



Maximise the sustainability potential of your networks

Practical steps to shape your strategy
for long-term network sustainability

Introduction

Sustainability is now a global priority. Citizens, governments, regulatory bodies and organisations large and small recognise the impacts carbon emissions are having on the planet – and want action.

As a result, sustainability is at the top of the boardroom agenda, influencing all aspects of strategy, and the days when environmentally friendly initiatives were optional for organisations have long gone; society wants to see emission measurement, accountability and change.

Achieving this can be a significant challenge for global organisations. Capturing emission data within their own operations alone can be difficult, but the growing focus on measuring, reporting and reducing Scope 3 emissions generated across the wider supply chain adds further complexity. And networks are no exception.

Networks and IT infrastructure are notoriously energy hungry, and so they're a natural target for sustainability improvements. The good news is that there's immense potential for improvement out there. In fact, improved sustainability can often be an unintended part of any technology evolution.

Think how moving to the cloud reduces physical footprints, virtual data centres and platforms frequently use 100% renewable energy, and hardware replacement is increasingly following a circular economy model. These all offer such promise – and are just the beginning.

However, what so often holds organisations back is not a lack of motivation to cut carbon, but an absence of the tools and expertise to measure, monitor and report on emissions across the network. Without this accurate data as a base, organisations can't be sure any proposed changes will be effective or worth the investment. In today's environment it makes no sense to refresh your network if you can't be sure you'll be unlocking sustainability benefits, so changes stall.

Working in partnership with Cisco, our joint sustainability mission is to help you move to a lower-carbon network strategy. So, to support you, we've brought together all the tools and expertise from our two organisations that you'll need to smooth your path to net zero.

I hope this whitepaper helps you shape your plans and future. Do get in touch if you'd like to discuss anything further.

Sarwar Khan
Senior Manager,
Global Digital Sustainability



This whitepaper will examine:

- [the sustainability drivers in the IT and network infrastructure market](#)
- [the key challenges for increasing network sustainability](#)
- [critical steps for achieving net zero](#)
- [our blueprint for a sustainable network](#)
- [how we can help your organisation](#)
- [sustainable network strategies in action.](#)

Key sustainability drivers in the boardroom

Sustainability is now top of the boardroom agenda. A recent study found that, for 86% of multinational corporations, it's now the most important factor for top level decision-making. In fact, more than 3,900 companies have now formally committed to clear carbon reduction targets for measuring and reducing CO₂ emissions.

Driver #1 Increasing regulation around transparency

Governments and pan-national trading bodies are introducing increasingly rigorous legislation, such as the EU's CSR Directive, effective 2024. Governments and regulators are cracking down on sustainability claims that have no substance, known as 'greenwashing'. Since 2021, the European Commission found 42% of sustainability claims were false.

Driver #2 Evolving consumer demands

Consumers are increasingly willing to use their purchasing power to influence organisations to act sustainably: 88% of consumers say they would rethink purchasing from companies that aren't ethically or environmentally sustainable. And 81% would actively choose more sustainable sellers.

Driver #3 Growing pressure from investors

Investors are actively seeking out companies that value Economic, Social and Governance decision-making and are proactively exploring long-term sustainability plans as well as clean energy transition strategies.

Driver #4 A broader view of environmental responsibility

Organisations want their biggest suppliers to help them identify, measure and reduce Scope 3 emissions, because up to 95% of all organisations' emissions come indirectly from their supply or value chains.

Driver #5 The bottom line

Cost is also a factor in the increased corporate focus on sustainability – particularly after the 2022 global energy crisis caused fuel prices to surge by an average of 50%. Optimising operations to minimise energy use makes financial, as well as environmental, sense.

These are the core drivers making a sustainability strategy essential, so why isn't it happening? What's holding organisations back from making sustainability improvements a reality?

What's holding organisations back from increasing sustainability within their networks?

In many organisations, it's the Chief Information / Technology Officers (CIO / CTO) that play a leading role in helping the business achieve deep decarbonisation. Right now, when it comes to networks and IT infrastructure, their focus should be on overcoming three common barriers:

