NTT DATA | syntphony

Carbon Insights

Syntphony Carbon Insights was developed by syntphony | NTT DATA to help companies and organizations measure, analyze, predict, and optimize the carbon footprint of their IT operations.

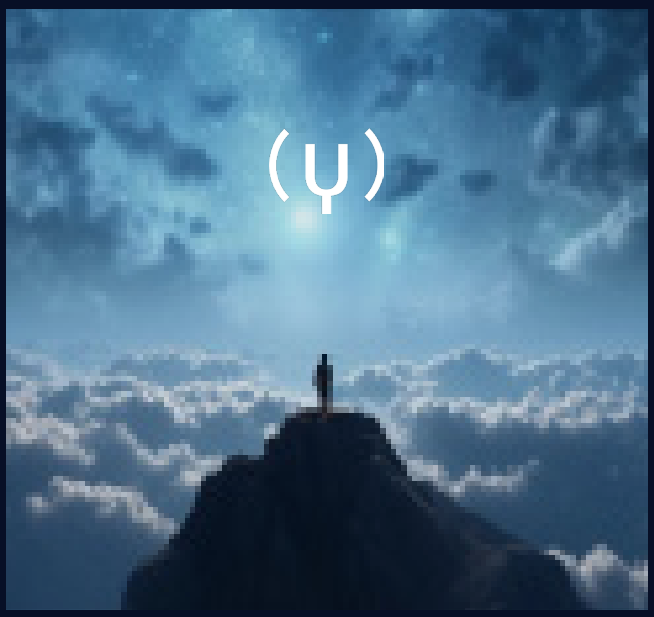
More than just a tool, it is a strategic accelerator: it enables organizations to gain a holistic view of their IT carbon footprint, forecast future scenarios, simulate potential actions, and generate automated reports that comply with the most rigorous international standards.

Designed by sustainability and technology experts, Syntphony Carbon Insights is the cornerstone of any sustainable digital transformation strategy. As part of the Beyond NetZero portfolio, it empowers enterprises to move toward a zero-emissions future without compromising innovation, efficiency, or competitiveness.

- Insurance
- Telco, Media & Technology
- Energy & Utilities
- Retail
- Manufacturing & Consumer Packaging Goods
- Automotive
- Healthcare, Life Sciences & Pharma

Why syntphony ?

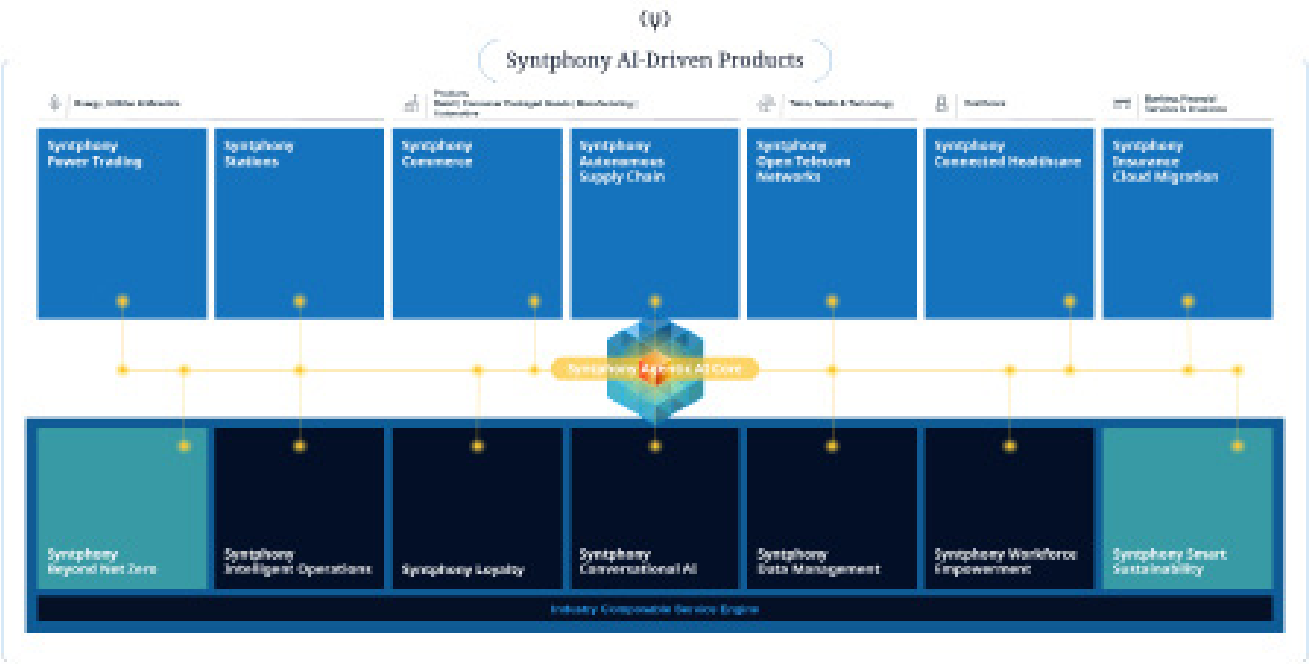
We develop products and solutions that are in tune with businesses



