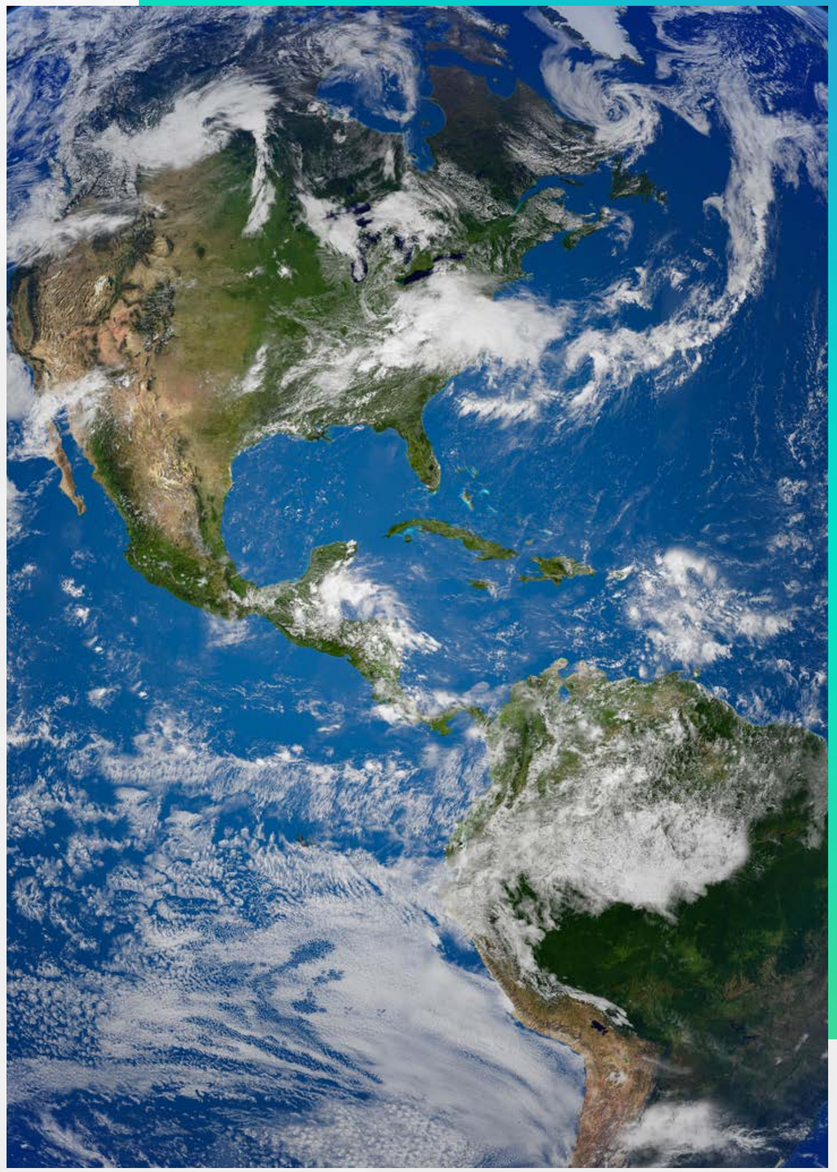
There is increasing expectation for the industry to provide data on the impact of purchased goods and services. Action and accountability for climate impact are increasingly important as organizations transition to more sustainable practices. Data availability is key to enabling organizations to calculate and monitor the impact of operations and demonstrate progress towards sustainability goals.

Purpose of the HPE Circular Economy Report (CER)

An important part of helping customers abate their carbon footprint is providing a quantification of the GHG emissions from end of use IT assets. The aim of the HPE Circular Economy Report is to provide customers with relevant and robust information related to their engagement with asset management services from HPE Financial Services.

What makes the HPE CER different?

The methodology used in the HPE CER is based on a material-based impact assessment, combined with supplier-specific information from different HPE/HPEFS vendors, unlike other methodologies that may use product attributes. The database has been built in such a way that it can continuously be improved and updated, as new data becomes available. The methodology used in this report has been developed with experts in this field and has been independently verified by a third party.



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Methodology

Approach

We set out to create a methodology that is based on first-hand data collection. To achieve this, we collaborated with an external consultant who applied their expertise and an innovative approach to this study/analysis.