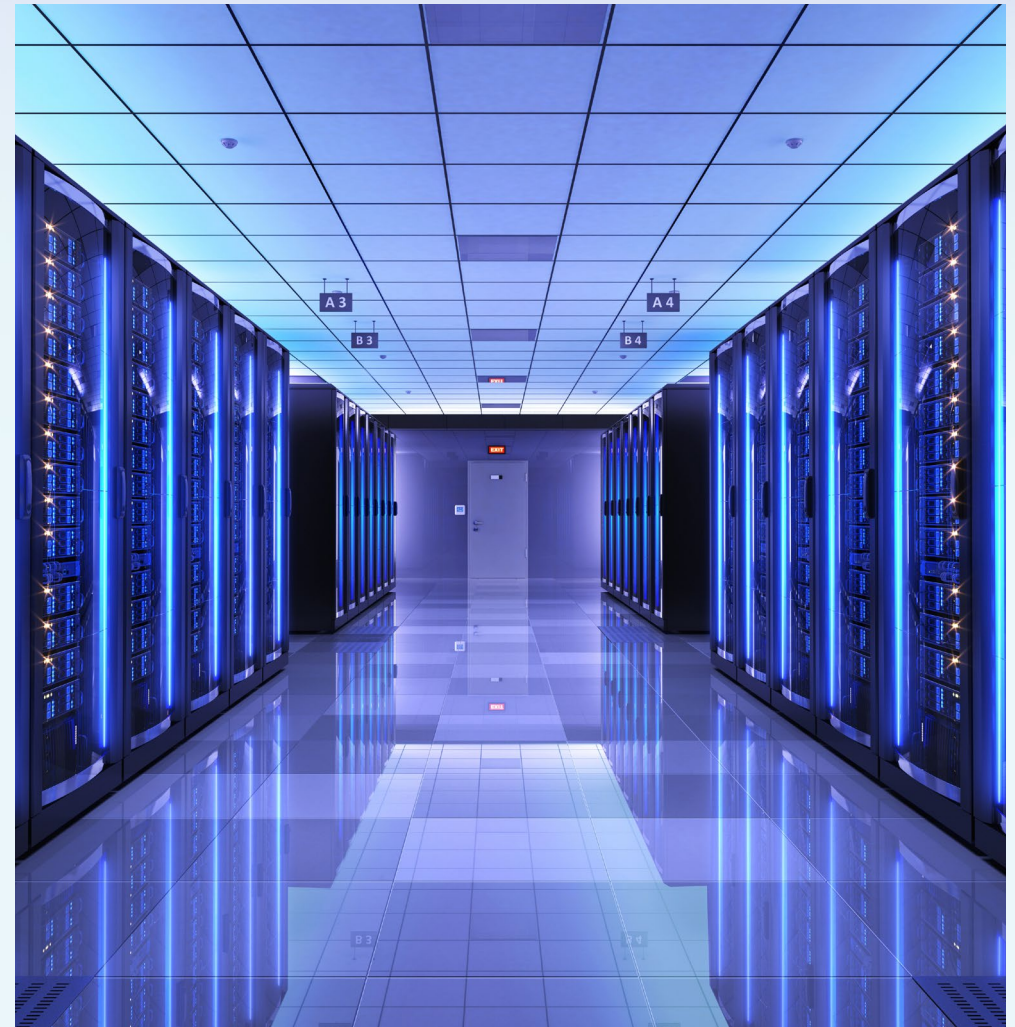
1. A lack of measurable and consistent data

21.9%

of organisations say that a lack of measurable or consistent data is making it hard for them to demonstrate their sustainability goals.

It's well known that networks are big consumers of energy, and that brings with it significant CO₂ emissions. But, in practice, many organisations struggle to measure their own usage. On top of that, now accountability around Scope 3 emissions is increasingly expected, they also need access to accurate and detailed information from providers. This is especially tricky in a multi-vendor environment.

However, without this information, they're powerless to make change, and even run the risk of making false claims that could negatively impact their brand reputation. So, it's essential to find more accurate ways of measuring total consumption across network infrastructure and supply chains.





2. Internal skills shortages

39%

of organisations also claim they currently don't have the skills in-house to effectively manage their carbon footprint and create accurate reports.

Faced with complex network architectures and the ongoing challenge of balancing operational needs, organisations struggle to understand how to plan, redesign and modify their networks for greater energy efficiency - and don't often have these skills in-house.

It takes specialist technical design architecture knowledge, skills and experience to reconfigure both IT and Operational Technology (OT) infrastructure domains. It's an intricate process that requires a considerable amount of analysis, planning, and testing (prior to implementation), as well as drawing in different inputs like business and budgetary requirements, functional requirements, technical features, operational processes, and timings.

Often, balancing customer requirements in an optimal network design needs to be done while complying with specific industry, financial or security regulations, as well as specific design standards. This, too, requires specialist knowledge and skills.

3. Unreliable solutions

40.4%

of global enterprises say the reliability of the solutions currently available to them holds back their sustainability.

