Government Digital Sustainability Alliance (GDSA) Digital Scope 3 Insights Report

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Executive summary

To provide credible reporting and meet net zero targets, government departments must address the scope 3 emissions from their digital estates. These emissions, which encompass the full lifecycle of Information and Communications Technology (ICT) goods and services, are often the largest and most difficult to manage.

The scale of the 'scope 3 problem' requires a partnership approach, both within the organisation between departments and with external bodies including supply chain, Defra, HM Treasury and the Government Digital Sustainability Alliance (GDSA).

The detail in this report highlights recommended approaches and case studies sourced by the GDSA from the ICT industry and academia.

Understanding ICT scope 3 emissions

Scope 3 refers to emissions not directly produced by the organisation, but which occur across its value (supply) chain. For ICT, the major sources of these emissions are from the manufacture of hardware and peripherals (embodied carbon), their transport and end of life treatment and from cloud and off-premises hosting services.

In most departments, scope 3 will typically represent 70% to 90% of the total digital carbon footprint. This is due to the high carbon intensity of electronics manufacturing and the growing dependence on third-party digital services.

Scope 3 high level action plan

This section summarises some of the activities and recommendations from the paper and identifies the steps required to analyse, report and reduce scope 3 emissions. It is split into three sections, indicating the activities and the departments typically involved.

Set up and establish

The process of setting up the action plan and establishing the teams and measurement:

- set aims and strategy (management, sustainability and ICT teams)
- establish the budget (management)
- plan the project (management, sustainability and ICT teams)
- identify the assets (ICT team)
- identify the services (ICT and procurement teams)
- measure emissions (sustainability)
- create the baseline (sustainability)
- analyse the data (sustainability and ICT teams)

Operate and improve

Activities to engage the organisation, individuals and suppliers in carbon reduction:

- plan reductions (sustainability and ICT teams)
- engage procurement (management)
- engage suppliers (sustainability and ICT teams)
- buy greener (ICT and procurement teams)
- engage users (management)
- be greener (management)
- improve data (sustainability and ICT teams)
- track KPIs and trends (sustainability and ICT teams)

Operate and improve

Suggested activities to improve sustainability:

- retain and re-use where possible (sustainability and ICT teams)
- buy second life devices (management, sustainability, procurement and ICT teams)
- assess products and suppliers (sustainability and ICT teams)

- report on service emissions (ICT and procurements)
- dispose responsibly (management)
- profile user requirements (management)
- right-size technology (ICT Team)
- encourage user behaviours (sustainability and ICT Team)

Key reduction measures

Suggested measures to reduce carbon footprint:

- keep your assets for as long as possible, replacing them based on metrics like performance or user experience, not on device age
- purchase second life equipment where possible
- move away from desktops with multiple screens
- choose the right technology for the role and right-size to avoid over provisioning
- ask for suppliers for detail on the emissions from their specific products and services (particularly cloud) and how these have been calculated

Foreword

This insights report by the Scope 3 Working Group of the Government Digital Sustainability Alliance (GDSA) provides practical guidance for public sector ICT, sustainability, and procurement teams to understand, measure, and reduce digital scope 3 emissions in line with the Greenhouse Gas (GHG) Protocol and Greening Government Commitments (GGC).

Despite its size and significance, scope 3 is often poorly understood, inconsistently reported, and excluded from decision-making. This paper seeks to address this by helping public sector organisations understand the issues, options, action areas and potential benefits. This is not a one-off initiative.

Reducing digital scope 3 emissions require a sustained effort across procurement, asset management, service design, and user behaviour. The goal is to report emissions more accurately, but also to create a digital operating model that actively reduces environmental impact.

This GDSA Scope 3 Insights paper has been created based on feedback to the GDSA – Sustainability Leads Survey version 1 issued on 7 April 2025. The survey (sent to sustainability leads across government) identified the need for help in the following areas:

