PRODUCT-AS-A-SERVICE (PAAS):

AN ECONOMICAL WAY TO CIRCULARITY LEADERSHIP

Frances Edmonds: Head of Sustainable Impact, HP Canada

Pascale Gonthier: Solutions and Services Leader, HP Canada

Stephane Pacquin: Enterprise Sales Manager

Corporate Canada section 92 of the Truth & Reconciliation calls to action

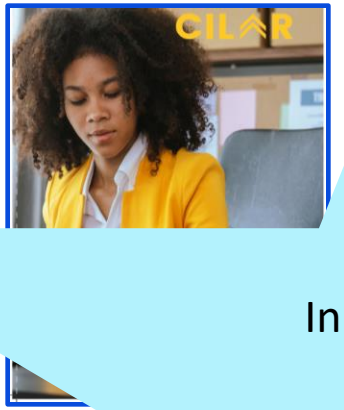
Adopt UNDRIP as a reconciliation framework & apply its principles, norms and standards to corporate policy and core operational activities involving indigenous peoples and their lands and resources. Including:

1) Meaningful consultation, building respectful relationships & obtaining free prior & informed consent
2) Ensure that Aboriginal people have equitable access to jobs training and education opportunities in the corporate sector & that Aboriginal communities gain long term sustainable benefits from economic development opportunities
3) Provide education for management & staff on the history of aboriginal peoples, including the history & legacy of the residential schools & UNDRIP…. See more

Some of HP's Actions on Truth & Reconciliation

- Partnered with Chapter One to provide children living on or near reserves with one-on-one reading time with an HP employee volunteer and sponsored a digital children's book with Indigenous themes and language, written in collaboration with communities, an Indigenous writer, and an Indigenous Illustrator. Check out the *Weaving Cedar with Auntie* book.
- Co created the CILAR (Coalition of Innovation Leaders Against Racism) talent playbook to assist organizations in attracting and retaining diverse talent.
- Supported ComKids, an organization committed to providing limitless potential for youth from grade 7-12, many of whom identify as Indigenous, by providing technology, technical support, and mentorship to improve digital equity.
- Working with LSF to add Indigenous ways of knowing into a whole of school approach in the Sustainable Future Schools program.

Some of HP's Actions on Truth & Reconciliation



Indigenous pricing initiative

For details email HPIndigenousPricing@hp.com

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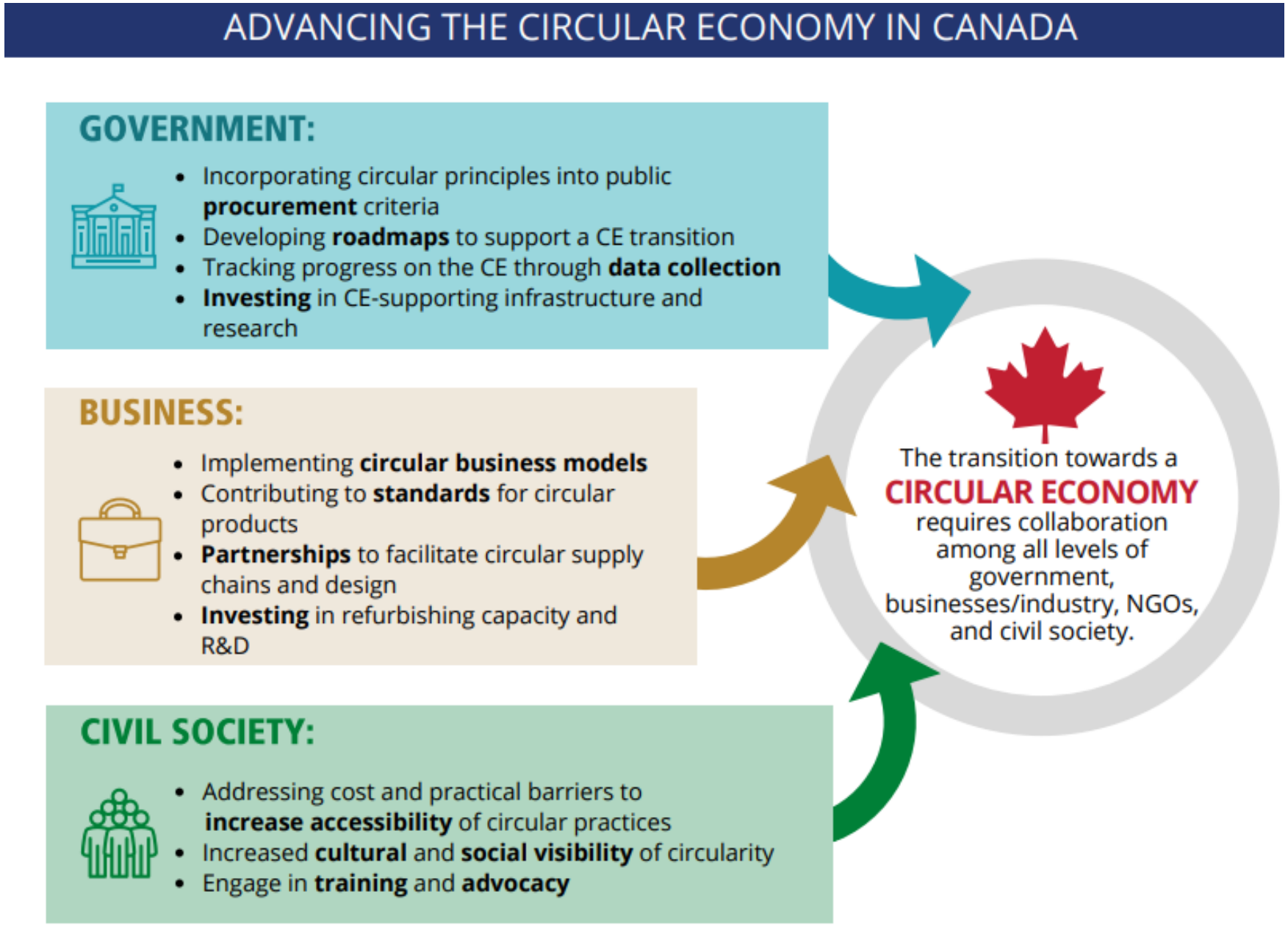
Why Buying as a Service is the ***single biggest impact*** you can have to advance the circular economy

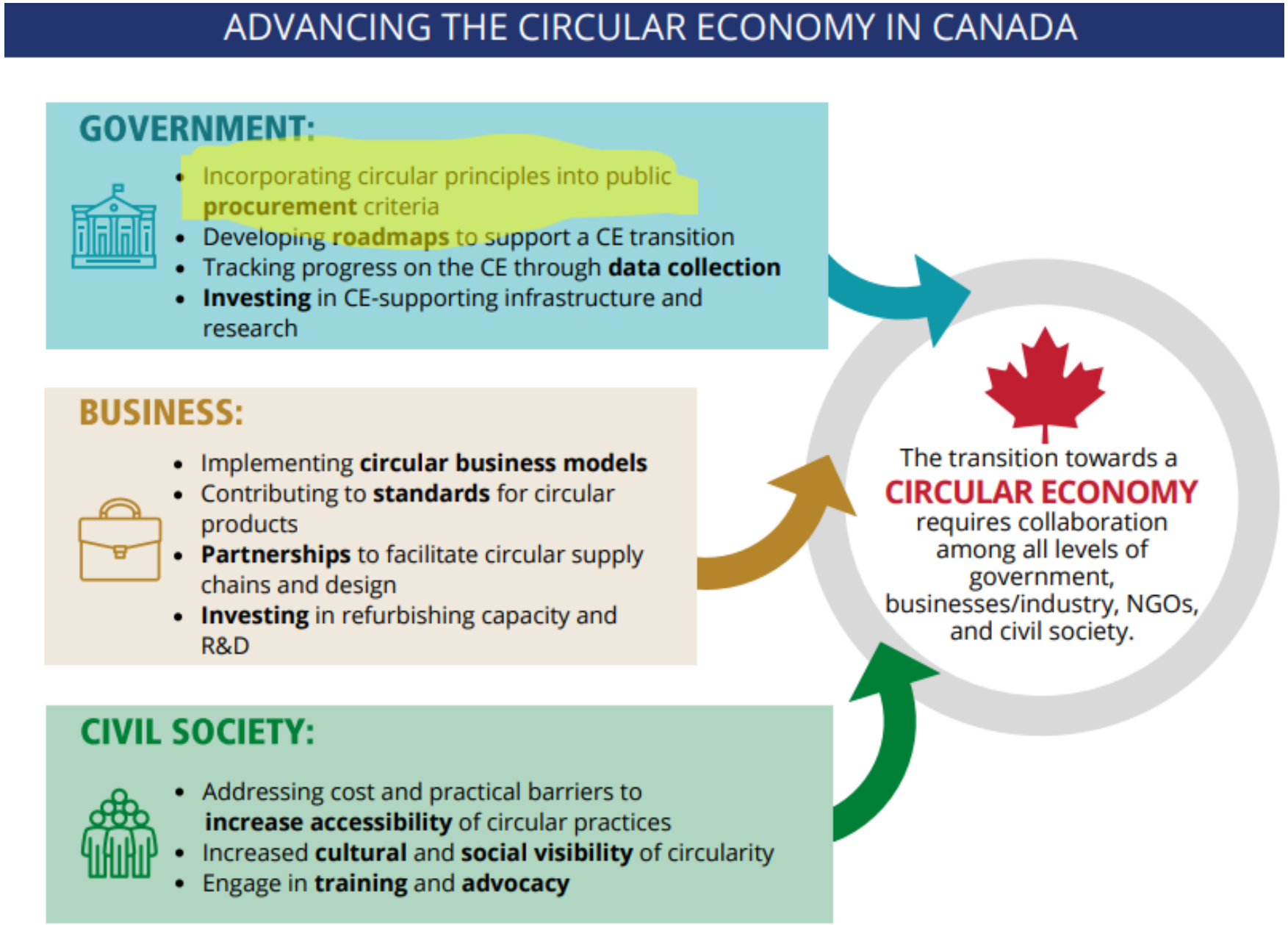
Session objectives : learn about

- the principles and relevance of acquiring technology as a service;
- operational, environmental, and economic benefits observed;
- main lessons from the new CELC and BCIT white paper on PaaS.
- concrete examples of implementing PaaS (Product as a Service) in an organizational context;