There's now an increased focus on being operationally green - and showing it. But a lack of reliable sustainability-supporting solutions means organisations face challenges in being able to consistently and credibly monitor and report the accurate real-time energy performance of their networks.

A key part of maintaining energy efficient operations is continuously uplifting network infrastructure across both IT and OT network domains and recycling the consequently obsolete equipment. Too often, much of this equipment ends up going to landfill or sitting for years in storage rooms.

Critical steps to achieving low carbon networks

We know that to enter the next phase of sustainability, organisations need to have proven solutions and methodologies in place for making external and internal improvements. This calls for greater coordination and collaboration with other organisations, including a trusted ecosystem of partners that are committed to helping the organisation succeed.

That's why we've developed a tried-and-tested process that will build the critical foundations for long-term network sustainability:

Step one: focus on measuring the total impact of IT products and services

Making sustainability improvements is impossible without an accurate picture of your total energy consumption – and for that you need data. Data is king and drives the right outcomes; navigating without data is impossible. Navigating with poor data is very difficult and leads to inadequacy in networks, but navigating with good data makes it possible to make the right and informed decisions to increase sustainability.

Holistic measuring tools able to streamline data from disparate IT devices, apps and workloads to create detailed reports on power usage and carbon emissions are essential – and they generate a baseline from which organisations can make informed decisions.

For example, this data can identify the best scheduling times to run batch jobs when energy is at its lowest cost. These tools should also be able to highlight any network components that are underperforming in terms of energy efficiency and CO₂ emissions.

Step two: explore sustainable procurement decisions

Next, organisations can start to explore where it's possible to evolve their network, replace any end-of-life or old equipment with more energy efficient solutions, or proactively plan a full network redesign. However, any network redesign to increase sustainability must always work alongside other factors such as security and risk, regulation, compliance, and the commercial and functional needs of the organisation. This takes careful exploration and assessment.

In many cases, moving workloads to a cloud-based colocated data centre can bring clear cost benefits and significant sustainability gains – and there are now even entirely renewable data centre options available on the market. But, migrating to a cloud environment is also likely to involve discarding or replacing equipment, and this generates e-waste that now makes up to 70% of the hazardous waste being deposited into landfills. As networks are upgraded and improved, it makes sustainability sense to explore where end-of-life recycling schemes can minimise waste. Challenge your suppliers to offer recycling schemes.

Step three: reduce the ongoing operational environmental footprint

Committing to net zero targets often involves providing regular updates on emissions. A key part of uplifting a network is including a reliable monitoring tool to highlight patterns and inefficiencies across the estate.

This enhanced visibility will enable organisations to manage and optimise their operational business networks for low power and carbon use, as well as effectively forecast energy consumption. Plus, it will help them assess the sustainability of any future network developments, and pinpoint where improvements can be made.

The options for boosting sustainability are growing in the operating environment. Edge computing is ready to help organisations cut their data centre capacity considerably. Processing at the edge significantly reduces the volume of data travelling to the cloud, which enables data centre consolidation, reduced energy consumption and accelerated decarbonisation. Supported by cloud capabilities, it even opens the gateway to innovative Artificial Intelligence (AI) and machine learning tools that will continue to identify new energy efficiencies.



A new pathway to sustainable networks

In partnership with Cisco, our new sustainable network refresh proposition delivers all the tools organisations need to start reconfiguring their networks for a lower carbon impact. This includes specific solutions for reducing and monitoring energy performance across an entire network infrastructure.

Measuring carbon emissions

Data is the bedrock of sustainability decision-making. That's why our [Digital Carbon Calculator](#) combines carbon footprint data from the IT services you buy from us and any other vendors to give accurate, reliable and consistent data.

Ready to help: our Digital Carbon Calculator

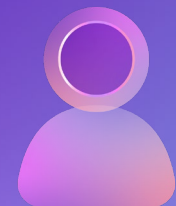
An easy-to-use tool that provides a baseline for the carbon emissions of your IT inventory and simplifies your annual sustainability reporting in accordance with [ISO 14040:44 standards](#), providing:

- a single platform to understand the carbon emissions of your network assets
- added-value content to identify and prioritise asset-related actions while securing network performance
- KPI tracking over time to chart the impact of changes
- a summary of all reports, together with the ability to drill down into the data
- a lifecycle management feature highlighting devices at end of service
- assessments compliant with the GHG (Greenhouses Gases) Protocol Corporate Standard using the Information and Communication Technology sector guidance.