- access to better sustainability data
- access to sustainability reporting systems
- guidance and best practice examples on how best to undertake reporting and reduction
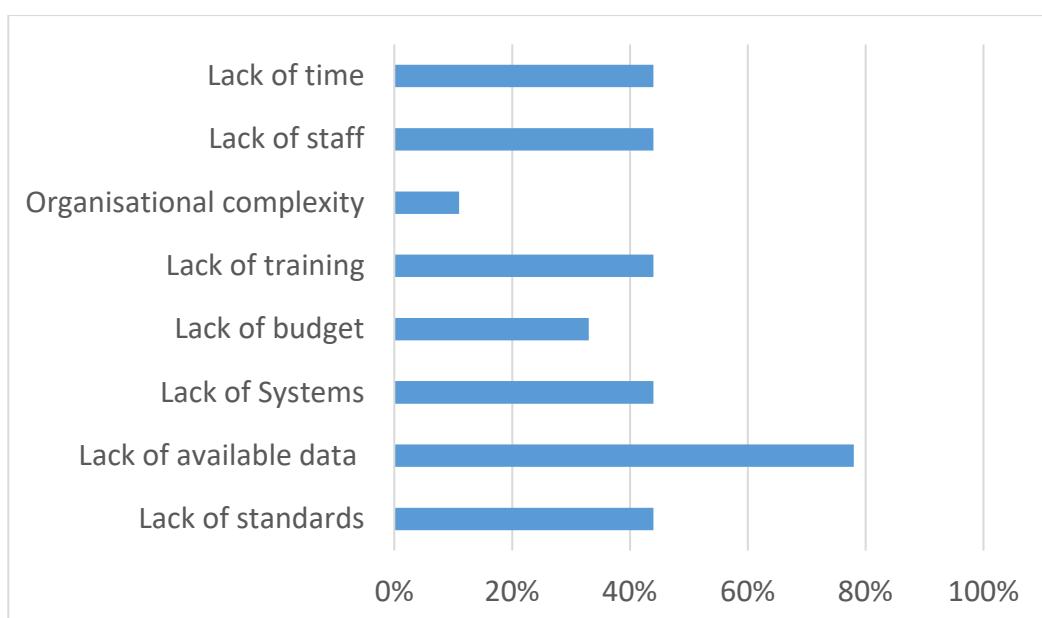
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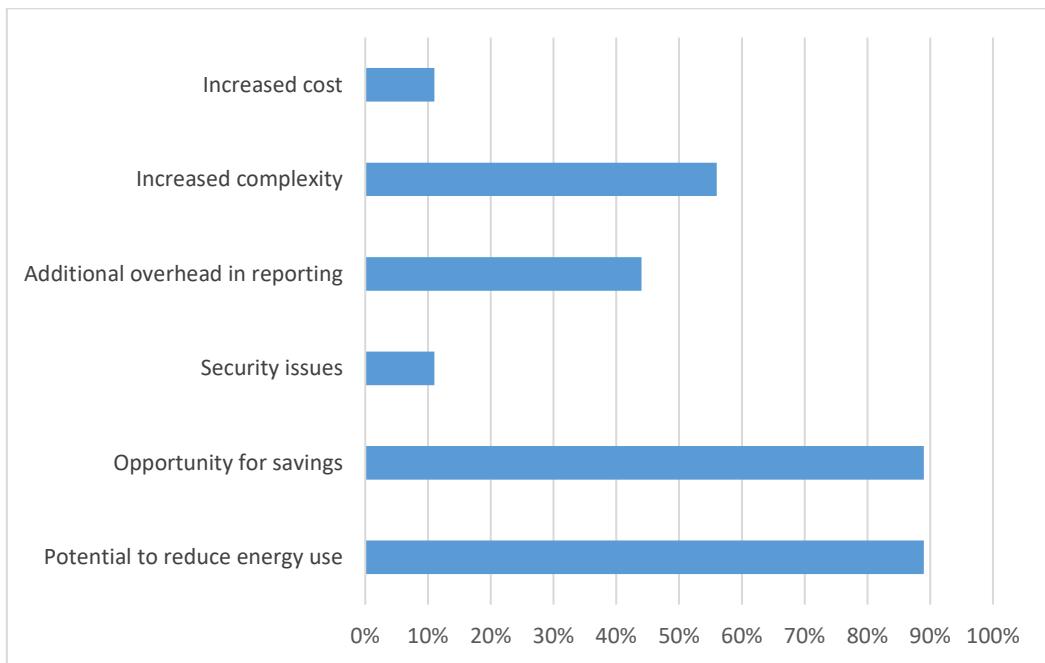
Graph 2: What are the main impacts of sustainability reporting on the department?
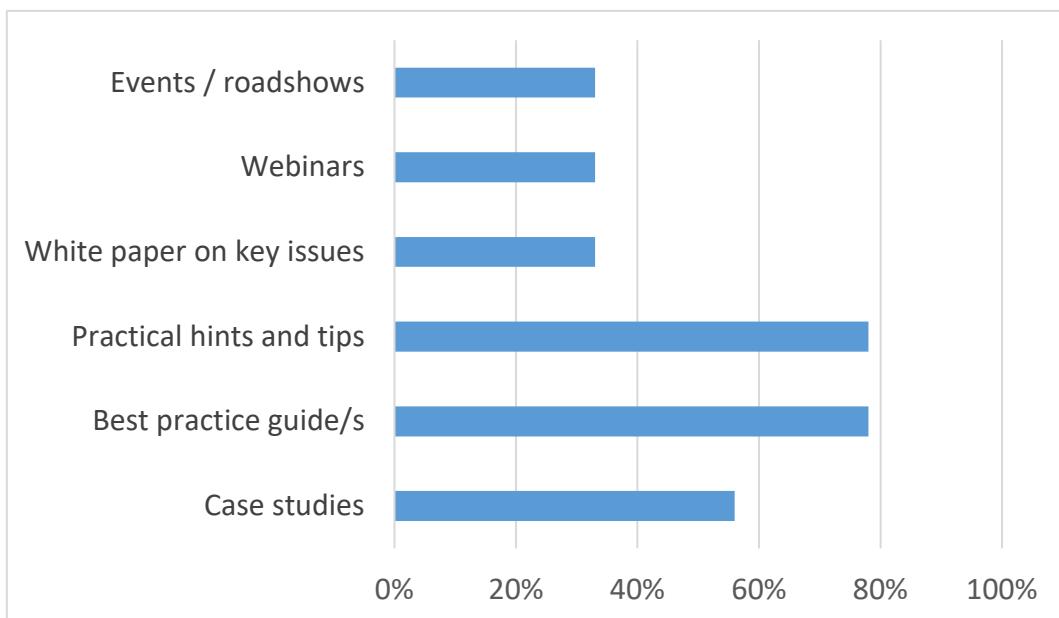
Graph 3: Which GDSA activity would be most helpful?

Based on the responses to the sustainability leads survey, this Insights paper aims to provide a practical briefing for public sector employees and managers involved in sustainable ICT. The main requests are addressed in this insights paper as being the most immediately relevant, with the remaining requests followed up with additional papers, webinars and events.

Introduction

Digital sustainability refers to the responsible and sustainable use of digital technologies, aiming to minimise their environmental and social impact while maximising their long-term benefits. It encompasses the entire lifecycle of digital products, from design and production to use and disposal, promoting a circular economy and resource efficiency. This includes considering energy efficiency, sustainability in producing and disposing of electronic devices and minimising digital waste, among other factors.

A common theme when addressing sustainability is the balance between 3 key demands: environment, society and the economy, often referred to as the 'Triple Bottom Line'. For many organisations their main public-facing target is a commitment to achieve 'net zero' by a stated date, for example 2050. Emissions are classified as scope 1, 2 and 3 under the GHG Accounting Protocol:

- scope 1 relates to the emissions from fuel consumed in equipment and vehicles owned by the organisation, together with the use of refrigerant gases
- scope 2 emissions are from the consumption of power, heating and cooling where the actual fuel combustion is provided by a third party such as an electricity generator
- scope 3 emissions relate to everything else, from transport and supply chain to waste disposal and home working

For most public sector organisations scope 3 will be the largest component of both their overall 'carbon footprint'.