Analysis

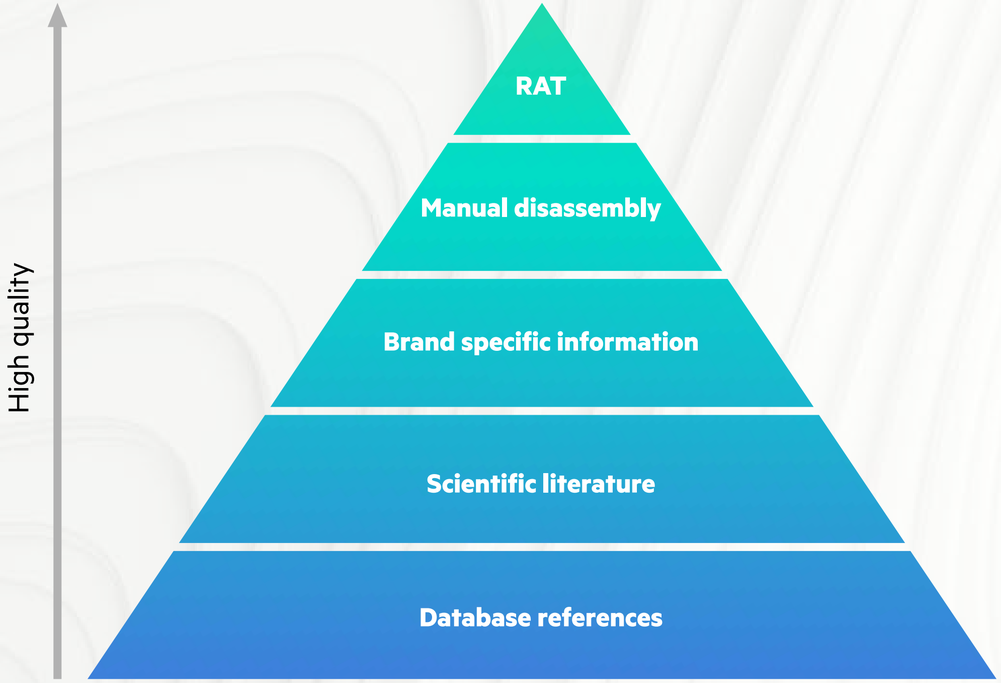
We carried out two different assessments, with different purposes and methods, as outlined on pages 10 and 11:

- Greenhouse Gas (GHG) impact.
- Avoided environmental impact.

The calculation of GHG emissions begins at the moment the assets leave the client location for return to HPEFS hubs and refurbishment centers. Emissions from transport to the HPEFS location, packaging and transport to recycling facilities are included in the reported GHG data. The impact of further processing of the assets (i.e. refurbishing and recycling), is attributed to the user of the refurbished product or recovered material.

Data collection:

Data sources of varying specificity were used to develop this methodology. On the right, you will find more information about the data, approach and assumptions. The data gathered from varying sources are scored and put into a hierarchy, from high to low quality. The data collection process is managed following the hierarchy represented in the graphic and serves as our guide for present and future models and analysis.



Primary data

This includes Recycling Assessment Tool (RAT) analysis, specific impact assessment of HPE Technology Renewal Centers and the analysis of products refurbished at our locations.

Secondary data

This includes brand specific information, scientific literature and database references.

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Methodology

Important assumptions

Although they may still be of very high quality, all products returned to HPEFS are considered waste and are benchmarked against the standard regional, e-waste scenarios in order to take the most conservative approach for this GHG impact analysis. This is based on enterprise practices with relevant hardware. To adequately represent the technical capabilities of refurbished assets, we applied a quality factor to better represent the expected added lifetime value of assets post-refurbishment.

Packaging type and quantities are based on the HPEFS packaging guidelines, and the type of materials used by our logistics partners.

Logistics: distances from client to hub and recycler have been assumed based on the Product Environmental Footprint methodology to be 250km based on an in-country average.

Returned products are not necessarily classified as e-waste in other contexts, rather they may be classified as used products destined for testing, reuse, repair, and/or refurbishment, depending on the state of the returned product and the jurisdictions involved.

Limitations

Most limitations result from data gaps that have been addressed through literature research and expert assumptions.

- The list of products assessed is not exhaustive.
- Data from our processing and recycling partners is partial. We continue to work with them to collect more data to be able to determine the impact of refurbishment activities based on the processing location.

Ongoing improvements

This methodology was developed with the intention of continuous improvement. The final goal is to use primary data from HPEFS for all aspects of the impact calculation.