CCA Expert Panel on the Circular Economy – top recommendations



CCA Expert Panel on the Circular Economy – top recommendations



“Habitual purchasing practices are the single largest barrier to realizing a more sustainable economy.
Unless we innovate
the way we buy & what we buy we will continue to reproduce the social environmental & economic impacts that we experience today.”

Sam J Hummel –
former CEO of the Sustainable Purchasing Leadership Council

DaaS has lower environmental impacts than retail for all Lifecycle Assessment categories

Compared with transactional sales, DaaS:

- reduces GHG emissions by 25%,
- improves resource efficiency by 28%,
- decreases ecosystems impacts by 28%,
- and reduces human health impacts by 29%.

Impact reductions range between 25-30% compared to the linear model.

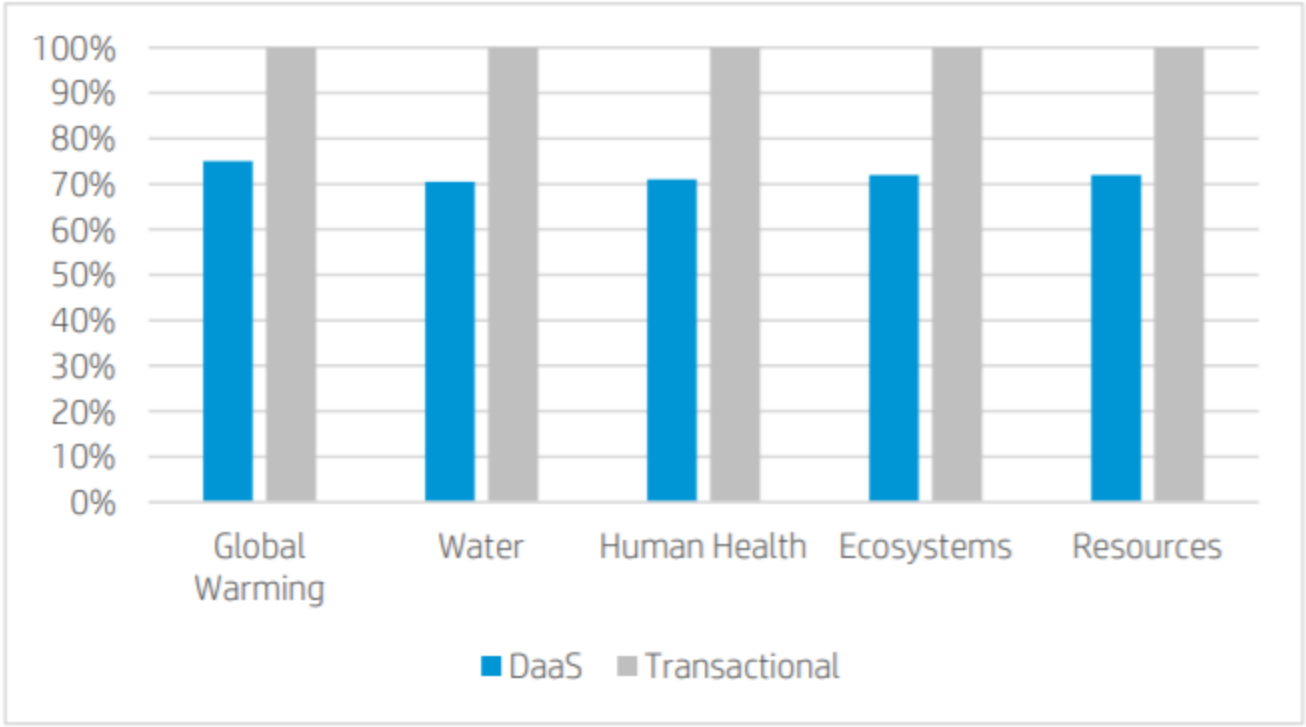
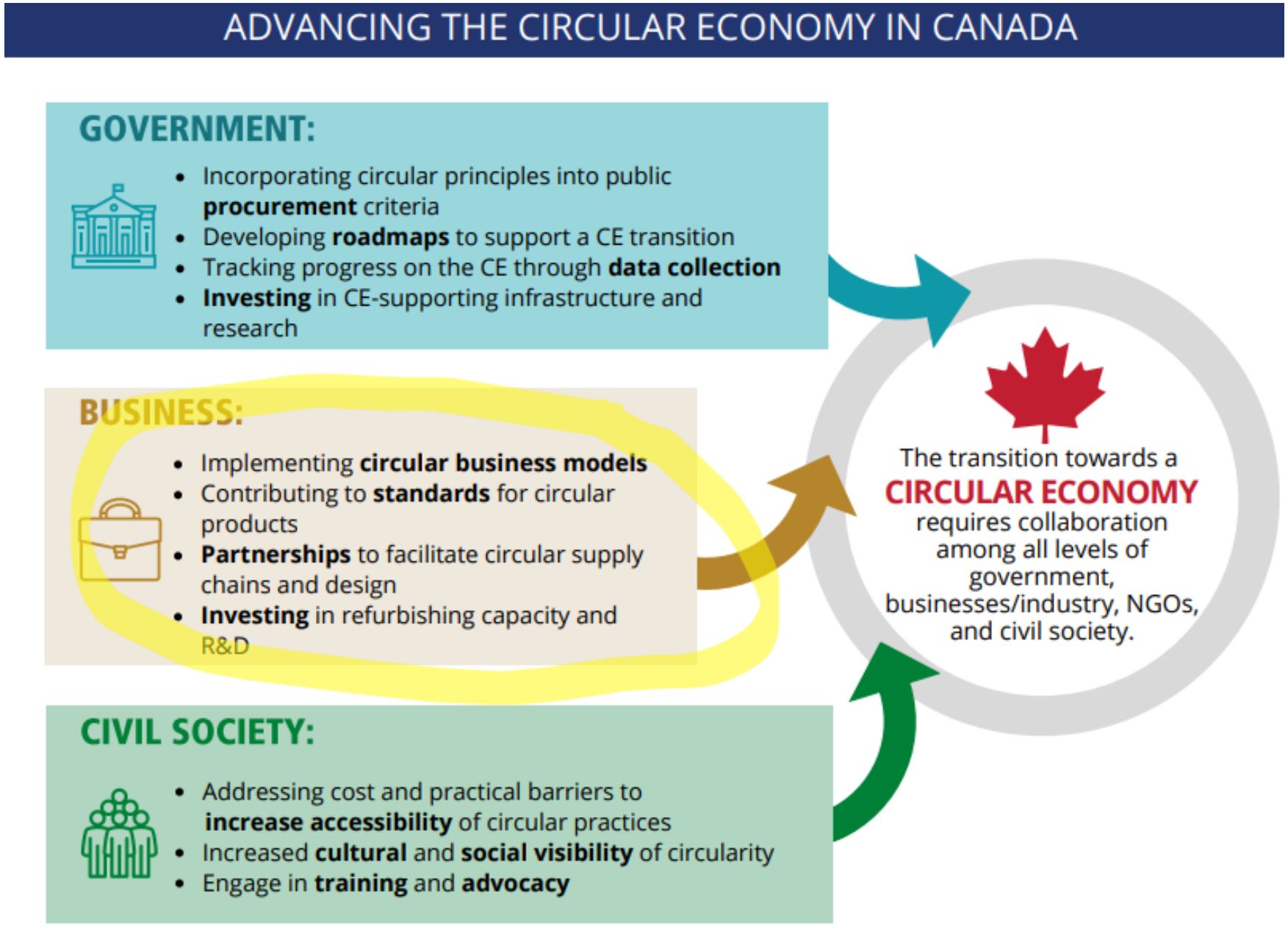