The focus of this report is the scope 3 emissions related to ICT, which can be as much as 95% of the total digital carbon footprint for the organisation.

For Net Zero targets to be credible, departments must therefore have sustainability strategies that include detailed scope 3 emissions measurement and reduction plans.

This paper sets out independent advice and guidance from members of the GDSA Scope 3 Working Group across several key topics, supported by case studies and highlighting specific action points with links to further reading and supporting materials.

Reporting and measuring ICT emissions

Much of the advice and guidance in this report refers to calculating and reporting on ICT emissions, with a particular focus on the supply chain and scope 3. This section is intended as a primer for those who are less familiar with the structure, content and complexity of ICT emissions reporting.

This section sets out the typical sources of ICT (or digital) emissions:

- for most organisations digital scope 1 relates to the use of fugitive gasses from fluids used in cooling data centres
- digital scope 2 or 'use phase' relates to emissions created by third parties producing the energy which is used by devices and infrastructure owned or leased by the organisation
- digital scope 3 is the broadest category, mostly relating to emissions from supply chain via purchased goods and services

To provide more detail, digital scope 3 supply chain emissions will normally include:

- manufacture of hardware including extracting and processing of resources
- transportation and collection of devices
- cloud and Software as a Service (SaaS), both provisioned and consumed
- software development and code execution
- ICT service contracts, professional services and off-premises hosting
- end-of-life treatment and disposal of equipment

Reporting on ICT emissions typically involves multiple teams within an organisation as knowledge and data can be siloed. Information may also be in multiple systems, different formats and may not always be accessible, complete or up to date.

Reporting and calculation process

An overview of the reporting and calculation process is presented in this section.

Identify what is in scope

Be clear which types of devices are covered by the exercise, for example:

- devices
- peripherals
- infrastructure
- services

Identify owners and data sources

Be clear which sources of data will be used and who owns them, including:

- asset registers
- Change Management Data Base (CMDB)
- Procurement and supplier reports

Identify operational status and volume metrics

Check the status of devices to determine factors which will affect their carbon footprint, including:

- location
- whether in use or in storage
- device age
- number of devices and services

Research and apply sustainability metrics

Find data on key sustainability metrics, including:

- energy use and scope 2 emissions
- scope 3
- water use and waste

Calculate and report figures

Calculate and report on sustainability metrics, including:

- compare with baseline
- show trends and KPIs
- measure progress towards targets and key dates

Plan for more sustainable devices and services

While it's true that 'what doesn't get measured does not get managed' it is also true that the purpose of baselines and reporting is to actually drive reductions in emissions, not simply to comply with annual reporting.

This section examines some of the basics that go into planning both the measurement and the reduction strategy.

1. Establish your existing baseline

This section sets out the steps and guidance to establish a carbon footprint baseline:

- start measuring scope 2 and 3 emissions today: begin with what you have. Even partial data can be a useful starting point, but include all the digital assets you can, not just laptops and desktops. Monitors, peripherals, mobile phones and network equipment also carry embodied carbon

- document assumptions and update them as better quality data becomes available: this can include data from manufacturers and service organisations using environmental product declarations (EPD), product carbon footprints (PCF) and lifecycle assessments (LCA) where possible, based on actual configurations and not averages

- question the methodology used to create the data: the aim is to make sure you understand how comparable and inclusive each supplier's data is and what is missing. For unreported items, use average figures such as those used in the Greening Government ICT report or academic sources

- identify gaps and areas of improvement: many government departments only have detailed inventories for some asset types such as desktop computers, laptops and smartphones, so start by identifying data gaps, inaccuracies and areas of improvement

- focus on the known: use inventoried assets to maximise coverage and prioritise assets from vendors who provide verified product-level carbon data such as EPDs, PCFs and LCAs

- create a baseline: baseline the core of your estate with a high degree of accuracy, then focus on improving poor-quality generic data with manufacturer-specific data over time

Key action for establishing your existing baseline

Make your baseline the beginning of a process of continual improvement of your data over time

2. Define a practical action plan

This section sets out the steps and guidance to establish an effective carbon reduction action plan:

- **leverage your baseline:** use the baseline to guide decisions on procurement criteria, asset disposal and product refresh cycles. Extend asset life where possible.
- **simple actions have a real impact:** actions such as moving away from desktops with multiple monitors and assessing scope 3 figures alongside energy efficiency during procurement can reduce carbon, waste and cost.
- **set targets:** set measurable targets. Focus your sustainability action plan on areas that can be measured and managed easily at first. Start measuring today. Be positive and pragmatic in your approach and use procurement to achieve the best outcomes.

Key action for defining a practical action plan

Use the power of the data to analyse and model strategic outcomes and embed change

3. Set KPIs and targets to monitor trends or progress

This section sets out the steps and guidance for establishing effective targets and reporting:

- **objectives are key:** SMART-ER objectives are key. These are Simple, Measurable, Achievable, Relevant and Time-bound across environmental and regulatory areas. For example, an objective could be to reduce workplace technology CO_2e in line with net zero targets and timescales
- **KPIs matter:** Key Performance Indicators (KPIs) need to be agreed, owned and acted upon. They are achievable if you understand what data to collect and automate the process for continual improvement

Key action for setting KPIs and targets

Use SMARTER objectives using better data which equals better metrics and delivers more sustainable outcomes

4. Set focus for phase 1

This section sets out the steps and guidance to establish ongoing improvements to the overall plan:

- **address key suppliers:** prioritise your 10 largest suppliers for emissions reporting and disclosure on accuracy and reporting methods. Ideally reporting should be calculated

from assessment of products and services supplied, rather than simply apportioned based on your spending

- **link your goals:** link sustainability goals to broader organisational goals where possible, such as reducing cost and improving efficiency and build feedback loops into decision-making. Data should drive action across the IT organisation
- **focus on progress:** if the bulk of your assets are desktops, laptops and monitors, then focusing on measuring the carbon on those with manufacturer model-level carbon data will get you further and quicker in the first instance

Key action to set focus for phase 1

Move away from 'spend-based' reporting to get actionable data for your sustainability plans

Featured Case Study: North East Lincolnshire Health and Care Partnership

In response to the growing need for sustainable IT, the North East Lincolnshire Health and Care Partnership (NEL) embarked on a pilot program to gain actionable insights into their digital carbon footprint. The Digital Lead for the Partnership highlighted the immediate impact of the sustainability tooling which captured and managed 24,000 assets and assigned each a carbon profile.