Ready to help: our network refresh and design service

After using our Digital Carbon Calculator, our network refresh and design services team are on hand to offer:

- in-depth technical expertise
- specialist support for assessing and analysing energy performance reports
- recommendations for improving network architecture designs
- suggestions for sustainable device upgrades across IT LAN and industrial OT domains
- tailored strategic advice, taking into consideration the organisation's unique requirements.



Procuring new sustainable solutions

After optimising network designs, our team can then further support customers by procuring, configuring, testing, deploying and implementing any of the energy saving products that we've recommended, installing them to industry-based designs.

Ready to help: our recycling programme

During this process, any of the end-of-life equipment that's uplifted or replaced can benefit from our recycling schemes. In fact, our Takeback and Reuse Programme allows the return of any hardware that's reached its end of life at no additional cost and has a commitment to reuse and recycle 99.9% of each item.



Reducing carbon footprints

For ongoing sustainability uplifts, our in-life managed service team will continue to deliver proactive monitoring services and recommendations for continuous energy improvements on the network.

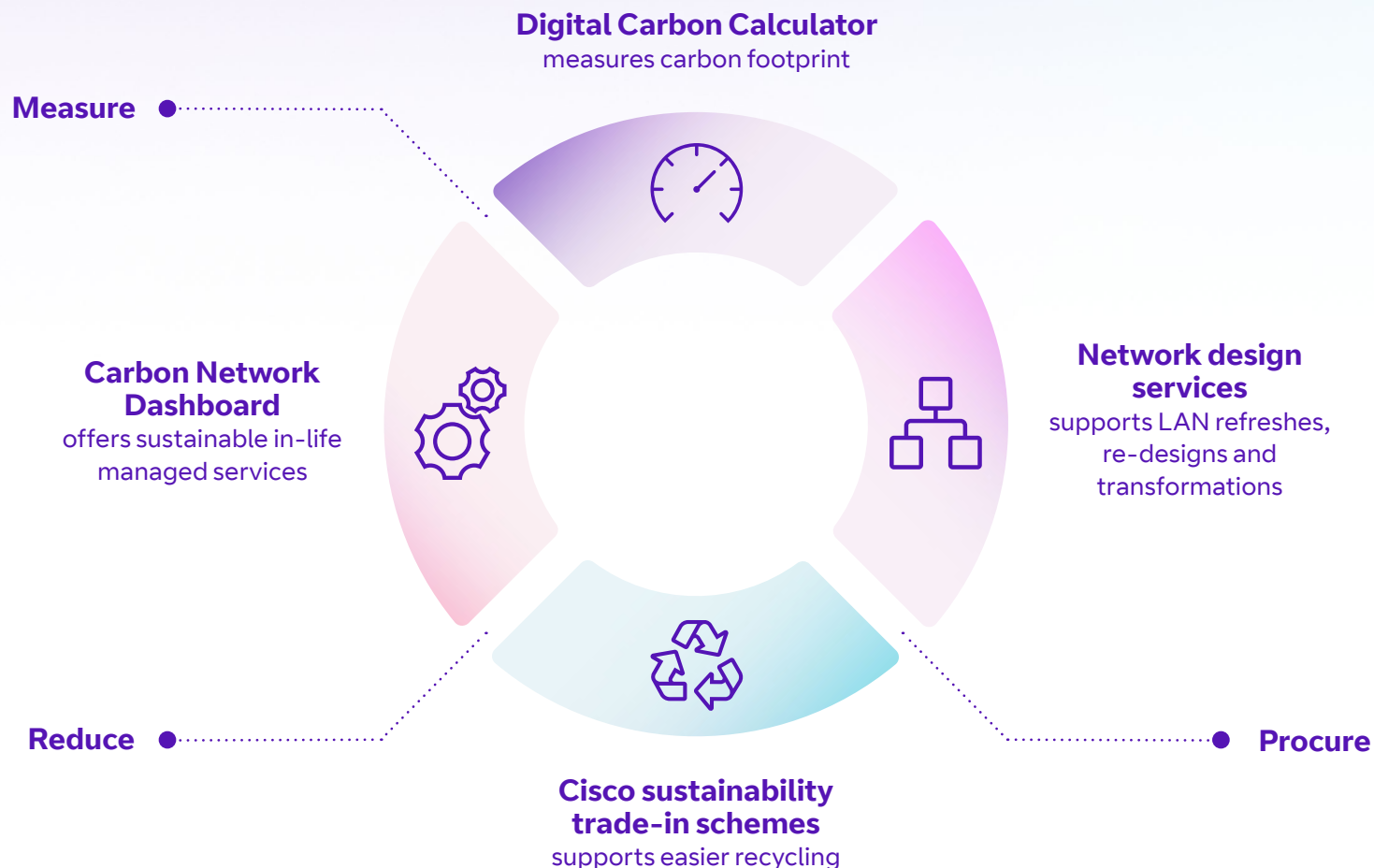
Ready to help: our Carbon Network Dashboard