Figure 1: Comparison of Device as a Service to traditional transactional model

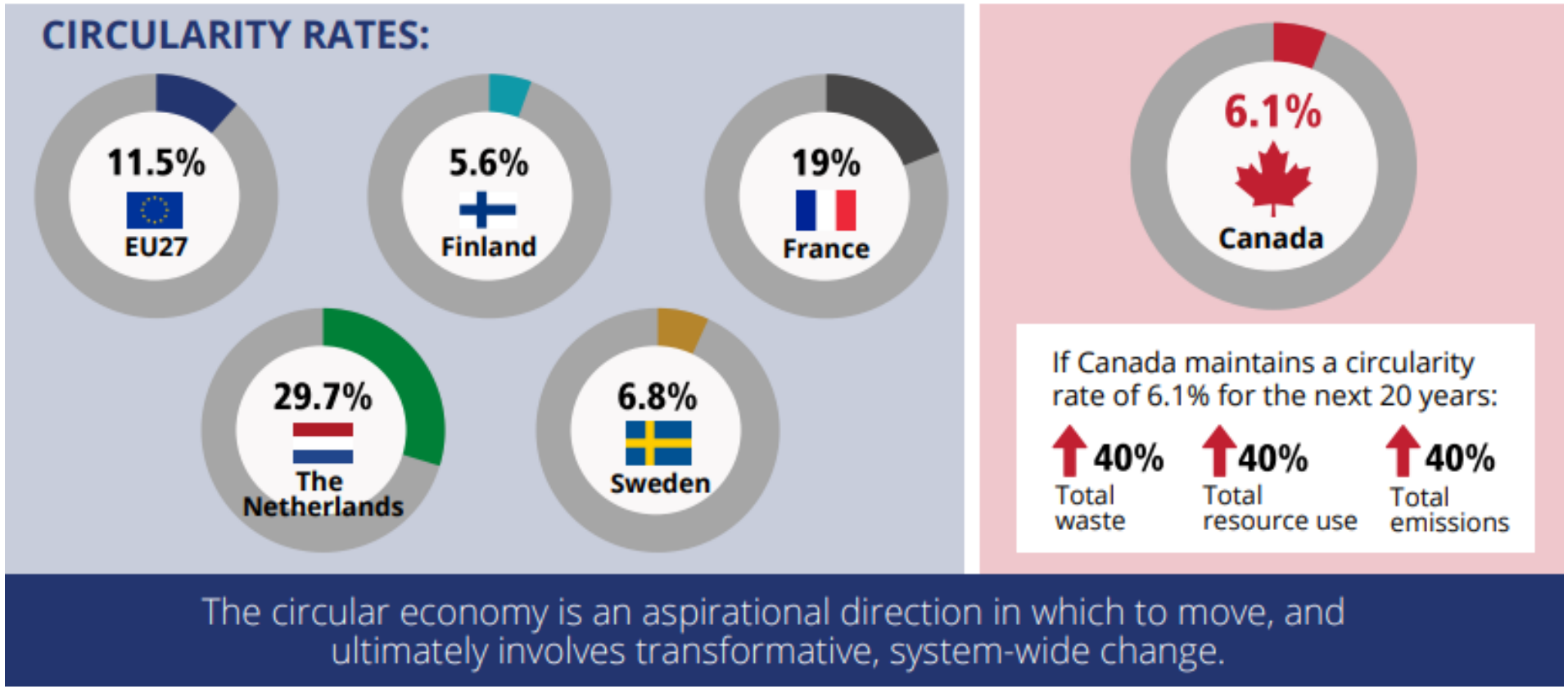
https://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c06646300

CCA Expert Panel on the Circular Economy – top recommendations



HOW CIRCULAR IS CANADA?

Indicators of the circular economy can include measures of material use, environmental impact, and socio-economic impact. The **circularity rate** is the percentage of the economy's material needs which are filled with recycled or recovered materials. For the first time ever, a circularity rate was calculated for Canada. Using a similar material flows approach to that of the EU, the Expert Panel estimated that the circularity rate of Canada is **6.1%**.



The circular economy is an aspirational direction in which to move, and ultimately involves transformative, system-wide change.

CCA EXPERT PANEL ON THE CIRCULAR ECONOMY

HTTPS://CCA-REPORTS.CA/REPORTS/THE-CIRCULAR-ECONOMY-IN-CANADA/

“The real reason HP exists is to make a difference.”

HP is Canada's Most Sustainable Technology Company.

Here's why ⬇

View our multi year story of sustainability leadership in our milestones document
View our annual sustainability performance in our 24th annual Sustainable Impact Report

Value Chain & Society

- Ranked 4th of 45 companies in Know the Chain's ICT Benchmark 2025, a tool to understand and address forced labour in supply chains.
- HP offers employees 4 hours of paid volunteer time per month, dollars for doers, donation cash matching up to $10,000 USD per year. HP employees volunteered 360k hours in 2024, reaching over one million hours since 2016.
- HP has been recognized for the 6th time on the 2025 World's Most Ethical Companies list by the Ethisphere Institute.
- HP has the world's most secure printers and PCs.[1,2]
- In January 2024, HP was the first of its competitors to update its Global Human Rights policy to include UNDRIP in accordance with Call to Action 92 of Canada's Truth and Reconciliation report.
- HP Life offers over 30 free skills training courses in 8 languages, enrolling over 2 million users since 2016.
- Developed long term partnerships with various Canadian NGOs that deliver digital equity to improve access to healthcare, education, and economic opportunity for marginalized groups.
- The HP Digital Equity Accelerator supports HP's goal of advancing digital equity for 150 million people globally by 2030. In Canada, as part of this program in 2024, three Canadian charities (Access to Success, Chapter One, & Jays Care Foundation) each received USD$100,000 in grants and HP technology valued at USD$100,000 together with six months of capacity building training to aid them in scaling digital equity impact.

Sustainable Impact

- The Amplify Impact program provides free resources to Partners to enhance sustainability performance. Since its launch in 2022, over 5,000 courses were taken in Canada. HP also met its FY25 goal of 50% Managed Partners sign-ups early.
- Ranked 8th as one of Canada's 2025 Top 10 International Corporate Citizens by Corporate Knights for the 11th year in a row, the only print company on the list.
- Listed on Corporate Knights 2025 Global 100 Most Sustainable Corporations for the 10th year in a row.
- Listed on Corporate Knights Clean200 Companies in 2025, a list of the world's largest companies ranked by clean revenue.
- Named the Most Environmentally Progressive Technology Company by the Canadian Printing Awards for FY24.

GLOBAL100 2025 THE WORLD'S MOST SUSTAINABLE CORPORATIONS ©

Canadian PRINTING AWARDS 2024 • WINNER Most Environmentally Progressive Technology Company

Customer

- Listed on Canada's Greenest Employers list in 2025 for the 18th year in a row, the only PC vendor on the list.
- HP Planet Partners Program has recycled 1 billion+ HP print cartridges as of December 31st, 2022.
- Among the first 10% of companies with GHG emissions reduction goals approved by the Science Based Targets initiative and the first tech company globally to disclose full carbon footprint including Scope 3, independently audited and verified.
- Most comprehensive environmental education program in Canada's tech industry that spans from kindergarten through higher education, and to Channel Partners and their employees.
- HP has used 2,876 tonnes of ocean-bound recycled plastic in its products since 2016.
- In 2025, HP was given a Platinum rating (equals a score in the top 1% of all respondents) by EcoVadis for the 15th consecutive year in recognition of its sustainability performance.
- 1 billion+ pounds of recycled materials have been used in HP products and packaging since 2019.
- HP sources only sustainable fiber for all HP-brand paper and paper-based packaging for home and office printers and supplies, PCs, and displays .

2025 CANADA'S GREENEST EMPLOYERS

1 HP's most advanced embedded security features are available on HP Enterprise-class devices with Future Smart firmware 4.5 or above and is based on HP review of 2024 published embedded security features of competitive in-class printers. Only HP offers a combination of security features for integrity checking down to the BIOS with self-healing capabilities. For more information visit: HP Wolf Security - Computer and Printer Hardware Security | HP® Official Site. HP most secure printer information found here. HP most secure PC information found here.