This clarity empowered informed decision-making, revealing a significant opportunity: "We learnt that by replacing workstations with laptops without the need for a monitor we could reduce the CO_2e in just one category of our digital asset by 2,158,970kg of CO_2e (a reduction of over 16% of the NEL Digital estate CO_2e) and reduce the costs of buying and supporting 2,033 monitors by an estimated £500,000."

This initiative not only delivered substantial, measurable reductions in carbon emissions and costs but also enabled the team to estimate the potential environmental impact of digitally enabled healthcare assets, a previously unquantified area. The success of this pilot has directly contributed to the NHS Smarter, Greener, Digital Blueprint, showcasing the profound impact of integrating carbon intelligence into IT operations for real-time reporting and analysis. Read the COzPro and NHS England case study on the KA2 website.

Making the most of existing devices and software

It takes a lot of resources to make the ICT equipment we use every day. It's estimated that about 75% of the lifetime carbon emissions from end-user ICT devices is classed as Scope 3, accounting for the extraction and processing of resources (including rare earth materials) together with manufacturing, packaging, transportation and disposal.

From this it is clear that one of the most effective ways to reduce future ICT emissions is to keep devices in use for as long as possible, whether as the initial user of this equipment, or through its re-use either within the organisation or externally. Many organisations have identified ways to double the useful life of devices, whether by reusing them for different roles, refurbishing them or making changes to their hardware or operating systems.

The following sections identify some guidance on making the most of your existing estate.

1. Profile your ICT to match user and role profile needs

This section sets out the steps and guidance to determining the best match of ICT to user requirements:

- examine user personas and match technology to ensure the 'right fit' to the role as different user profiles have different requirements
- certain roles and use cases may be particularly suitable for lower specification or second-life devices. This typically means prioritising and balancing requirements around security, cost, user experience, productivity, mobility and sustainability

Key action to profile your ICT:

Profile users and assign appropriate technology and solutions – avoid over-provisioning and specification

2. Extending device life and focus on circularity

This section sets out the steps and guidance on improving the circularity of ICT:

- use analytics to identify individual devices which need to be replaced or upgraded rather than replacing devices every few years based on age
- repurpose existing equipment (for example, by redeploying and assigning to a less demanding role profile) before considering wholesale replacement and consider whether end of life devices could be reused outside the organisation (subject to secure data destruction)
- focus on how you and your supply chain can achieve a hierarchy of circularity for your asset
- reuse (internal or external) or resale (commercial reuse)

- refurbish (used equipment) or remanufacture (equipment returned to vendor)
- reclaim (components such as cards, solid state drives, displays, keypads)
- recycle (units beyond economic repair) or recover (materials such as gold, aluminium and copper for reuse)

Key actions to extend device life and increase circularity:

Minimise waste and maximise the residual technology, financial and resource value of assets

Request an audit trail from your disposal partner to assess carbon impact from disposal options and that zero waste to landfill is achieved.

3. Strategic and procurement considerations

This section sets out guidance on making ICT strategy and procurement more sustainable.

- newer ICT products can be more energy efficient and have a reduced scope 3 footprint (for example from increased use of recycled materials and renewable energy in manufacturing) but the benefits in terms of carbon 'avoidance' are likely to be much less than extending device lifecycles
- use Product Carbon Footprints (PCF), Lifecycle Assessments (LCA) and Environmental Product Declarations (EPD) for information when you do need to purchase new ICT but be aware of differences in calculation methods and assumptions which can affect scope 2 and scope 3 figures
- consider the full environmental and financial cost of your choices. Desktops require a monitor, keyboard, camera and mouse, however the peripherals for a laptop can also add over 30% to the carbon and cost
- a standard bundle (keyboard, power block, mouse, headset, docking station, cables and computer bag) has a carbon cost of around 98kg CO_2e and a financial cost of £375
- there may be suitable technology alternatives to your current standard device and refresh strategy
- as organisations increasingly adopt a 'cloud-first' approach this may enable use of lower specification and mobile devices, backed up by hot-desking stations for power users
- consider purchasing refurbished or remanufactured devices that are supported by suitable warranties and security credentials and also consider using vendors and

service providers who commit to taking back End of Life (EOL) equipment, which can also have financial or social value rewards

- be cautious of reacting to End of Life or End of Sale (EOS) announcements which do not necessarily have to trigger a refresh
- if devices are still supported the critical date for a refresh is often End of Support or End of Maintenance due to security considerations

Key action for strategic considerations:

Consider the wider and longer-term environmental and financial considerations of device strategies

Enabling sustainable procurement

Sustainable procurement is a primary driver of ICT scope 3 reduction. Most digital carbon emissions are locked in before a product is shipped, making the tender and contract stage the most important point of intervention. While traditional procurement focuses on securing the lowest upfront cost, sustainable procurement evaluates environmental and social requirements alongside cost, availability, and technical specifications.

It introduces the concept of best value for money over the lifetime of the product or service, integrating carbon performance into the decision.

For example, while 'laptop 1' may cost slightly more upfront than 'laptop 2', it might operate 30% more efficiently and be designed to last 2 years longer. Over the lifetime of the product, 'laptop 1' would cost less and have a significantly lower carbon footprint.

These are the kinds of lifecycle-based decisions that can deliver both financial and sustainability benefits.