Syntphony is the composable platform of digital products and solutions from NTT DATA, created to help global organisations accelerate innovation, align business strategy with technology, and scale transformation initiatives with speed and efficiency.

Designed for enterprises that demand flexibility, modularity and integration, Syntphony offers a portfolio of ready-to-deploy, enterprise-grade digital products developed by NTT DATA's global talent network. By combining business consulting expertise, proprietary technologies and industry knowledge, the Syntphony ecosystem multiplies the value for clients, reducing time to market and unlocking synergies across multiple domains.

Syntphony is the AI-driven composable platform of NTT DATA, enabling clients to orchestrate scalable, resilient, and future-ready business solutions.



Syntphony Beyond Net Zero

Syntphony Beyond Net Zero is an advanced platform designed to provide end-to-end environmental impact calculation and reporting.

It enables organizations to measure corporate emissions, natural capital impacts, and carbon footprints while supporting the development of decarbonization initiatives to achieve net-zero targets.

This is achieved through scenario simulations and data-driven impact reduction proposals.

Carbon Insights

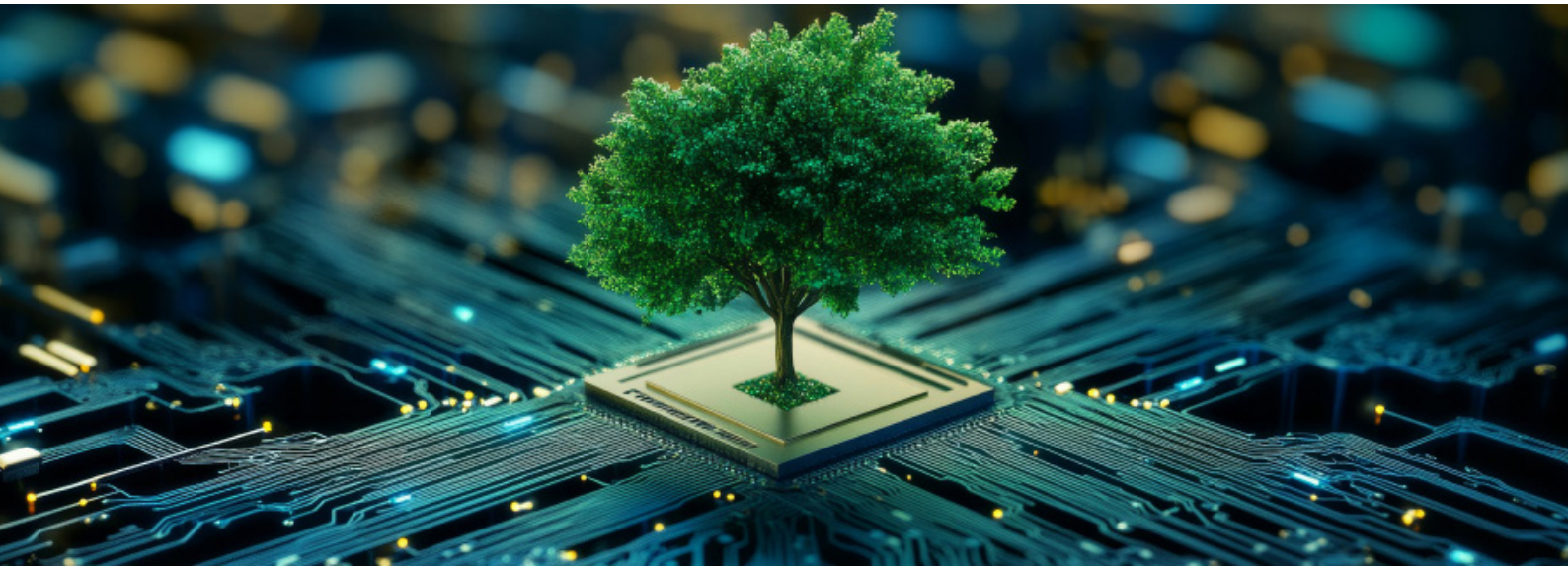
End-to end carbon footprint calculation for devices, applications, cloud, data centres, networks and Real Estate, based on real-time data. Corporate carbon emissions reporting.