2. Based on HP's unique and comprehensive security capabilities at no additional cost and HP's Manageability Integration Kit's management of every aspect of a PC including hardware, BIOS and software management using Microsoft System Center Configuration Manager among desktop workstation vendors as of July 2018 on HP Desktop Workstations with 8th Gen and higher Intel® Processor

Scale of HP’s Circularity Goal

On track to use

+5 billion

pounds of recycled, reused, and renewable (circular) materials in our products since 2019[10]

Materials strategy

High-usage in core materials to achieve the most sustainable portfolio


Post-consumer recycled plastic


Reclaimed aluminum


Reclaimed magnesium


Recycled glass

Innovative materials that create stories and impact customers


Ocean-bound plastic & fishing nets

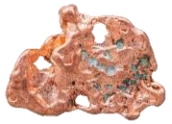

Used cooking oil


Reclaimed polyester


Automotive (2026)

NEW for 2026

HP closed-loop materials recaptured from HP's own recycled products

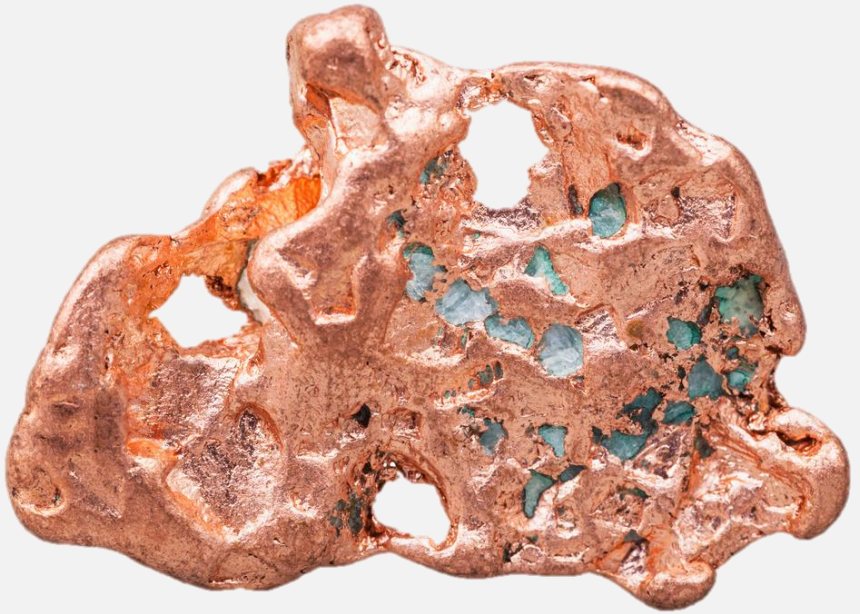

Copper


Plastic

Recast with care. Made to endure.

In 2026 we'll launch the

World's first AI PCs featuring TÜV-certified closed loop recycled metal [28]



What are certified closed loop metals?

HP's electronic waste is repurposed into raw materials to be used in new HP products.

Benefits

Preserve scarce resource.

Quality is not compromised.

Support reduce, reuse, and responsibly manage resources.

TÜV-certified

Adheres to ISO 14021, EN 15343, & ISO 22095 standards, with TÜV Rheinland providing expertise in certification processes

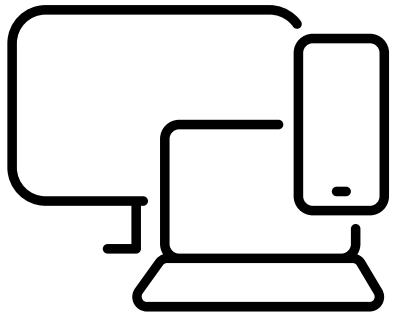
Click here for more information.

We Know Product as a Service works!

Outcomes of Managed Services for HP Global IT[10]

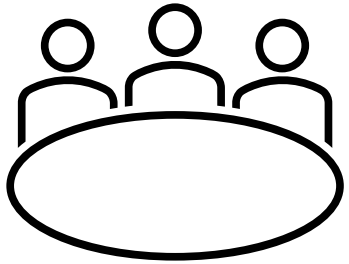
81,000

PCs managed

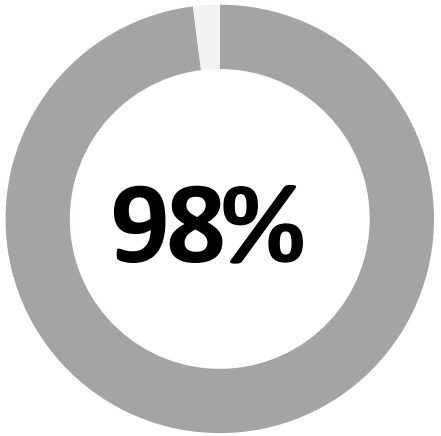


1,600+

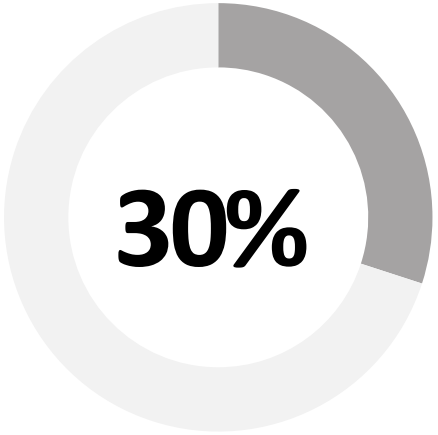
Rooms managed



User satisfaction



Reduction in IT support tickets



What's happening in global supply chains & tech procurement?

1) Chip shortages
2) Commodity prices rising steeply
3) Limited Product availability

What's happening in global supply chains & tech procurement?

1) Chip sho
2) Commoc
steeply
3) Limited

Necessity becomes the mother of invention

The circular economy

Source: The Guardian, 2020.

Wildlife Energy Pollution

World's consumption of materials hits record 100bn tonnes a year

Unsustainable use of resources is wrecking the planet but recycling is falling, report finds

▲ Half of the 100.6bn tonnes of materials were sand, clay, gravel and cement for building, plus minerals quarri for fertiliser. Photograph: Zoonar GmbH/Alamy

70% of greenhouse gas emissions & **90%** of biodiversity loss and water loss

Are tied to material extraction, handling and use

Source: The Circularity Gap Report 2023


Paradigm shift
•Change in thinking
•Change in product design
•Radical collaboration
•Reverse cycle

FIVE BUSINESS MODELS OF CIRCULARITY

Circular Supplies

Renewable, recoverable, or biodegradable sources serve as inputs in design and production

Product As Service

Purchase service or result rather than product or asset

Product Life Extension

Prolong lifespan, utilization, and value through repair, remanufacture, resale

Sharing Platform

Fully utilize assets by maximizing usage and value amongst several users

Resource Recovery

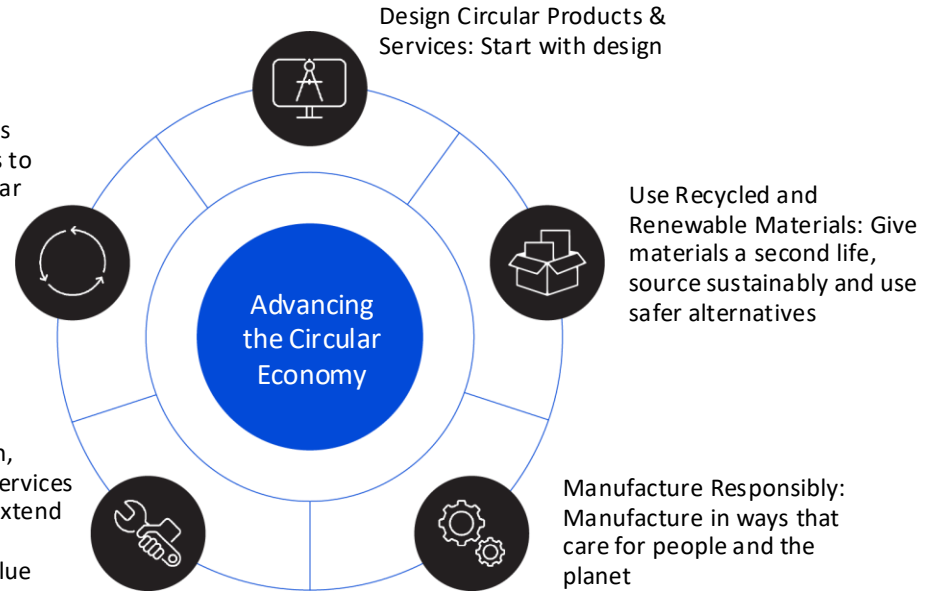
Acquire additional use and value from existing resources by avoiding disposal and impacts from new extraction

CIRCULAR INNOVATION COUNCIL

Empowering Customer Sustainability

We focus on putting customers first with products that last. HP embraces the principles of the circular economy by prioritizing sustainable material choices, circular design, and the repair, recovery, and reuse of our products. Our goal is to reach 75% circularity for products & packaging by 2030[33]

How we'll achieve it



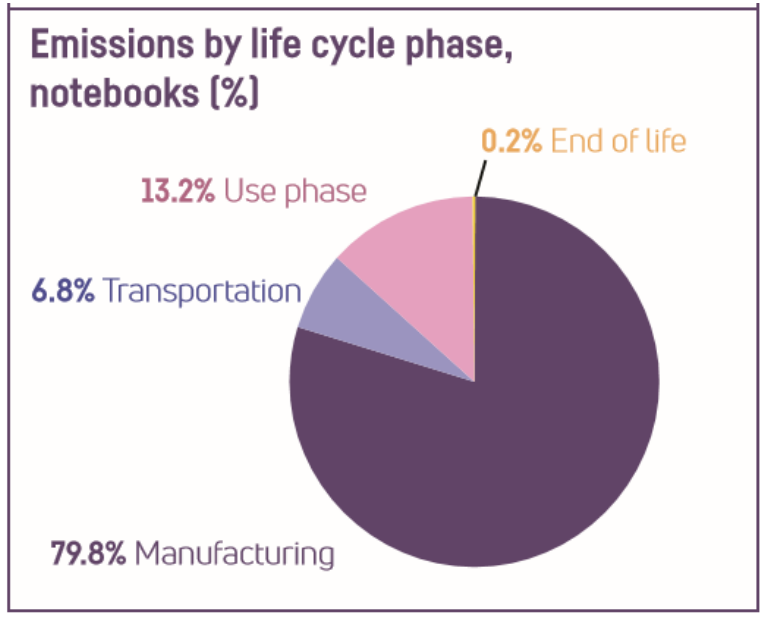
43% Circularity achieved, by weight[32]

+5B Pounds of recycled, reused, and renewable (circular) materials used in our products since 2019.