Our sustainable network refresh solution comes with our specialist, advanced Carbon Network Dashboard that offers:

- a single, easy-to-use interface for informing strategic decision-making
- a real time, in-depth view of total energy consumption
- the ability to generate performance reports right down to specific locations or devices
- accurate forecasting of usage, based on network inventory and historic demand
- anomaly detection and prediction powered by machine learning
- local power grid information to highlight carbon intensity
- the ability to identify carbon intensive devices and system inefficiencies.

A comprehensive approach to sustainable network infrastructure

In partnership with Cisco, we offer a range of services that you can use individually, or as a whole, to maximise the sustainability credentials of your network infrastructure.



A partnership for boosting network sustainability

Why BT for sustainability?

We've been on a climate action journey for over 30 years, since setting our first carbon reduction target in 1992.

Our longstanding commitment to environmental efforts

We're committed to reaching net zero by 2031, and also intend to help our customers avoid using the equivalent of 60 million tonnes of CO₂ by 2030. As an organisation, we're proactively aiming to embed circularity across our products, network and operations in order to keep materials in use and eliminate waste across our value chain by 2030, with this goal extending to our customers through our products and services by 2040.

Our established sustainability credentials

Across industries, the way we put sustainability at the heart of our strategy has been recognised. In fact, we currently hold an Advanced rating from EcoVadis, with a score of 69/100. We're also on the Carbon Disclosure Project's 'A List' for the eighth year running which puts us in the top 2% of 13,000 reporting companies. Recently, we've been placed 25th in the Corporate Knights Global 100 list of the world's most sustainable companies.

Why Cisco for sustainability?

Our trusted and long-term partner, Cisco, is committed to driving meaningful change – leveraging their innovations to help their partners, customers and employees create a more sustainable and positive impact across the globe.

Long term, science-based targets

Cisco has a set target to reach net zero GHG emissions across their value chain by 2040, as approved by the SBTi. To do this, they've committed to significant GHG reductions across their operations, supply chain and product use to deliver a 90% reduction in Scope 1 and Scope 2 emissions by 2025 and a 30% reduction in Scope 3 emissions by 2030. In 2022, 89% of their energy came from renewable sources and they reduced their global Scope 1 and 2 emissions by 39%.

An effective strategy to address environmental challenges

To achieve their net zero targets, Cisco is committed to increasing the energy efficiency of their products and solutions, embedding circularity, accelerating the use of renewables, embracing long term hybrid working and investing new and innovative carbon removal solutions.

A strong sustainability partnership

We have a joint ambition with Cisco to help customers on their sustainability journey, and provide the scale to influence and drive action.

Together, we deliver:

- better value, as we use each other's strengths to produce the best results
- better outcomes and a track record to prove it
- a rich 30-year partnership that knows how to cooperate effectively
- a resilient approach capable of adapting and changing as environments evolve
- a local presence with a global reach in 180 countries
- the ability to transform businesses by supporting customers into the digital age.



Sustainable network refresh in action

Helping a professional services company reach net zero.

The challenge

As part of their net zero 2030 targets, an international professional services company wanted to significantly reduce their CO₂ emissions. However, they lacked the expertise and tools in-house to report and uplift themselves. They were also unsure of how to balance sustainability targets with their operational requirements.

The solution

Using our Digital Carbon Calculator, we were able to provide full visibility into their inventory, baseline carbon emissions and highlight inefficient devices. We showed that switches represented 58% of their total carbon footprint and recommended reconfigurations and low carbon device replacements.

The result

The customer can now accurately estimate their annual carbon emissions based on their current inventory and create five-year energy consumption simulations for planning and forecasting. Plus, following our recommendations, they've replaced the highest offending device type that generated 52% of their carbon footprint.

Next steps towards increased sustainability

Regardless of where you are on your network maturity journey right now, our proposition can help you maximise the sustainability potential of your network infrastructure.

Get in touch with your account manager to find out more about our sustainability solutions



Offices Worldwide

The services described in this publication are subject to availability and may be modified from time to time. Services and equipment are provided subject to the respective British Telecommunications plc standard conditions of contract. Nothing in this publication forms any part of any contract.

© BT Communications Ireland Ltd Registered office: Grand Canal Plaza, Upper Grand Canal Street, Dublin 4. Registered in Ireland No. 141524.

May 2023