Environmental Markets

A secure and traceable blockchain system enabling ESG compliance and sustainable project funding through flexible environmental credit generation across carbon, water, energy and biodiversity assets.

Natural Capital

A digital tool that enables organizations to assess, value and manage their interactions with nature, supporting nature-positive strategies, regulatory alignment and science-based decisions through geospatial data and recognized sustainability frameworks.



IT Emissions on the Rise: Why Action Can't Wait

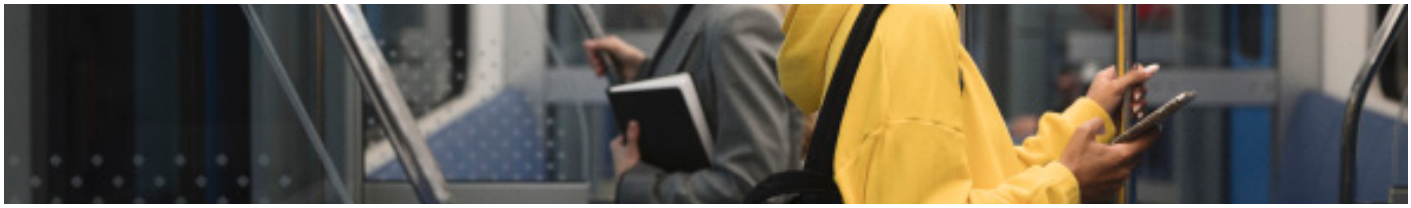
The technology sector is facing a paradox. While it enables digitalization and efficiency across industries, its environmental footprint is growing at an exponential rate.

The facts are clear:

- **By 2028**, global data center consumption will reach **857 TWh**, comparable to the total electricity usage of entire nations such as Japan.
- **5% of global CO_2e emissions** already come from IT, and this figure is projected to rise.
- **Training large AI models** can emit as much CO_2 as five cars over their entire lifetime.
- **85%** of companies admit they lack consistent data to measure IT-related emissions.
- **64% of IT decisions are made without carbon visibility**, leading to fragmented, incomplete, and often misleading data.
- **Training large AI models can consume as much electricity as hundreds of homes per year**, and cooling can require millions of litres of water.
- If unchecked, **AI's energy demand could reach double-digit percentages** of global electricity use within two decades — reinforcing the urgency of ICT decarbonization.

Four forces are making action unavoidable:

1. **Environmental impact:** exponential growth in IT emissions is accelerating climate change, demanding urgent adoption of sustainable practices.
2. **Regulatory pressure:** environmental regulations are tightening worldwide, with severe penalties for non-compliance.
3. **Cost and energy management:** efficient energy use is both an environmental and financial necessity, helping organizations reduce costs while transitioning to renewables.
4. **Corporate responsibility:** customers, employees, and investors demand real sustainability commitments—failing to act can damage reputation and trust.