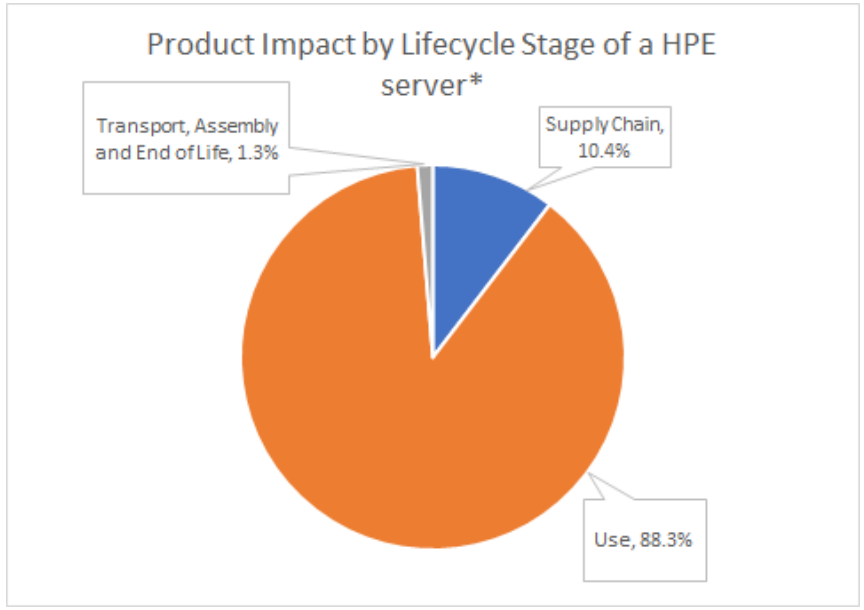
Typical carbon footprints of common technology

Adding 2 years of use to an average PC reduces the carbon footprint by 30%!

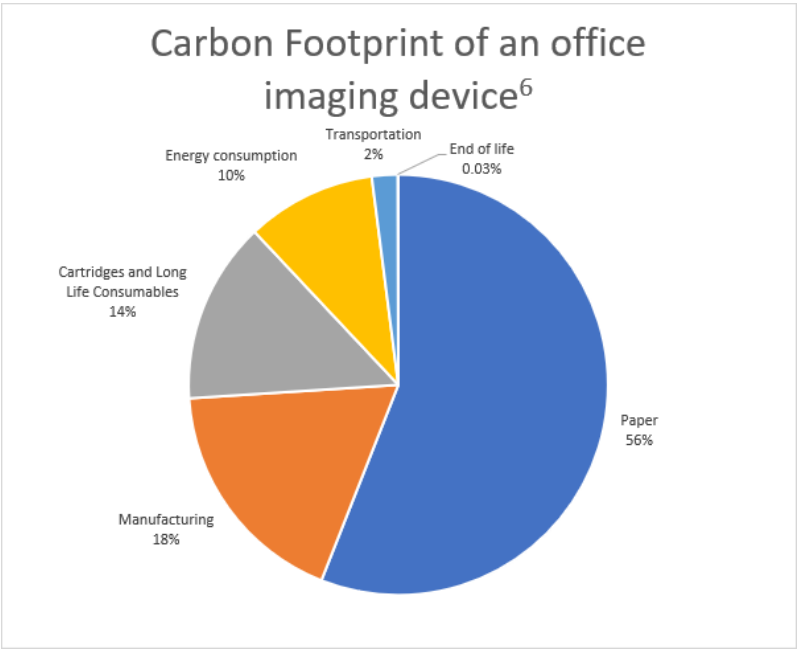
Notebook computer



Server



Printer



Biggest impact: manufacturing **use phase** **paper use**

How HP Supports You in your carbon reduction journey:

HP Carbon Emissions Sync:

A trusted partner in carbon accountability

Partner with HP for credible, transparent carbon impact backed by rigorous lifecycle assessment[1] and validated offsets.

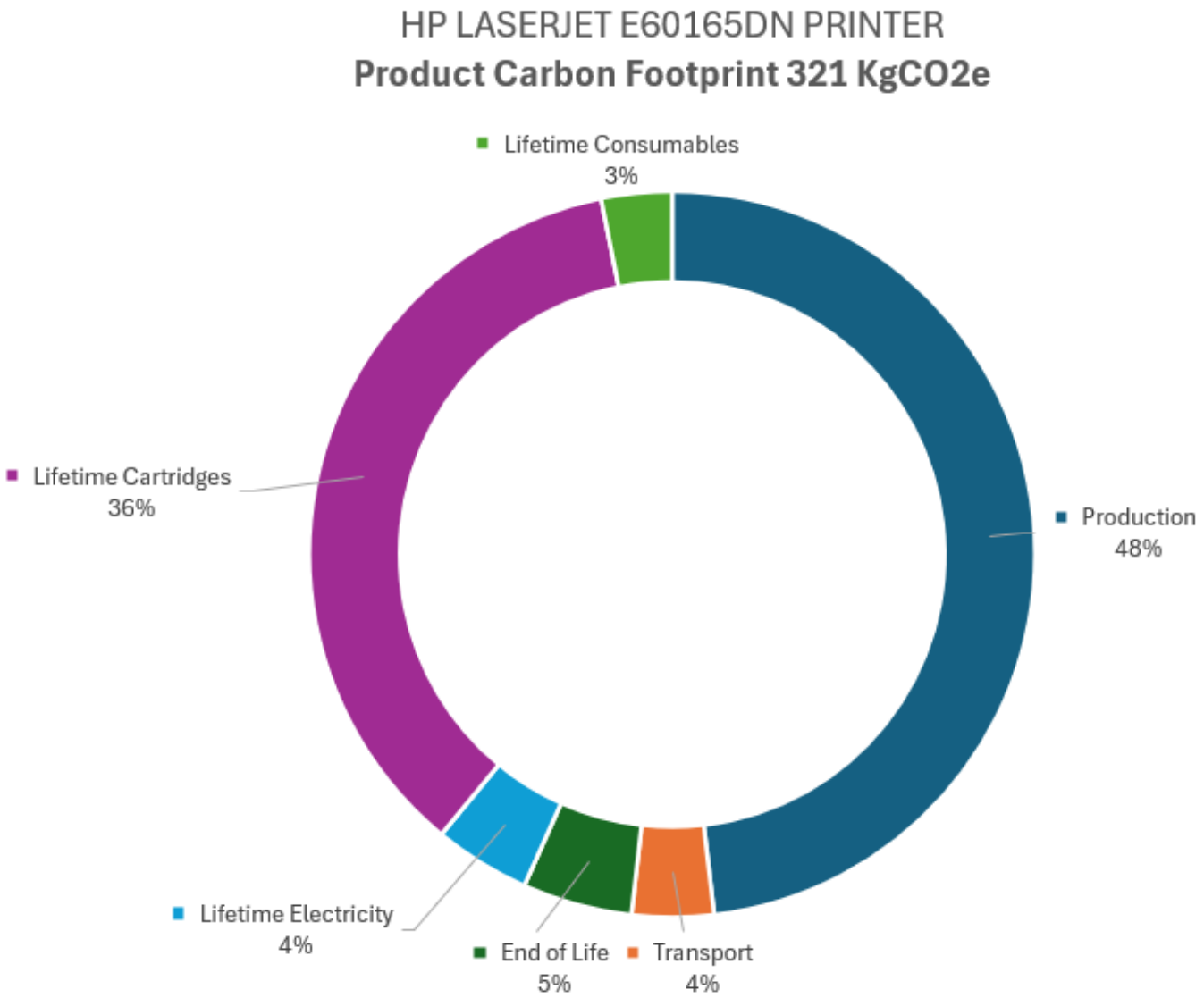
Effortless offset services

HP helps estimate and offset devices lifecycle[1] emissions, supporting sustainability goals from day one.

Measurement Made Easy

Simplify carbon reporting[2] with HP— easily estimate, validate, and document device emissions for clear insight into your tech's climate impact.