Standards

The CER-impact methodology uses ISO14040, ISO14044, ISO14064, and ISO14072 standards as a foundation. Aspects such as organizational GHG accounting, product LCAs and consequential LCAs are adopted from these standards.

Verification

Verification of the report's Greenhouse Gas (GHG) Protocol methodology has been validated to be in alignment with the GHG Protocol Technical Guidance for Calculating Scope 3 Emissions (version 1.0) requirements. The HPE Circular Economy Report validation audit was completed by an accredited Life Cycle Assessment (LCA) expert, who is a registered verifier with the Dutch Nationale Milieudatabase (National Environmental Database), MRPI (Milieu Relevante Product Informatie) and the Irish Green Building Council (IGBC). The verification letter can be provided on request.

Transparency

This methodology was developed in collaboration with external experts to create a robust methodology that can be independently verified.

This Circular Economy Report (this "CER") is provided to illustrate the estimated environmental impacts that result when assets are returned to HPE Financial Services and its subsidiaries and affiliates (collectively, "Hewlett-Packard Financial Services Company" or "HPEFS") after use. The values contained in the CER are estimates that reflect potential – not actual – recycling, refurbishment, and reuse rates. The various statistic and values depicted in the CER are based on asset return volumes for IT products within general product categories subsequent to return to HPEFS. Statistical conversion coefficients and other methods of estimation are applied to evaluate the types of materials that specific products, or products of substantially similar description, typically contain.

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GHG impact

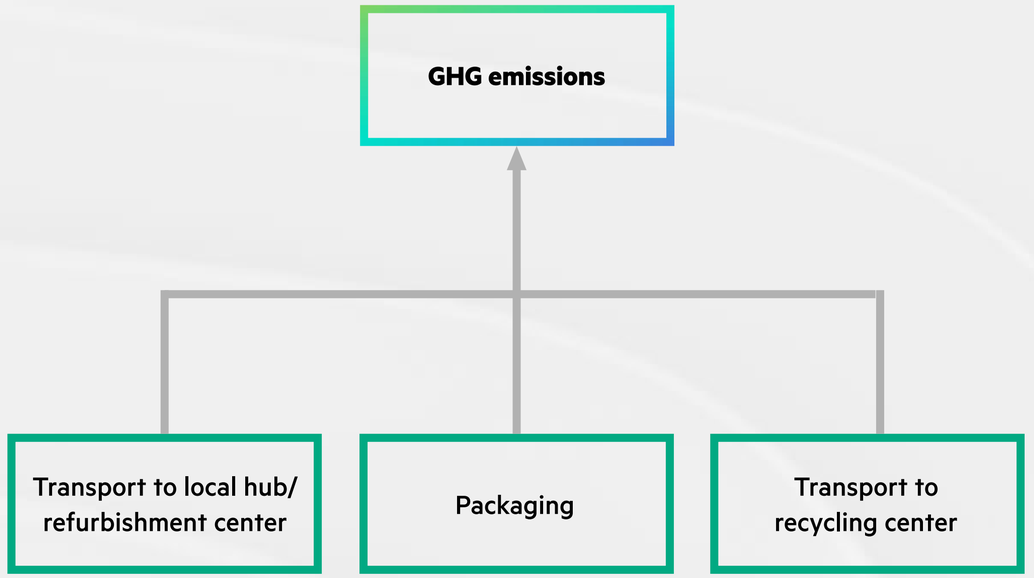
The GHG Impact pertains to the emission sources assigned to the end-of-life stage of a product's lifecycle, as outlined by the GHG Protocols. The data contained in our report may be used in organizations' GHG Protocol compliant carbon reporting. The impact is calculated based on a client's specific shipment of assets, including the region where the client assets are collected from, the asset types, the quantities and the refurbishment and recycling ratio of the product returned.

System boundary

The GHG emissions are calculated from the moment the electronic equipment leaves the client for HPEFS. Emissions of transport to HPEFS hubs and refurbishment centers, packaging and transport to recycling facilities are included in the reported GHG emissions, in line with the GHG protocol.

Purpose of this data

The data provided in the GHG impact table is helpful for organizations to quantify the emissions impact from their contracted end of use services with HPE. This data may be used by organizations as part of their ESG disclosure(s).