The result: IT sustainability is no longer optional—**it is a strategic imperative**. Companies unable to measure and reduce their digital carbon footprint risk falling behind in innovation, competitiveness, and compliance.

Yet most organizations lack the tools to measure their IT emissions accurately and consistently.

This is precisely where Syntphony Carbon Insights delivers unique value: **offering the visibility and predictive intelligence the IT sector needs to transition confidently toward a sustainable, competitive model.**

Syntphony Carbon Insights is an end-to-end solution for measuring and managing carbon emissions across IT operations.

Its purpose is clear: to empower organizations to measure today, anticipate tomorrow, and secure a sustainable future.

Unlike partial or siloed approaches, Syntphony Carbon Insights covers the entire IT ecosystem: data centers, networks, hardware, software, and cloud applications. It goes beyond measurement to provide a comprehensive view of emissions, with the ability to simulate, predict, and optimize.

Its key pillars include:

- **Comprehensive footprint analysis:** full lifecycle impact, from hardware manufacturing to cloud application usage.
- **Advanced forecasting:** predictive modeling based on historical data and trends.
- **"What-If" scenario simulations:** evaluate how different IT decisions affect the carbon footprint before implementation.
- **Anomaly detection:** identifies unusual or inconsistent patterns, ensuring trustworthy data.
- **Strategic dashboards:** tailored for CIOs, CTOs, and CSOs to drive actionable insights and set clear targets.
- **Automated compliance reporting:** audit-ready outputs aligned with international standards such as the GHG Protocol.

The modular design offers specialized tools, including:

- **Software Assets Calculator:** measures on-premise and cloud app emissions, ranks the most carbon-intensive applications, and highlights optimization opportunities.
- **Hardware Assets Calculator:** analyzes hardware lifecycle emissions, supported by a database of over 10 million products and 380 categories, with comparative insights by manufacturer and energy savings simulations.
- **CIO Impact Dashboard:** integrates all data into a unified executive view for strategic planning and decision-making.

Ultimately, Syntphony Carbon Insights not only measures emissions but also turns sustainability into a lever for innovation and leadership.

Measure Today, Predict Tomorrow, Ensure a Greener Future

The market is full of tools that track emissions, but few provide an integrated view of the IT universe or the ability to turn data into strategic action.

Syntphony Carbon Insights stands apart by offering:

Holistic coverage
Spanning all IT domains, not just cloud or infrastructure.

Scientific accuracy
Metrics aligned with LCA, GHG Protocol, SCI, and GeSI standards.

Predictive and simulation intelligence
Planning powered by forecasting and “What-If” scenarios.

Guaranteed compliance
Automated, audit-ready reports for international frameworks.

Executive-level insights
Dashboards that translate raw data into actionable strategies.

Scalability and flexibility
Adaptable to organizations of any size and across industries.

Its true differentiator lies not only in its technology but in its ability to enable sustainable IT transformation. In an environment shaped by regulatory and societal pressures, having a solution that measures precisely and guides effective decarbonization strategies is invaluable.

Agentic AI in Beyond Net Zero: Product-Specific capabilities

Beyond Net Zero portfolio embeds advanced agentic AI capabilities across multiple sustainability domains, enabling autonomous execution of Environmental, Social and Governance workflows, enhanced data intelligence, and scalable operational efficiency. These capabilities are tailored per product to maximize business impact and sustainability outcomes.

NetZeroIQ Reporting Agent

Generate standardized GHG and ESG reports directly from platform data, ensuring consistency, accuracy, and auditability.

CarbonIQ Data Agent

Ingest external documents (PDFs, bills, CAD plans, images) and automatically extract, structure, and map sustainability data into platform models.

Data validation & quality agents

Detect anomalies, inconsistencies, and incorrect emission factors using historical comparisons and ML-driven validation.

Sustainability Copilot

Provide recommendations for energy savings, decarbonization pathways, and resource efficiency based on contextual and predictive insights.