Print & reducing carbon impacts



Once a customer has reduced the paper impacts as much as they can ……. the next largest category is **Toner cartridge recycling**

Components with significant impact on CO2

Carbon footprint per lifecycle stage (in KG CO2 equivalent)[1]

Component	CO2 Weight
Solid State Drive SSD	36%
Mainboard, CPU & RAM	32%
Display	18%
Chassis	5%
Batteries	3%
Power Supply & cables	3%
Others	2%
Packaging	<1%

= **86,5%** of the CO2 of a PC.
Life extension of these components is an **absolute priority**

Circular or sustainable Procurement

defn.
Circular Procurement ensures that buyers…

…obtain the best value for money when purchasing

- the best & most sustainable services and goods from
- the best & most sustainable suppliers,

- in support of the organization's stated purpose and strategic goals

From Bob Willard: Sustainability Advantage

What procurement criteria would encourage circular business models?

Circular Supplies

- ✓ What are your recycled content goals and performance
- ✓ Do you use renewable energy in your supply chain & what are your goals for this
- ✓ How much recycled content is in your product (& packaging)
- ✓ If using virgin materials are they able to become circular (avoid substances of concern)

Product as a Service

- ✓ Offer higher scores for PaaS
- ✓ Ask for total cost of ownership
- ✓ Require vendors to manage End of (first) Life of products
- ✓ Look for flexibility in provisioning
  - ✓ Ability to change fleet size based on changing needs such as number of printers or number of vehicles.

Product Life Extension

- ✓ Ask for vendor's design for the Circular Economy program
- ✓ Require design for repairability = availability of:
  - ✓ Extended Warranties
  - ✓ Spare parts
  - ✓ Repair manuals
  - ✓ Refurbishment& reuse
- ✓ IFixit score?
- ✓ Require durability
  - ✓ Tested & Sanitizeable

Sharing

- ✓ Is the product or service offered through a sharing platform
- ✓ Ask for cybersecurity assurance for digital sharing platforms
- ✓ Are products available for use short-term and on demand
  - ✓ i.e. HP 3D printing, Uber, Airbnb

Resource Recovery

- ✓ Are products designed for disassembly & recycling
- ✓ Does the vendor take back everything they sell- what are their goals – transparency & performance
- ✓ Require vendors to manage End of (first) life of products and provide you with a sustainability benefit report

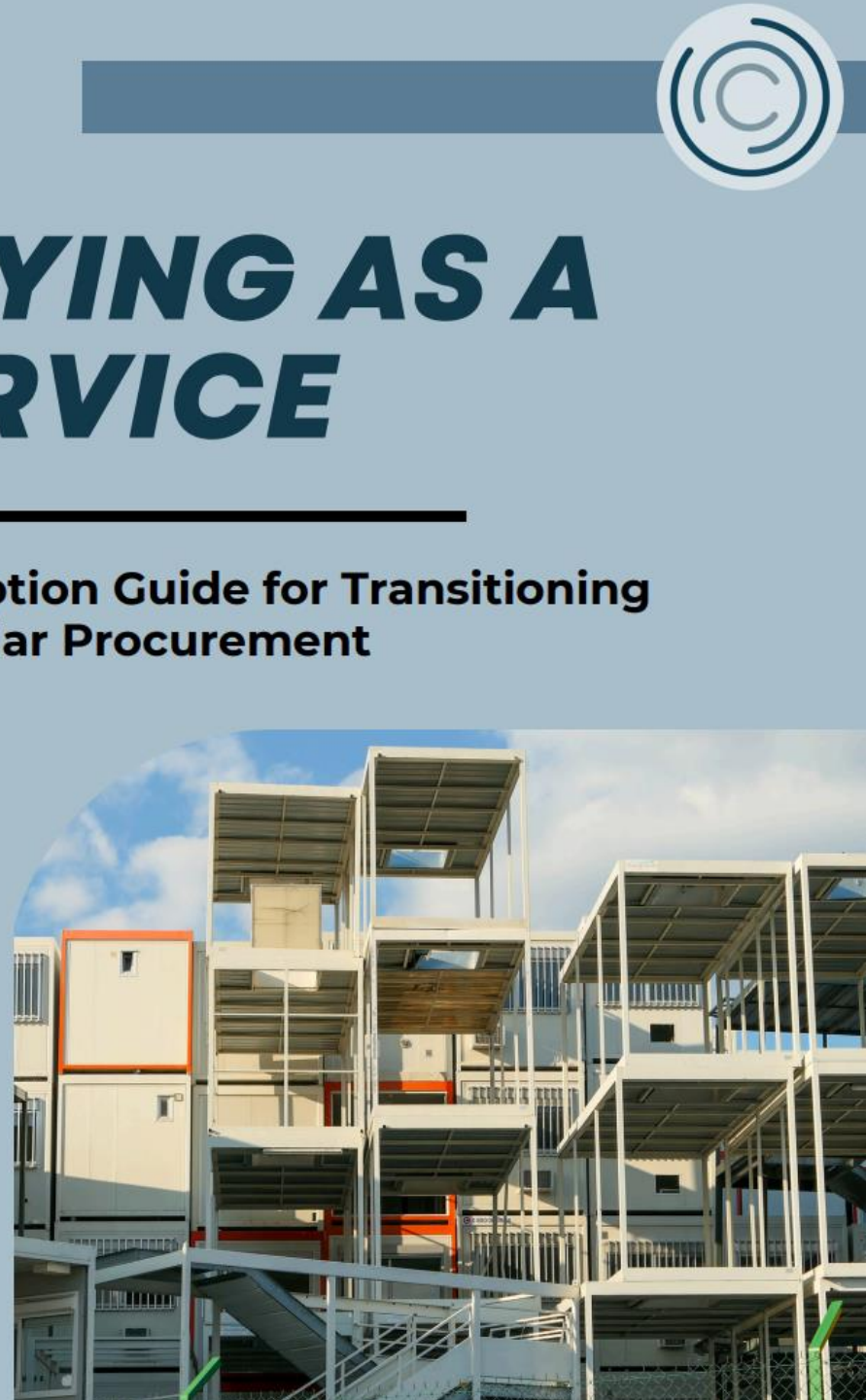
New White paper

- **Authored by BCIT /CELC & HP**

HOW TO USE THIS GUIDE

This document provides comprehensive guidance and context on the BaaS model. Please use the table below to guide you to the sections that are most relevant to your needed support.

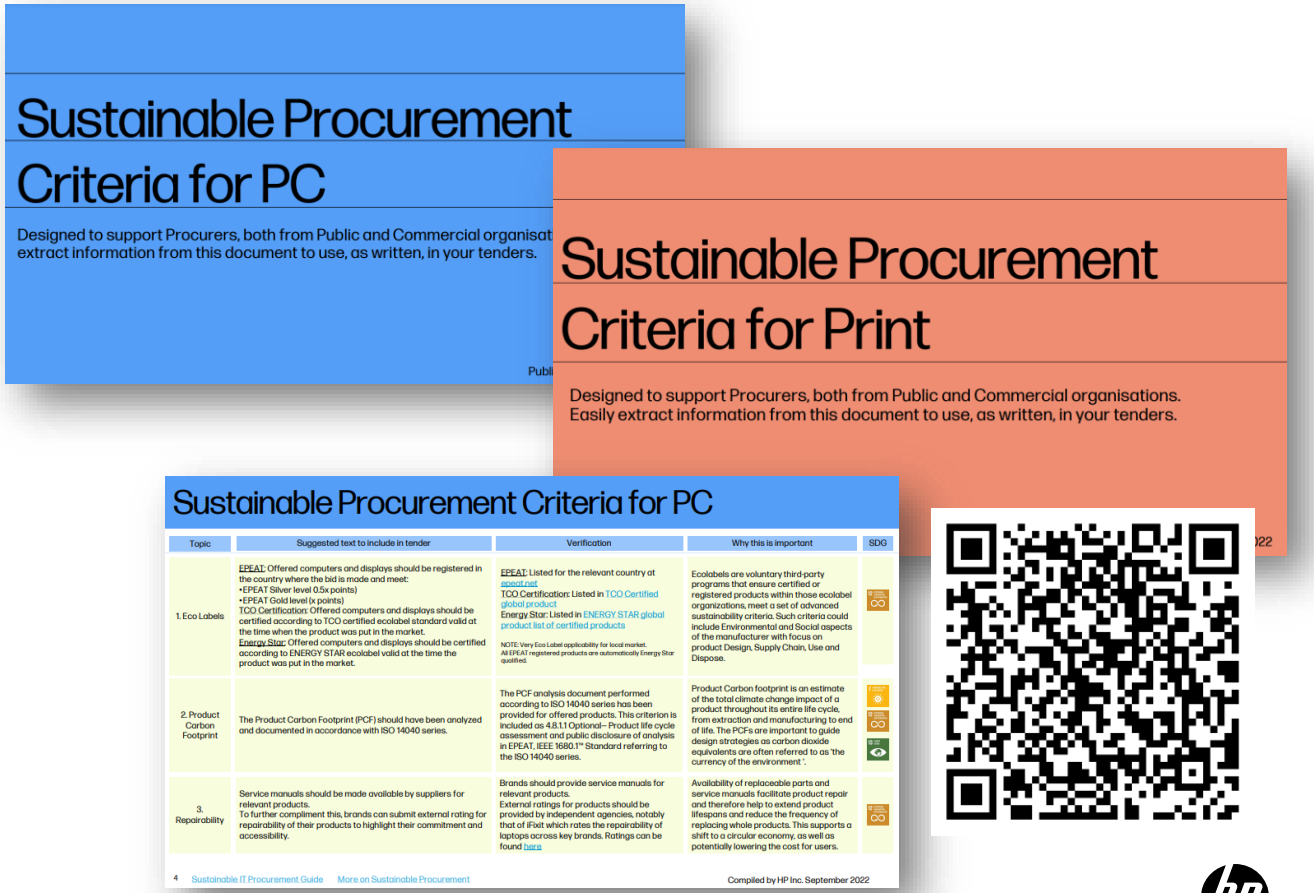
Section Title	Description
Background	Provides an overview of the circular economy and the role that circular procurement can play in advancing the necessary transition.
What is BaaS?	Outlines the key differences between traditional purchasing models and Buying-as-a-Service.
Why Implement BaaS?	Gives examples of potential benefits that organizations can expect from BaaS adoption across six categories.
How to Implement BaaS?	Offers actionable steps using a proven change management model for implementing a successful BaaS model transition for potential customers.
Overcoming Challenges to Unlock the Benefits of BaaS	Highlights common challenges, offers practical suggestions, and addresses key questions to help guide a more strategic and tailored adoption process.