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Avoided environmental impact

The benefit of the HPEFS services is twofold

Primarily, the service leads to high refurbishment and recycling rates and a minimal number of materials sent to landfill. Secondly, after refurbishment, assets are placed back into the Circular Economy and made available to other consumers to buy, leading to a reduced need to produce new assets from virgin materials. Additionally, due to the recovery of materials in the recycling process, there is a decreased need to extract raw materials. The avoided impact of these material savings is included in the methodology.

For this analysis, we have used the Consequential Life Cycle Assessment (LCA) method which focuses on the 'consequential' effects of the HPEFS services on the broader system. This means that system boundaries are wider compared to attributional LCA which focuses on the direct environmental impacts of a product or process.

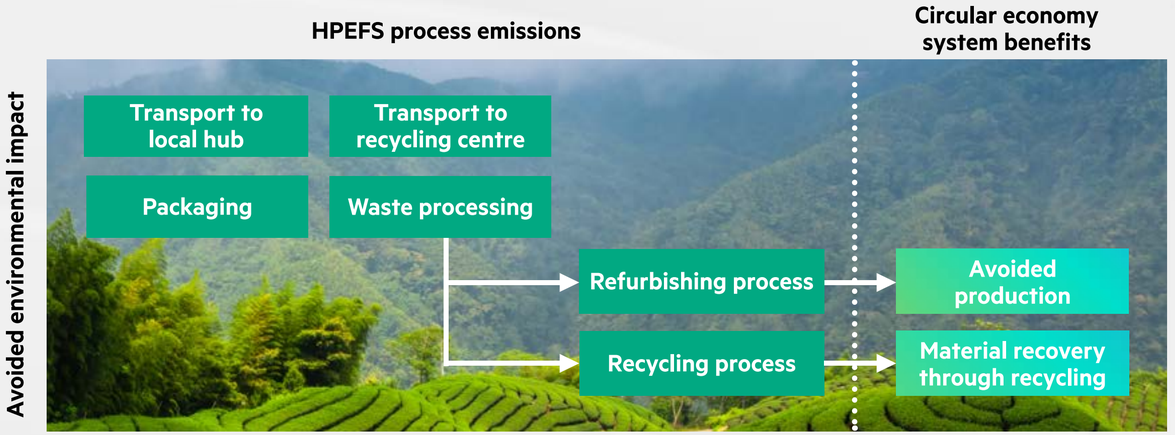
System boundary

Our calculations focus on the carbon emissions associated with transporting assets from a client's location to our refurbishing centers. This includes packaging, logistics, processing, and the material and energy inputs required for refurbishment or recycling.

- The cut-off of the system boundary for this calculation is the point where an asset has been refurbished and is on the shelf, ready for resale; or when the recovered and recycled materials re-enter the market.
- As compared to the GHG impact calculation, the system boundary has been expanded here to include material and energy-related inputs required for refurbishment or recycling of assets as well as the avoided impact of manufacturing new assets and raw materials.
- Within boundary activities resulting in GHG emissions include transport from a client's location to our refurbishing centers, packaging, logistics and processing, including material and energy related inputs required for the refurbishment or recycling of assets.
- Within boundary activities resulting in avoided impact include the manufacturing of new assets through the refurbishing process and the material recovery through the recycling process.
- The GHG emissions generated within the system boundary are subtracted from the avoided impact within the system boundary, resulting in a net Avoided environmental impact from using HPEFS services.

The data provided in this section demonstrates how engaging with sustainable IT asset management programs may result in an improved use of assets and resources, where customers contribute to and benefit from a wider circular economy system.

The GHG Protocol does not account for avoided environmental impacts, hence this data is not reportable under GHG Protocol aligned frameworks.