To deliver credible impact, procurement must move from advisory guidance to enforceable requirements, using the following principles:

1. Product-level accountability as a minimum requirement for all ICT tenders

Purchasing departments must require (not simply request) verified, product-level carbon data as a condition of purchase. Corporate ESG reports, sustainability pledges, or generic 'green' statements are not acceptable substitutes for robust, contract, service or product specific evidence.

Proposals to supply products and services should be accompanied by a commitment to appropriate standards, reporting and disclosure:

- where a credible 'ecolabel' exists for a device type (for example, EPEAT, TCO Certified or Blue Angel) purchasers are encouraged to require or specify it

- products should have verified Product Carbon Footprints (PCFs), Environmental Product Declarations (EPDs), or Lifecycle Assessments (LCAs)
- product reporting should be model-specific, aligned with recognised standards (ISO 14067, PAS 2050) and include transparent assumptions (lifetime, usage profile, location, boundaries) and third-party verification or audit readiness

Key action to improve product-level accountability:

Ensure that all purchases are supported by credible sustainability standards and product level reporting

2. Scrutinise and score data methodology

Data quality directly affects supplier scoring. Procurement teams should require suppliers to indicate how carbon figures were calculated to ensure a consistent methodology is used, scoring responses to prioritise:

- measured and actual data rather than modelled and apportioned
- activity-based data rather than spend-based calculations
- inclusion of all relevant scope 3 categories in supplier reporting
- exclusion of renewable energy procurement and offsets from reporting

Featured case study: Canadian Federal Government

The Canadian Federal Government uses the EPEAT Environmental Benefits Calculator to measure the environmental benefits associated with their purchase of EPEAT Registered products in any given year. In 2023 to 2024, the purchase of EPEAT registered IT devices by the Government of Canada resulted in a reduction of approximately 34 million kilograms of carbon dioxide equivalents, and cost savings in the amount of $6.4 million Canadian Dollars over the lifetime of the product, among other benefits.

3. Use procurement to reduce emissions by avoiding 'purchase new' where possible

The following procurement activities and strategies should be considered:

- optimisation alone is not enough. Procurement should actively challenge whether the purchase of a new device is needed
- apply a sustainable hierarchy; use as long as possible, then re-use internally where possible, buy second-life if possible, buying new only if justified
- product lifespan is a major factor, so purchasing durable, high-quality products is likely to lower carbon emissions and deliver better value

- prioritise purchase of second life (refurbished or remanufactured) hardware with warranties before new

Key action to use procurement to reduce emissions:

Apply a sustainability procurement hierarchy to extend product life and delay new procurement

4. Repairability plus materials, logistics and packaging emissions

The following items describe key areas to consider regarding materials, logistics and packaging:

- whether an item can be repaired or upgraded by internal teams or service providers without affecting warranties should also be considered
- materials (for example recycled plastics and metals), transport and packaging emissions are often overlooked but can be influenced through tender specifications and contract clauses - ideally by setting minimum standards
- use eco label scoring as a simple way to assess disclosure and performance around transport, packaging and recycled materials
- require disclosure of transport and packaging emissions, using delivery method and packaging in your scored selection criteria
- work with your internal teams to avoid just-in-time procurement and prioritise low-carbon transport options (sea freight over air freight where timelines allow)
- consolidate orders to reduce shipment frequency and require minimal, recyclable, or consolidated packaging, especially in large deployments

Key action on using procurement to ensure repairability and reduce emissions:

Repairability, materials, logistics and packaging should feature in procurement standards and scoring

5. Scoring and weighting

The following scoring and weighting activities should be considered:

- sustainability metrics and criteria should exclude bids and products failing to meet a minimum level, while sustainability performance, including eco label scores, carbon intensity and data transparency, should represent a significant percentage of the total tender score
- suppliers should be scored on emissions performance and data quality, with lower verified emissions resulting in improved competitive standing

- embed ongoing emissions reporting and reduction targets into contracts, with methodology and transparency reflected in the overall scoring

Key action on scoring and weighting:

Create minimum sustainability requirements that apply to all procurement, make sustainability matter in the evaluation process and engage suppliers as key partners

Measuring service emissions

Scope 3 emissions from ICT services are often overlooked due to data complexity or lack of supplier engagement. However, cloud hosting, managed services, and hardware supply, support and maintenance contracts all carry embedded and operational carbon impacts. These need to be measured and reported at the service level, not simply aggregated at the supplier's corporate footprint.

1. Service and supplier profiling and reporting

The following are items to consider when profiling your supply chain;

- for most organisations the starting point is a survey (through Forms or similar) of key service suppliers
- This may be restricted to the top suppliers in a particular category (for example, Cloud providers) or undertaken across a percentage of all suppliers ranked by annual spending
- the survey can be used to establish company level sustainability commitments and certification, together with the availability and scope of service-level reporting
- the survey can be constructed to determine what is available now, planned for the near future or 'not on the radar'
- suppliers should be encouraged to meet minimum standards, however consideration should be given to size as small, specialist suppliers may need extra time to establish the systems and resources needed for measurement and reporting

Key action when seeking to improve the sustainability of suppliers:

Profile suppliers as a first step to establish maturity and encourage them to get suitable reporting in place

2. Service reporting

The following service reporting activities should be considered:

- suppliers should report service metrics on scope 1, 2 and 3 emissions from the following sources (not all will apply to every service)

- metrics should include premises energy and coolant (for example, for cooling and air conditioning units), upstream transportation (goods to the supplier and collections from you), downstream transportation (deliveries of goods to you), waste, commuting, business travel and home working plus embodied carbon and 'use' of products used or supplied as part of the service
- to avoid the complexity of aggregating data from multiple reports it is worth providing suppliers with a simple profiling form or spreadsheet
- while 'raw" emissions data is useful it only serves as a benchmark and static data point
- ideally the service provider should be providing KPIs (such as emissions per employee delivering the service) and trends showing monthly, quarterly or annual changes, aligned with your own net zero targets
- request details on the metrics, methodologies and assumptions used in reporting to determine which metrics are being calculated at a granular (service) level and which are 'pro-rata' based on headcount or spend

Key action on service reporting:

Suppliers should provide detail on the scope 1, 2 and 3 emissions for the services you purchase

3. Service metrics

The following items should be considered when measuring service emissions:

- many services also have specific metrics and standards which are critical to measuring their sustainability
- These may include datacentre 'Utility' metrics (Power Usage Effectiveness, Carbon Usage Effectiveness, Water Usage Effectiveness), compliance with specific standards and best practice, percentage of waste to landfill, percentage of devices re-used or refurbished, percentage of devices recycled and percentage of devices donated or sold and the avoidance of harmful chemicals and single use plastics
- while assessing some of these is complex, you should look to data reporting approved under the Science Based Targets Initiative (SBTi) where possible
- the cross-government sustainability steering group is also working on standards for key metrics with guidance expected later in 2025

Key action on determining service metrics:

Use cross-government standards and GDSA guidance to assess supplier methodologies and reporting

4. Calculating emissions from cloud, software as a service (SaaS) and software

Cloud services, SaaS applications, and AI workloads account for a growing share of digital scope 3 emissions. These often go unchallenged due to their indirect nature, rapid scalability and limited transparency from providers. Departments should request emissions data tied specifically to the services they consume, not just aggregated reports from cloud or software vendors. This includes emissions from infrastructure provision, storage and delivery.

Note that your 'levers and ability to influence reductions and changes in these areas may vary considerably by supplier.

The following action points are suggested areas for attention:

- request cloud service emissions disaggregated by workload, region, and usage profile
- ask for product-level carbon data or PCFs for SaaS tools, especially those with large user bases or compute requirements
- where AI or ML is involved, request emissions estimate's for model training and deployment, as well as inference load
- avoid claims of 'carbon neutrality' or 'green cloud' without understanding the basis (for example offsets versus actual reductions)
- where direct figures aren't available, require suppliers to clearly state their assumptions and methodologies
- integrate cloud and SaaS data into your broader ICT emissions inventory and decision-making framework

Note that while accurate attribution of emissions remains a challenge, departments can influence emissions by selecting lower-impact service options, enforcing contractual reporting standards, and aligning cloud governance with sustainability goals.

Key action when calculating cloud emissions:

It is important to include cloud emissions in scope 3 reporting and also to interrogate figures from cloud providers to understand their assumptions, calculations and methods.

Making best use of the data

Scope 3 digital emissions must be embedded into mainstream reporting and decision-making processes. This is not just about compliance or annual disclosures, it's about using emissions data to drive better outcomes. By treating scope 3 data as both an emissions record and a decision-making tool, departments can shift from passive measurement to active optimisation, reducing emissions while improving operational efficiency and better public value.

For data to be useful, it must be traceable, stored in systems of record, and tied to decisions across procurement, IT, and digital operations. Departments should treat digital carbon data with the same operational seriousness as cost, performance, or risk.

Systems, sources and calculations

Store asset and emissions data in systems of record and 'single point of truth' depending on asset or service type such as:

- IT Asset Management (ITAM)
- procurement platforms
- Environmental, Social and Governance (ESG) tools

Where possible:

- use integration features with other internal systems to create live links rather than relying on experts and annual reports
- avoid buying and deploying new dashboard tooling – data works best in existing systems known to your users
- avoid reliance on static data (for example, PDFs or ad hoc surveys) - structure your data model for automation, traceability, integration, and reuse
- use emissions data to inform decisions: refresh cycles, supplier selection, device configuration, cloud usage, and procurement strategy
- set emissions-based KPIs at category or function level (for example, CO_2e per user, per device or per service)
- document all assumptions clearly: sources, data quality, methodology and refresh cycle
- connect carbon data to both internal carbon reduction plans and external disclosure frameworks (for example, SRD and the Streamlined Energy and Carbon Reporting (SECR))

- ensure cross-functional ownership: sustainability teams cannot own what they do not control
- reporting roles should align with IT, procurement, and service management functions
- audit and challenge the data periodically, such as not just for assurance, but to identify where reductions are or are not happening

Key action for systems and calculations:

Plan how data will be gathered, stored, managed and updated for efficiency and better outcomes

User engagement

Users play a critical role in scope 3 emissions, whether through their choice of devices, use of services or influence on device refresh cycles. Despite this they are often left out of sustainability strategies. Engagement must include awareness, but also go further to create agency, empower action and reinforce positive outcomes.

1. Establish a rationale and communications plan

Each organisation may have different targets, priorities and reasons for implementing sustainability strategy, ranging from mission statements, net zero targets and stakeholder principles to compliance with central government strategy and policy. It is important that the rationale is clear to all concerned and has buy-in from leadership at the appropriate level. Ideally it should be aligned with overall strategic goals and timescales so that sustainability is part of the overall strategic plan.

A branded programme with a strong identity and key messaging will have much greater effect. Typeface, colours and imagery for any content and messaging are particularly 'important, but consideration should also be given to the materials used, including the digital 'footprint' of any email signatures, footers or graphics.

An overall, simple communications plan to support the key sustainability messages and timescales (with schedule, deliverables and ownership of key stages and actions) should be established and shared with stakeholders. The comms plan should consider the use of events, newsletters, blogs and intranet pages, including how contributions and feedback with users will be handled.

Ideally much of the material can be created centrally as a toolkit and template, then shared between organisations for customisation as required. Where possible, communication should be specific to job role and identify actions which are achievable by the individual.