Customize Sustainable Procurement to align with your goals

Guide to Sustainable IT Procurement

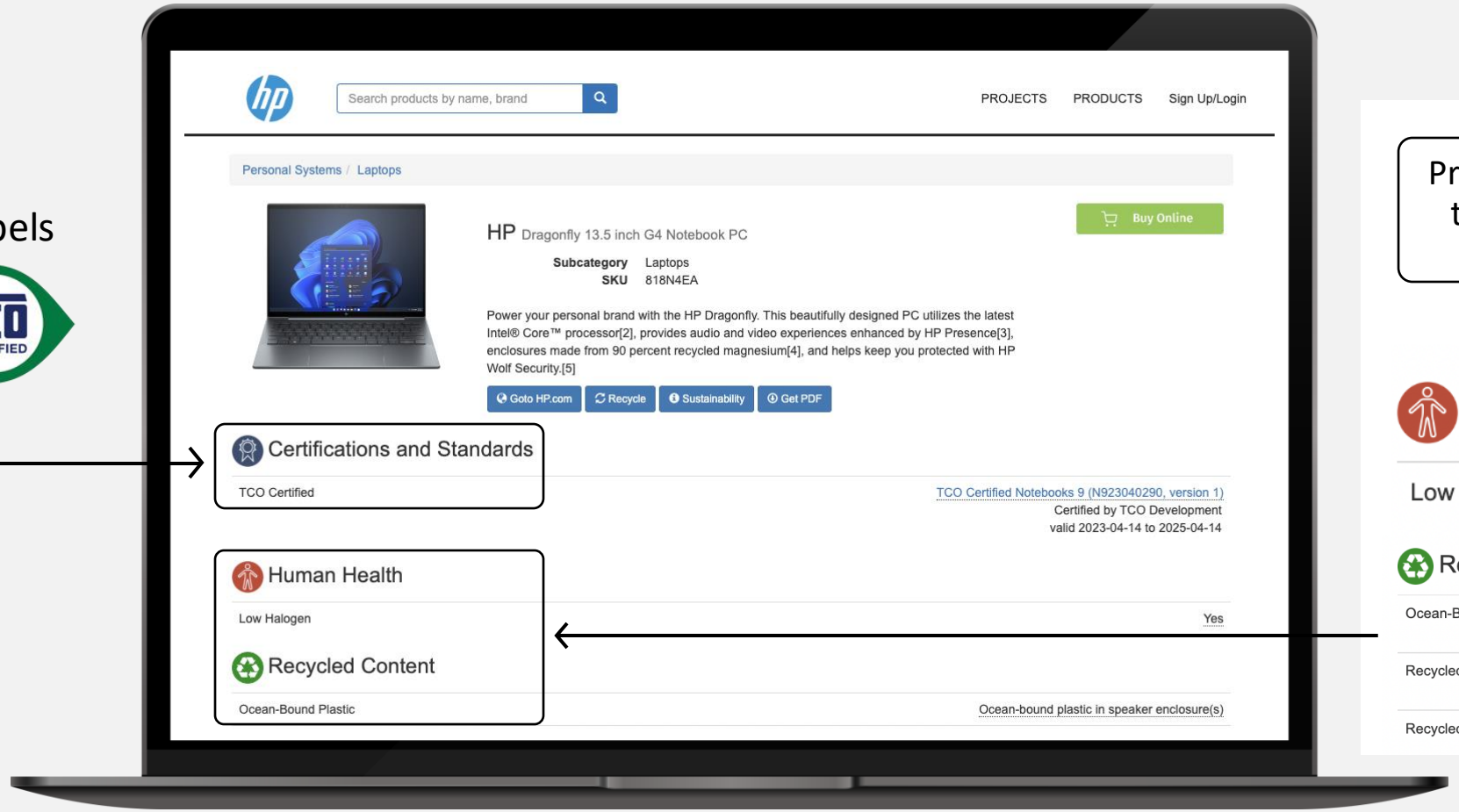
Recommended sustainable Procurement Criteria for PC, Print and Supplies



How to find product sustainability data

https://hp.ecomedes.com/

Ecolabels



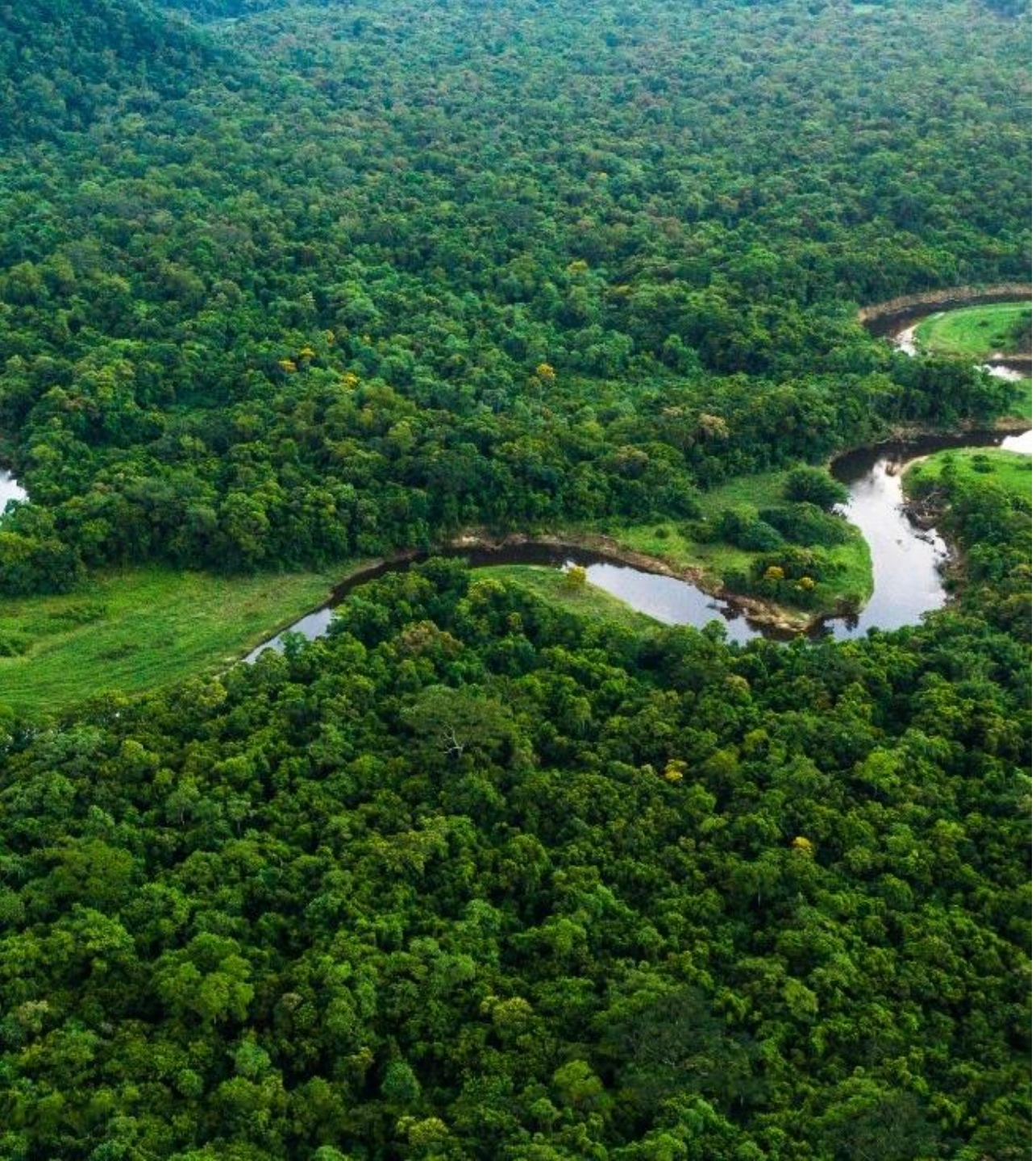
Product tags provide green data to evaluate certifications and standards