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Your recovered items

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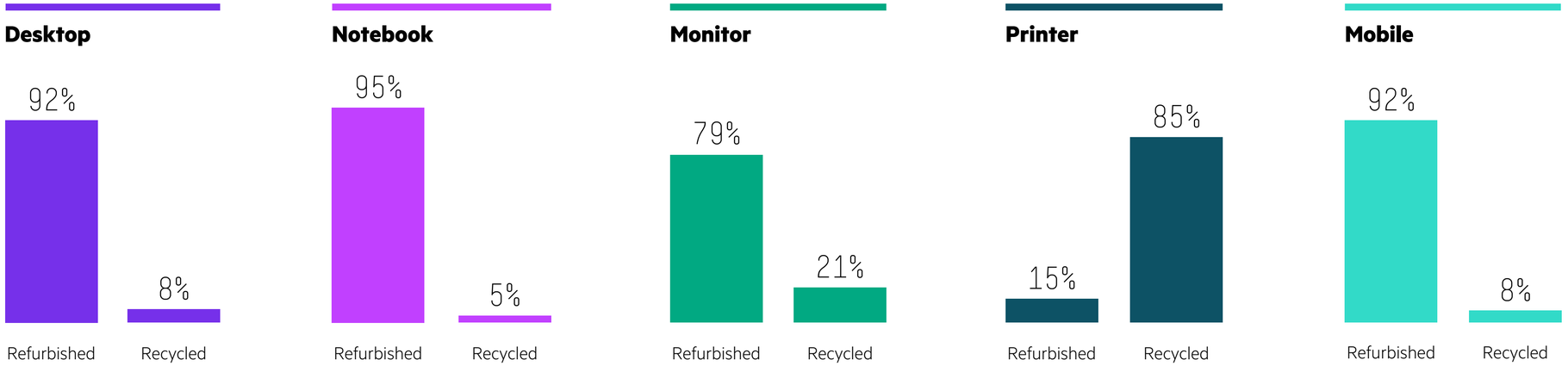
Workplace (units)

A summary of your returned items and their final status as refurbished or recycled materials.



Product type	Refurbished	Recycled	Total
Desktop	3,457	297	3,754
Notebook	13,353	684	14,073
Monitor	1,896	504	2,400
Printer	20	115	135
Mobile	156	14	170
Total	**18,882**	**1,614**	**20,496**

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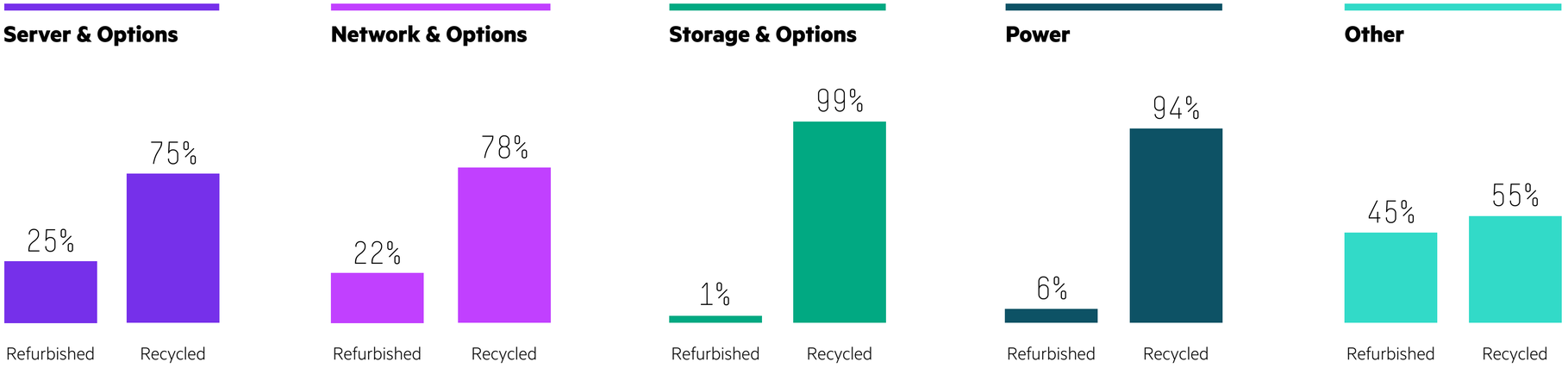
Enterprise (units)

A summary of your returned items and their final status as refurbished or recycled materials.



Product type	Refurbished	Recycled	Total
Server & Options	1,355	4,119	5,474
Network & Options	91	319	410
Storage & Options	8	674	682
Power	3	47	50
Other	46	57	103
Total	**1,503**	**5,216**	**6,719**

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Avoided environmental impact

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Refurbishing and recycling IT products with HPEFS can enhance your productivity, capture new value from retired assets, and reduce your environmental impact. The avoided environmental impact that can be achieved using HPEFS IT Asset Lifecycle solutions are pictured below:

2,405,435.10 kg
CO2e saved

This equals approximately **5,975.93** people flying from JFK to LAX

172,566.29 kWh
energy saved

This equals the average summer electricity consumption of approximately **123.73** US citizens

39,988.45 kg
waste kept from landfills

This equals the average waste generated by approximately **49.29** US citizens for a year

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Avoided environmental impact

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Recovered critical raw materials

Through the refurbishing process, the recovery of critical raw material can result in avoided mining and new production. This list is comprised of materials from the EU Critical Raw Materials Act and other materials of general interest that can be impacted.