Key action on establishing a rationale and communications plan:

Plan your communications to tell users about specific objectives and what they can do to help

2. Create relevance and resonance

The following user engagement factors should be considered:

- overall carbon footprint figures are hard to understand, and even harder to see how they relate to individual roles and behaviours
- providing visualised data (through infographics and analogies such as travel miles) and breaking down overall emissions into organisational categories (for example by department or location) can help make the data more relevant and accessible
- 'persona' or role-based carbon footprint analysis may also be helpful as this increases the relevance to the individual in the workforce
- the inclusion of sustainability metrics into leadership, team and personal objectives should also be considered, subject to operational requirements

Key action on establishing relevance and resonance:

Visualise relevant data to build impact and momentum

3. Turning words into actions

The following user engagement activities should be considered:

- identify specific actions which users can take to improve sustainability
- this can be as simple as 'think before you print' or more fundamental changes like choosing second-use devices or using one rather than 2 or more monitors
- any action points should be clear and something that users can do without impacting on their role or productivity
- there should also be some indication of what the change will mean if adopted at scale, for example, 'If we all do this, we can save the equivalent annual emissions of 500 average UK households
- sustainability can be a complex topic, so running events such as 'lunch and learn' plus providing or simply curating online training material can be very helpful to give users a starting point
- there is a wealth of existing Open Source training material available which can be used or customised

- every organisation will have users who are sustainability enthusiasts and getting these 'champions' trained and on-board is an essential early step to building momentum and local engagement
- champions can be used as 'exemplars' of positive behaviours and can also cascade the message and engage with users via local events and sessions such as drop-in clinics and sustainability showcases
- positive feedback on the result of actions is the energy that keeps up momentum for change
- establish a regular cadence of reporting to provide encouragement to the champions and wider user population, celebrated through team meetings, departmental updates and online newsletters

Key action on turning words into actions:

Use feedback on the positive impacts of personal and team actions to drive long-term results

Featured Case Study: Imperial College

Imperial used independent data, strong images and campaign messages combined with local sustainability champions to engage users in more sustainable behaviours, including shutting down unused devices and reducing printing.

As part of the campaign Imperial commissioned a study to assess their end user device and printing strategies to assist in reducing emissions through the overall carbon reduction plan.

"We now have the data to put a carbon footprint figure against the devices we provide, as well as getting a better understanding of the impact of our refresh cycles. We've been able to use the data to enhance our understanding of the estate and its sustainability impact. The Imperial sustainability champions are actively engaged in looking for potential improvements across every area of campus and operations so it's great to have the ICT team making such a positive contribution based on real detail.

The findings have helped us model the potential savings from some of our sustainability initiatives and express them in easy to understand terms to help drive engagement." Neil Hanham, Head of Digital Workplace, Imperial College London.

Read the full case study on Imperial College on the P2zero website.

Myth busting 1: dealing with misconceptions, distractions and uncertainties

Sustainability strategies and reporting are prone to statements which are easily misinterpreted or deliberately constructed to distract the reader. The following 'myths' are explored to give greater clarity and open up supplier statements to further disclosure and scrutiny.

1. The services you buy from us produce 'zero carbon'

Various calculation methods can return a result of 'no carbon' by using a combination of market-based emissions reporting and excluding some metrics as being out of scope or not possible to quantify. Market-based calculation allows a vendor to claim near-zero emissions, while location-based reflects the actual grid mix where the energy was consumed. These numbers can be very different. Additionally, it is important to understand whether the renewable energy purchase actually adds new capacity in the country of operation or is simply the cheapest global contract.

Departments must require (not simply request) verified, product-level carbon data as a condition of purchase. Corporate ESG reports, sustainability pledges, or generic 'green' statements are not acceptable substitutes for robust, contract, service or product specific evidence.

2. We use 100% green energy

When suppliers (and most specifically major technology vendors) say they 'use renewables' or 'green energy' this often means buying renewable energy certificates or PPAs rather than consuming renewable power directly. That can give the impression of a major reduction in emissions, but in reality, the effect can be quite limited. Request clarity and statements on the actual energy generated from renewable sources which have been directly funded by the organisation. Specifying that suppliers must use 'location-based reporting' at least ensures that national figures are used and opens the door to more granular, regional calculation of genuine renewable energy use.

3. We have set a Net Zero target

Most medium to large organisations (including suppliers) will publicise a Net Zero target date - but what does it actually mean? The 2 key metrics are the target date (which should obviously be at least in line with your own target) and the 'scopes' included (which is often restricted to scopes 1 and 2). even if scope 3 is listed it is important to understand which categories of scope 3 are actually included.

Given that somewhere between 80% and 95% of your emissions are likely to be scope 3 it is very important to know how these figures are being calculated and reported by your suppliers. Clarity on the use of 'offsetting' is also required to ensure this falls within the accepted parameters of a recognised standard like the Science Based Targets Initiative (SBTi), such as, not used to account for more than 10% of total operational emissions.

4. Spend-based reporting is good enough

Spend-based reporting is often considered to be quick, convenient and 'good enough' for many organisations and their suppliers.

While it may be the only option where a supplier does not have any granular reporting in place it is not helpful for either party when using the data as part of a carbon-reduction strategy.

Ideally sustainability should be a partnership between organisation and supplier, with both parties' using granular data to reduce emissions and track progress towards meeting common goals.

Myth busting 2: dealing with objections

There can be objections from suppliers (and sometimes internal teams and individuals) to calculating or reporting certain items, often due to concerns about the cost or complexity of the process. This section addresses some of those objections and suggests suitable responses.

1. Why report or aim to reduce emissions at all?

Objection: Our emissions are so small in comparison with the total that any change we make will not have any benefit.

Response: Every reduction counts. It is easy to assume that someone else is taking responsibility - either other countries, central government, ESG leads, or the supply chain. In truth we all have a responsibility to operate as sustainably as we can and to set an example for others.

2. Why create a baseline?

Objection: Setting a baseline is pointless and as someone starts to investigate sustainability the emissions figures will probably go up.

Response: The baseline is not the end-goal, it is an essential starting point for a reduction strategy against which progress can be measured. Figures may need to be adjusted over time, but delaying only increases cost, reduces available options and undermines the credibility of any commitment.

3. Why bother to report on scope 2 emissions?

Objection: The UK government has a strategy to decarbonise the grid, so emissions will naturally come down without action on energy efficiency.

Response: The percentage of renewables is rising, however the UK is still some distance from zero carbon electricity. Energy production, transmission and use have a sustainability

'footprint' even when generated from renewables and energy will remain a valuable, costly and strategic resource.