Credit Guarantee Agent

Automate validation processes (e.g., project documentation, satellite imagery, technical consistency checks) improving integrity and trust in sustainability data.

Business value delivered by agentic AI

Accelerated time to value

AI agents reduce reporting cycles and onboarding time by automating data ingestion, validation, and report generation.

Improved data quality & trust

Automated validation and anomaly detection ensure high-quality, auditable ESG data across all domains.

Operational efficiency gains

Significant reduction in manual effort across workflows such as reporting, document processing, and compliance validation.

Enhanced decision-making

Predictive insights and AI-driven recommendations improve planning, forecasting, and sustainability strategy execution.

Scalable sustainability operations

Ability to scale across assets, geographies, and regulatory frameworks without increasing operational complexity.

Beyond Net Zero enables clients to transform sustainability into a strategic driver of value by leveraging agentic AI to automate ESG processes, improve data accuracy, and accelerate reporting. It empowers organizations with predictive insights and optimization capabilities that reduce costs and emissions while enhancing decision-making. Ultimately, it delivers scalable, intelligent sustainability operations that strengthen compliance, efficiency, and competitive advantage.

Business and Environmental Value in One Platform

Total Visibility and Control

Gain a unified view of IT-related emissions across hardware, software, data centers, and networks. Eliminate silos, establish a single source of truth, and enable leaders to prioritize high-impact interventions for effective carbon management.

Operational Optimization

Identify inefficient assets, energy-intensive workloads, and underutilized resources. Optimize operations to simultaneously reduce emissions and cut costs, transforming sustainability into a driver of efficiency and profitability.

Regulatory Compliance and Risk Mitigation

Generate audit-ready reports aligned with GHG Protocol and global standards. Reduce compliance risk, avoid penalties, and demonstrate transparency to regulators, investors, and customers.

Strategic Planning with Forecasting and Simulation

Use predictive modeling and “What-If” simulations to understand how today’s IT decisions shape tomorrow’s emissions. Support long-term strategies, allocate resources effectively, and set science-based sustainability targets.

Reputation and Stakeholder Trust

Build credibility with measurable sustainability progress. Strengthen investor confidence, enhance employer branding, and position your organization as a leader in environmental responsibility and green innovation.

Tangible Emissions Reduction

Translate insights into measurable action. Prioritize initiatives with the highest impact, track progress in real time, and continuously refine strategies to achieve significant, verifiable carbon reductions.

From Dashboards to APIs: Tools That Drive Action

CIO Impact Dashboard

A unified executive dashboard offering emissions snapshots, breakdowns, forecasts, and interactive target setting—turning sustainability into a clear, data-driven management tool.

Software Assets Carbon Calculator

Measure application emissions, rank high-impact apps, simulate workload optimization, and generate GHG-compliant reports to reduce the carbon intensity of your digital estate.

Hardware Assets Carbon Calculator

Analyze hardware lifecycle emissions with a 10M+ product database. Compare manufacturers, simulate upgrade savings, and generate compliance-ready reports for smarter IT procurement and lifecycle management.

Advanced Forecasting

Leverage historical data to predict future emissions trajectories. Set realistic, science-based targets and build long-term sustainability strategies with confidence.

"What-If" Scenario Simulations

Test IT strategies before implementation—migrating workloads, refreshing hardware, or shifting to cloud—to identify the most impactful and cost-effective sustainability actions.

Anomaly Detection

Ensure reliable, trustworthy data. Detect unusual patterns or inconsistencies in emissions reporting, improving accuracy for both decision-making and compliance.

Automated Reporting

Generate detailed, customizable, GHG-compliant reports. Save time, reduce administrative burden, and communicate sustainability performance clearly to stakeholders.

Carbon Insight API

Embed sustainability data into corporate dashboards through API integration. Enable customized monitoring and make carbon insights part of everyday operations.

Cloud Module

Highlight multi-cloud (AWS, Azure, GCP) and hybrid (cloud vs on-prem) visibility, along with regional optimization based on carbon intensity.