*European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (2023), Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing a framework for ensuring a secure and sustainable supply of critical raw materials and amending Regulations (EU) 168/2013, (EU) 2018/858, 2018/1724 and (EU) 2019/1020.

Element	Qty in kg
Copper	1,484.37
Light Rare Earth Elements	0.5
Lithium	89.82
Magnesium	0.68
Manganese	409.83
Nickel	25.81
Phosphorus	0.09
Silicon metal	12.68
Titanium metal	0.89
Aluminum	4,164.91
Steel	7,778.54
Iron	20.67
Gold	6.57
Silver	13.54
Tin	55.58
Brass	147.26
Lead	35.06
Zinc	152.93
Chromium	1.28
Molybdenum	45.3
Palladium	0.29
Zircon	3.36
Ferrite	159.68
Graphite	436.94
Glass	1,695.07

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Recycling

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When refurbishing is not feasible, material is sent to HPEFS recycling partners. By recycling these materials, we are able to maximize resource circularity through the recovery of e-waste products, components and materials.

Level 1

Quantity of overall recycled material

10,137.21 kg
of recycled material

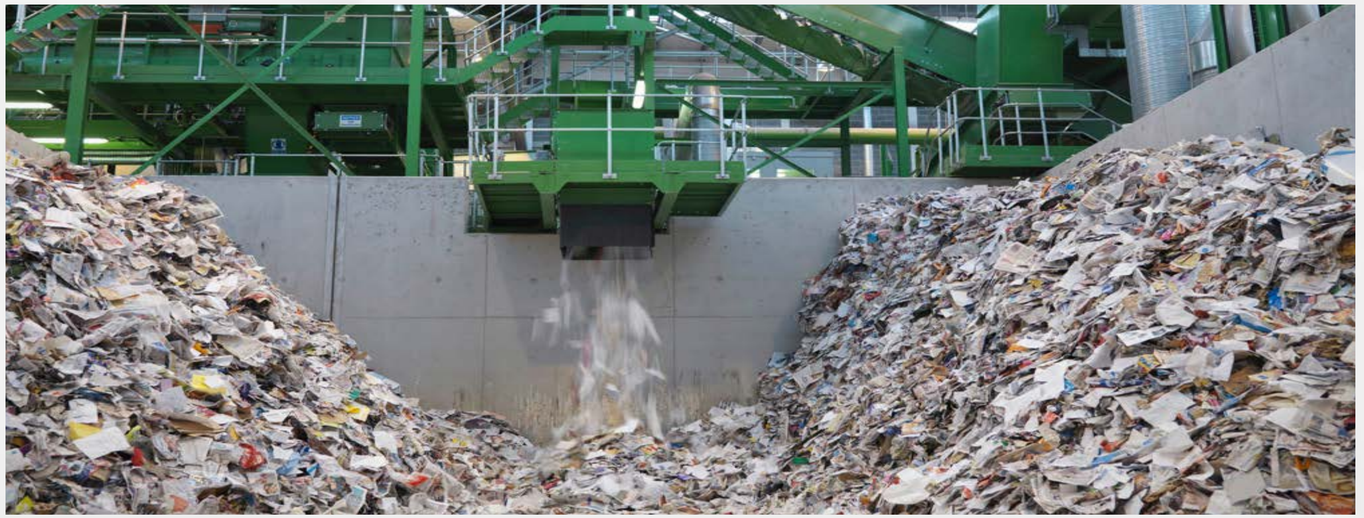
Level 2

Quantity of recycled group of material

2,949.07 kg Plastic
36.31 kg Glass
6,041.43 kg Ferrous metals
1,098.19 kg Non-ferous metals
12.21 kg Other non-metals

Level 3

Critical raw materials recovered through the recycling process can result in avoided mining and new production of critical raw materials. Below is a depiction of the estimated recoverable raw materials from the Critical Raw Materials Act and other materials of general interest contained in the products you returned.



*European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (2023), Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing a framework for ensuring a secure and sustainable supply of critical raw materials and amending Regulations (EU) 168/2013, (EU) 2018/858, 2018/1724 and (EU) 2019/1020.