4. Why bother to report scope 3 emissions

Objection: Scope 3 emissions are subjective as they are based on manufacturers' own specific calculations and assumptions.

Response: For most large tech providers scope 3 (from manufacturing, supply chains, and product use) makes up around 95% of their emissions. Although vendors may use different calculation methods and assumptions for their figures, they must be compliant with international standards. As scope 3 makes up such a significant part of digital emissions it is essential that reporting is undertaken and placed under scrutiny to encourage manufacturers to produce higher quality, more accessible and more consistent data.

5. Sustainability is too complex and costly

Objection: We can't afford to be sustainable, and staff do not have the knowledge, resources, time or budget to spend on 'carbon accounting'.

Response: In most cases sustainable solutions should reduce costs, not increase them. In terms of reporting, start small and focus on the largest, most material sources. Use existing reports and data. Many data points are already available internally. Free tools and templates can reduce cost, so follow established methodologies such as the GHG Protocol. Break the process into phases and avoid introducing unnecessary new systems or costs.

Conclusions

Measuring and reducing digital supply chain scope 3 is an essential component of delivering improved sustainability, reducing planetary impact and meeting net zero targets. This requires organisations to consider their existing digital estates and policies relating to device management, replacement and procurement. This also extends to the supply chain for services, not least those provided via the 'cloud'. The following points summarise the key findings and conclusions of this Insights paper:

First steps are key

Make a start on what you can measure and control - then look to improve the scope and quality of data over time.

The baseline is not the goal - just step one

It's essential to baseline, but the real impact is from making reductions and seeing the difference and progress over time.

Right fit of the right technology is essential

Choose the right technology to support users, but embrace longer device life, reuse and 'second life' where possible.

Supplier ESG and product need to be scored

Set and use minimum standards and scoring to make company ESG metrics and individual products and services sustainability a decision-making factor in supplier and product selection.

Supply chain partnership is critical

Engaging with suppliers to encourage more sustainable products and better reporting will not only benefit the organisation through reduced emissions but also drive the digital supply chain including manufacturers to make sustainability a priority throughout the value chain.

Service metrics matter

Emissions do not just come from your hardware purchases, but also from your services, particularly cloud. Understanding what these are and how they have been calculated by your supplier is complex but very important.

Data integrity underpins good decision making

Where possible the data for reporting should be aggregated into a 'system of record' with automated updates from any other systems so that it provides a comprehensive, up to date, accurate and auditable source.

Agency and relevance drive behaviour change

If staff understand why sustainability is important and what they can do in their role to improve things they are more likely to engage and participate - particularly if there is feedback on the results.

Genuine facts and data are needed

When assessing products and services it is important to understand the assumptions and methodologies behind suppliers' headline statements, targets and figures. 'Green claims' should be objective and verifiable.

Inertia is often our biggest enemy

Objections are commonplace and making progress often requires determination and support to overcome barriers from suppliers and internal teams. Case studies and success stories help to build confidence and momentum.

Sustainability initiatives cut costs and carbon

Sustainability is often seen as adding cost and complexity to an already pressured ICT environment. In most cases a sustainable ICT strategy should actually reduce cost and carbon by reducing energy use and procurement costs.

Glossary

- **CO_2e:** Carbon Dioxide Equivalent - a way to express the impacts and emissions of all the various greenhouse gases in one simple metric

- **Circular Economy:** design, manufacturing and operational processes designed to minimise resource use and waste by reusing existing materials

- **CUE:** Carbon Usage Effectiveness - a metric for the efficiency of carbon emissions from a facility, most commonly a datacentre

- **Ecolabel:** a set of standards, scoring and evaluation criteria applied by external agencies to provide ranking and certification of products

- **End of Life or End of Maintenance:** the date beyond which updates and maintenance (hardware and software) for products will no longer be provided

- **End of Sale:** the date beyond which hardware and/or software products will no longer be available for sale

- **End of Support:** the date beyond which support for hardware and/or software products will no longer be provided

- **Environmental Product Declaration (EPD):** a statement covering a range of sustainability and ESG metrics, for example carbon footprint and planetary impact

- **Greenhouse Gases:** gases in the atmosphere that absorb and emit infrared radiation, trapping heat and warming the planet's surface

- **Greenhouse Gas Protocol (GHGP):** the global standard for companies and organisations to measure and manage their GHG emissions

- **Greening Government Commitments (GGC):** set out actions UK government departments and agencies will take to reduce their environmental impacts

- **Greenhushing:** organisations deliberately not issuing sustainability data and reports, or only issuing vague reports which are difficult to substantiate

- **Greenwashing:** organisations issuing statements, not supported by objective evidence, intended to give the impression they are concerned about the environment

- **Information and Communication Technology (ICT):** all technologies used to handle and communicate information, including computers, software, networks (internet, mobile), and digital devices

- **Key Performance Indicator (KPI):** a metric used in reporting to track performance and trends in a selected area

- **LCA:** Lifecycle Assessment - a statement covering a range of sustainability and ESG metrics, for example carbon footprint and planetary impact (see also EPD and PCF)
- **PCF:** Product Carbon Footprint - a statement covering a range of sustainability and ESG metrics, for example carbon footprint and planetary impact (see also EPD and LCA)
- **PUE:** Power Usage Effectiveness - a metric for the efficiency of electrical power use in a facility, most commonly a datacentre
- **REF:** Renewable Energy Factor - metric used to quantify the proportion of renewable energy used by a data centre compared to its total energy use
- **Scope 1:** GHGP category for direct emissions from operations
- **Scope 2:** GHGP category for indirect emissions from in-life use of energy
- **Scope 3:** GHGP category for all other indirect emissions including supply chain
- **Second Life Devices:** ICT equipment which has been provided to a subsequent user, typically after repair, refurbishment or remanufacturing
- **Spend-Based Reporting:** calculating product or service emissions based on a percentage derived from their cost as a percentage of supplier revenue
- **WUE:** Water Usage Effectiveness - a metric for the efficiency of water use in a facility, most commonly a datacentre