Human Health

Low Halogen

Recycled Content

Ocean-Bound Plastic	Ocean-bound plastic in speaker enclosure(s)
Recycled Content	Molded paper pulp cushion inside box is 100% sustainably sourced and recyclable
Recycled Plastic (%)	71,6



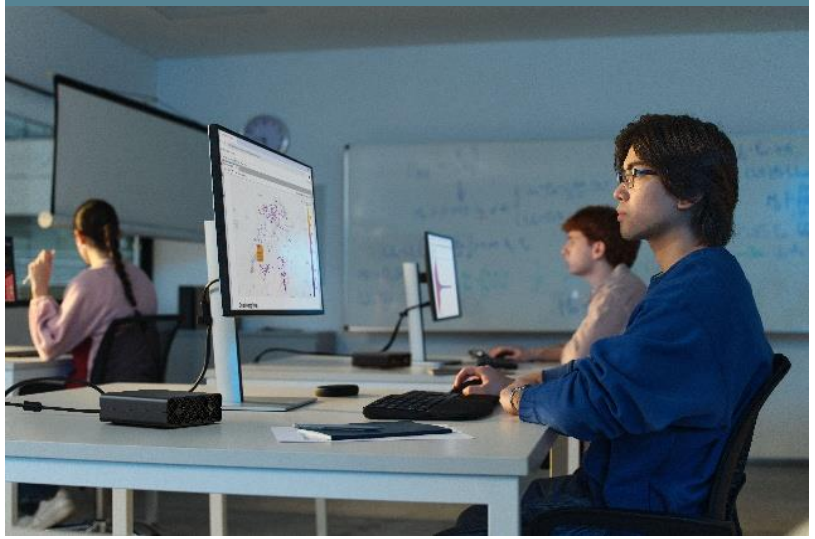
“The betterment of our society is not a job to be le to the few. It is a responsibility to be shared by all.”

— Dave Packard

HP Founder

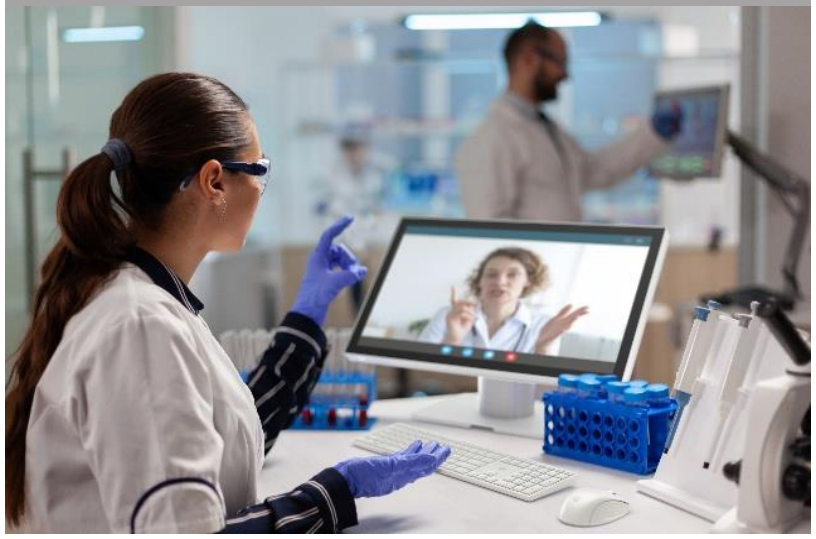
Common scenarios

Mindset



Cost

End User Experience



“Sustainability leaders no longer define procurement as buying goods at the lowest cost. They see it as shaping long-term systems — including digital and workplace systems — that enable sustainable behavior at scale.”

— *World Economic Forum, Chief Procurement Officers Leading on Sustainability* (Jan 2025)

Service Solution Design Framework





Deployment	Services	Fleet Management	Repurpose	Compliant recycling
Provisioning	IT Support	Software	IT Asset disposition HP Planet Partner	

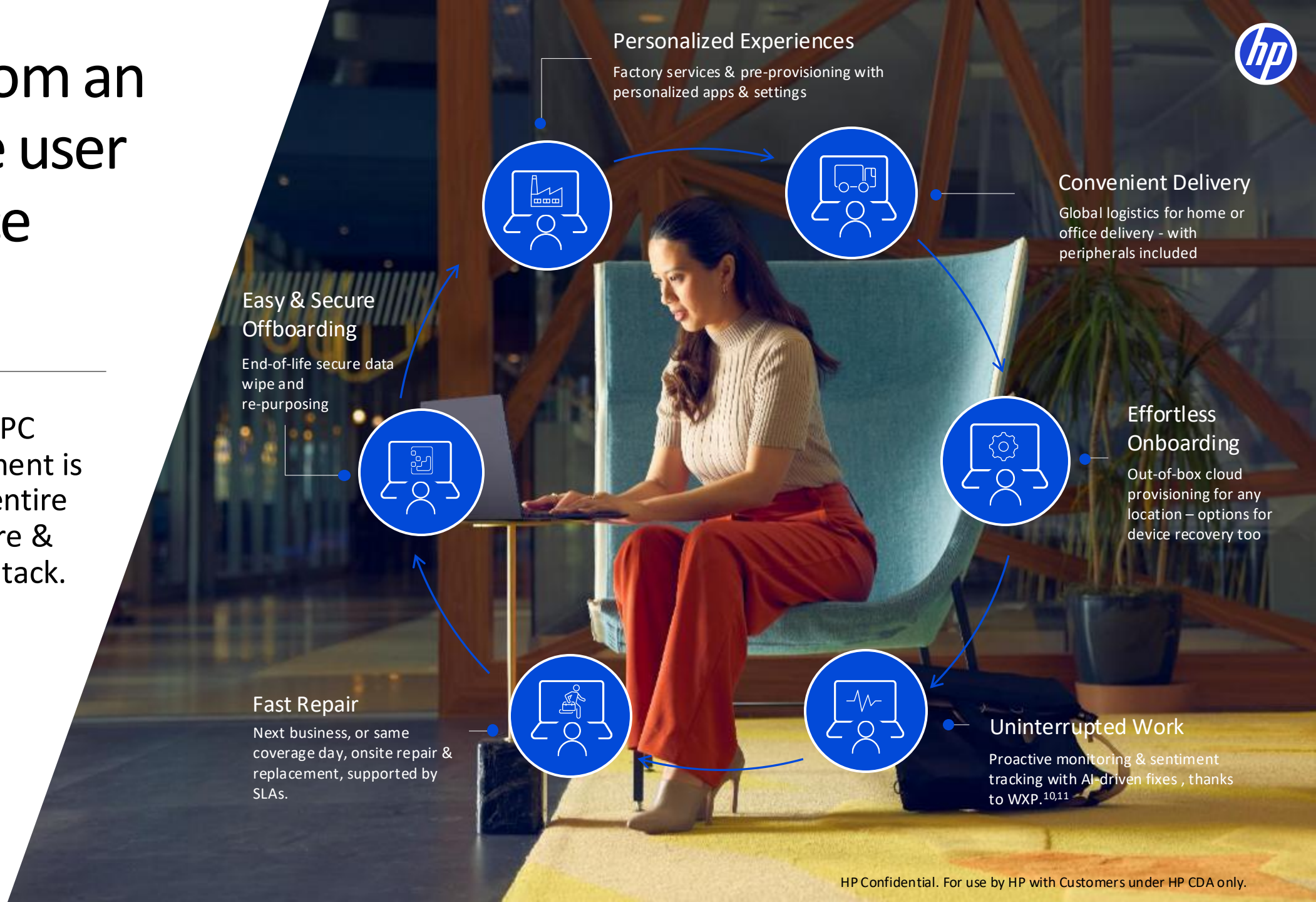
Managed Services

Account Manager
Sustainability Reports
Remote Fleet Engineers

Contractual / Leasing / Purchase

Benefit from an Employee user experience

The advantage to PC lifecycle management is that we own the entire hardware, software & services solution stack.



Benefits – Sustainability lens

Optimize logistics for fewer touchpoints

Extending device life

Repair and Redeploy over replace

Secure & responsible end-of-life device disposition

Examples

"We set out in the beginning to simplify our print environment, improve our security and increase our sustainability"

Eric Behrend Senior Vice-President – Employee Tech Device Experience U.S. Bank

Reduced 34.6M sheets of paper

Securely collected and recycle (12K printers)

1 Based on US Bank's internal analysis of HP Managed Print Services, HP Planet Partner recycling services, and HP Secure Print.

"Our ambitions were high. We wanted a collaboration that could make a difference in terms of scalability, delivery, total cost and end-of-life device handling"

Koen Vandenberghe, Global Category Manager – Corporate Services and IT&T, Bakaert

- Simplified device selection
- End of Life devices donated to local community groups
- Leased devices are returned to HP for repurposing or recycling
- IT staff removed from 9,500 device provisioning (82 business days)

Let’s talk about it