Element	Qty in kg
Copper	405.74
Light Rare Earth Elements	0.01
Lithium	1.79
Magnesium	0.01
Manganese	7.83
Nickel	9.4
Phosphorus	0.07
Silicon metal	0.17
Titanium metal	0.01
Aluminum	290.25
Steel	4,349.28
Iron	0.51
Gold	2.43
Silver	3.91
Tin	20.98
Brass	7.74
Lead	10.93
Zinc	26.92
Chromium	0.04
Molybdenum	1.32
Palladium	0.1
Zircon	0.11
Ferrite	2.04
Graphite	8.72
Glass	26.14

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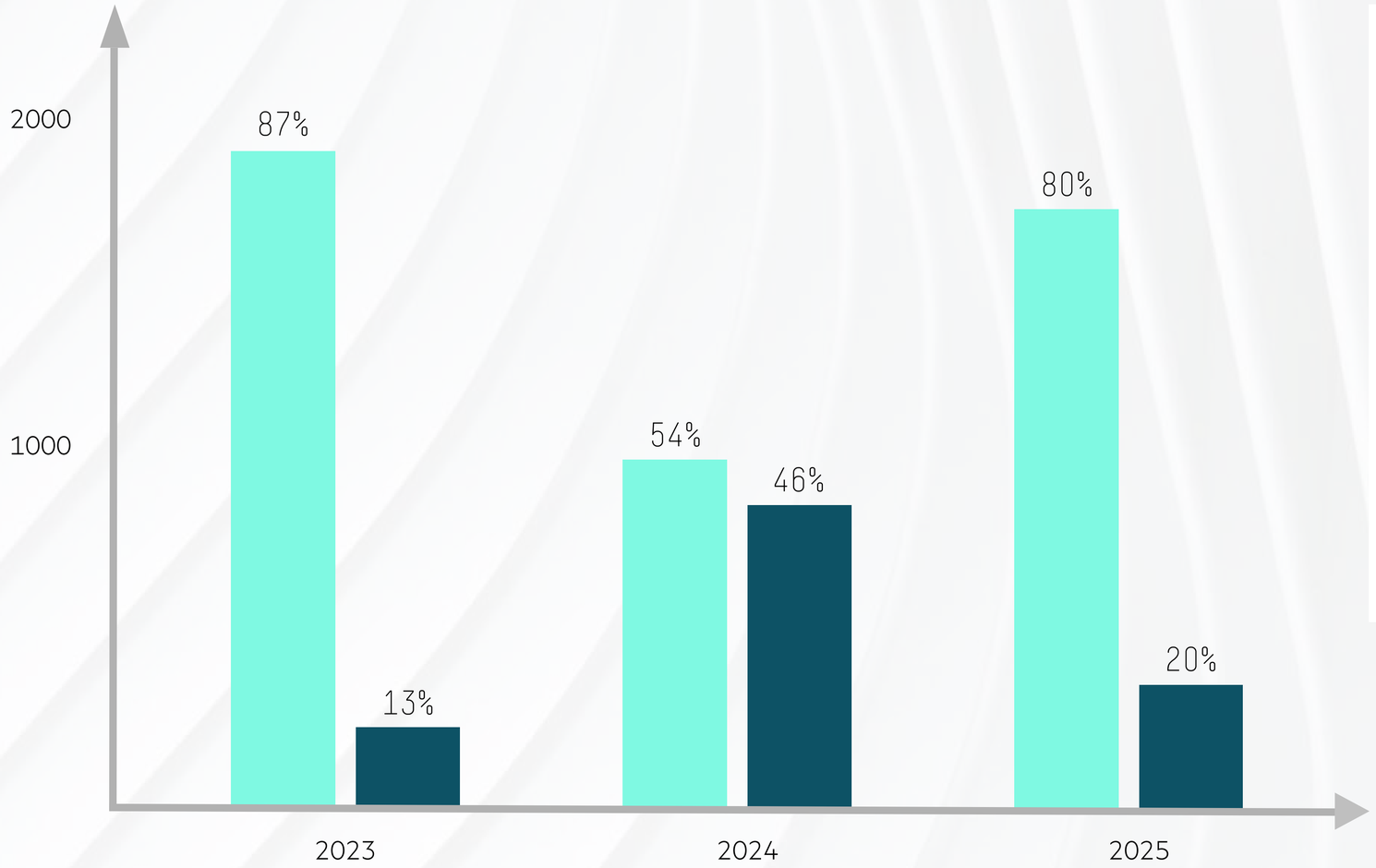

This chart reflects the rates of your Refurbished and Recycled **Workplace** and **Enterprise** assets in the period noted below.

Refurbished

Recycled

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ESG reporting

The GHG impact figure can be directly adopted and added to the client's GHG inventory under the correct Scope 3 emission categories. The emissions for both forms of contract are reported under the GHG Protocol in the year of sending the shipment to HPEFS.

The nature of the engagement with HPEFS determines under which Scope 3 categories clients should report the GHG emissions of the service provided:

- **Financing clients.** Scope 3, category 4 'Upstream transportation and distribution': reporting category for clients who send back assets to HPEFS at the end of a leasing agreement.
- **HPE Asset Upcycling Services clients.** Scope 3, category 5 'Waste generated in operations': reporting category for clients who own their devices and send assets to HPEFS for their asset upcycling or ITAD service.

The GHG Protocol only reports actual emissions and does not account for avoided emissions.

Note

Consult with your environmental advisors to guide you on how to incorporate this information into your reporting obligations.

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GHG impact

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In accordance with the GHG Protocol accounting standard, the table presented summarizes your organization's estimated Scope 3 emissions associated with your contracted HPE Financial Services solutions:

HPEFS service	Scope 3 category	Emissions generated from recovery in kg
Financing clients	Upstream transportation and distribution	2,733.09
Asset Upcycling Services clients	Waste generated in operations	10,021.29

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How to use information in this report

Whether your organization has a mature sustainability strategy or is just starting it is important to understand that everyone in the organization has a role to play. Below is an outline of how differing teams across the organization can use the data in this report to drive your sustainability strategy.

IT managers, procurement teams, etc.

IT managers and buyers are under increased pressure to ensure compliance with social and environmental criteria. Transparency from suppliers is critical for buyers to exercise their duty of compliance. Sustainability criteria is valued in procurement decisions which can be supported by data in this report.

Customers in these functions can use this data to:

- Prove to their organization the benefits of their circular IT disposition practices.
- Bring valuable data to the CIO, CSO, Compliance teams, and Sustainability teams to use in ESG reporting disclosure to their organization.
- Demonstrate the contribution that their sustainable IT choices bring to their organization's sustainability initiatives and goals.

CIO, CSO, Compliance teams, Sustainability teams, etc.

Executive level functions, CIOs and IT executives are increasingly being held accountable for carbon emissions reduction. Chief Sustainability Officers, Compliance and Sustainability teams are having to manage their organization supply chain ESG risks as well as collecting data and metrics to ensure regulatory compliance and track progress towards their sustainability goals.

Customers in these functions can use this data to:

- Incorporate the GHG emissions from end of use IT assets activities into their organization's GHG Protocol aligned carbon accounting".
- Promote the benefits of circular IT disposition practices within their organization.
- Identify areas for improvement in the end of use IT assets strategy.
- Embed sustainability into processes and decision making.

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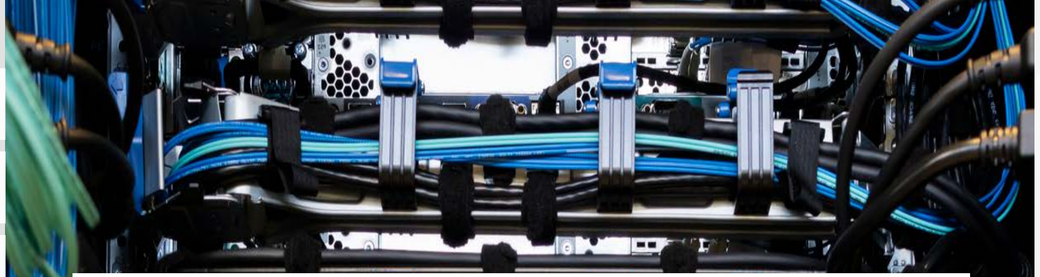

Keep your IT equipment in good working order and maximize its value in the Circular Economy

1

Have a company-wide IT equipment policy in place

2

Keep your equipment in like-new physical condition

3

Chose a trusted partner to help you manage the end of use phase of your IT assets

4

Delete all data and remove on-device security features before returning to your IT asset lifecycle partner

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