Regional Emissions Feature

Include the geospatial insights and ESG reporting capabilities

Trusted, Transparent Data

Our Carbon Calculator uses verified data from OEMs, audited providers, and real-time telemetry to ensure every result is accurate and GHG-compliant. Regular quality checks, external validation, and up-to-date regional factors guarantee transparency and confidence in every calculation.

API integration with ServiceNow/ asset management platforms

Carbon Data Platform for IT

An organization wants to centralize and understand the environmental impact of its technology infrastructure. To achieve this, it integrates data from devices, data centers, networks, applications, and hardware into a unified platform such as the ICT Carbon Insights from Syntphony (NTT DATA).

How it's used:

- Energy consumption and telemetry data are connected through API adapters.
- The platform processes carbon intensity metrics, device information, and external data sources.
- Results are displayed in a dashboard that allows business units to understand emissions by device, application, or service.

Value delivered:

- Full visibility into the environmental impact of the IT landscape.
- Identification of opportunities to reduce emissions and optimize resources.
- Integration with internal tools (FinOps, carbon accounting, management platforms) to support reporting and decision-making.

Sustainable Insights Dashboard

An organization wants to turn its existing IT install base into clear, actionable sustainability insights. It uses a Sustainable Insights Dashboard to convert operational data into metrics on energy efficiency, emissions, and resource usage.

How it's used:

- The organization accesses a service portal where its sustainability dashboard is available.
- Data from thousands of IT assets (endpoints, servers, networks, etc.) is processed.
- The dashboard provides insights on energy consumption, emissions, and optimization opportunities.

Value delivered:

- Transparency on energy use and emissions across the entire IT environment.
- Tangible actions to reduce carbon footprint and operational costs.
- Improved sustainability maturity and alignment with corporate sustainability goals.

Rapid Assessment of Maturity and Emissions with TLMA-Express

A company needs a quick assessment of the environmental impact of its IT infrastructure and clear recommendations for improvement. A consultant performs a TLMA-Express evaluation supported by the ICT Carbon Insights.

How it's used:

- Basic data from the IT infrastructure is collected.
- The assessment estimates emissions, identifies quick-win opportunities, and generates a maturity benchmark.
- The consultant delivers a report with recommended actions and a transformation roadmap.

Value delivered:

- Rapid measurement of IT-related emissions.
- Identification of immediate energy-efficiency improvements.
- Prioritized enhancement actions backed by data.
- A clear foundation for planning a transition toward a low-carbon IT landscape.

Internal Validation and Reporting Using the Carbon Calculator

A large organization chooses to validate the carbon calculator internally before extending it to other business units.

How it's used:

- The IT department analyzes the impact of tens or hundreds of thousands of end-user devices and critical applications.
- A cloud pilot is conducted to measure emissions from cloud workloads.
- The corporate sustainability office uses the tool to report on Scope 3 categories, including:
    - Purchased goods and services.
    - Upstream transport and distribution.
    - Use of sold products.
    - End-of-life treatment of product.

Value delivered:

- The organization tests and validates its own data before broad deployment.
- Establishes a more reliable emissions reporting process.
- Gains accurate insights to support internal carbon-reduction initiatives.

Regulatory Reporting

Automate carbon reporting aligned with GHG Protocol and global standards. Ensure audit readiness, minimize compliance risk, and streamline communication with regulators, investors, and stakeholders.

IT Asset Lifecycle Management

Evaluate embodied and operational emissions of hardware assets. Simulate upgrades, extend asset lifecycle strategically, and make procurement decisions that reduce both costs and carbon footprint.

Cloud Migration Planning

Assess workload placement between on-premise and cloud. Model energy and emissions impact to guide migrations that balance performance, cost, and sustainability outcomes.

Application Portfolio Optimization

Rank applications by carbon intensity, identify high-impact workloads, and simulate migration scenarios. Reduce emissions while improving efficiency across your software landscape.

CIO/CSO Target Setting

Use the CIO Impact Dashboard to establish, monitor, and adjust carbon reduction goals. Enable cross-functional alignment between IT operations and corporate sustainability strategies.

Strategic Consulting Enablement

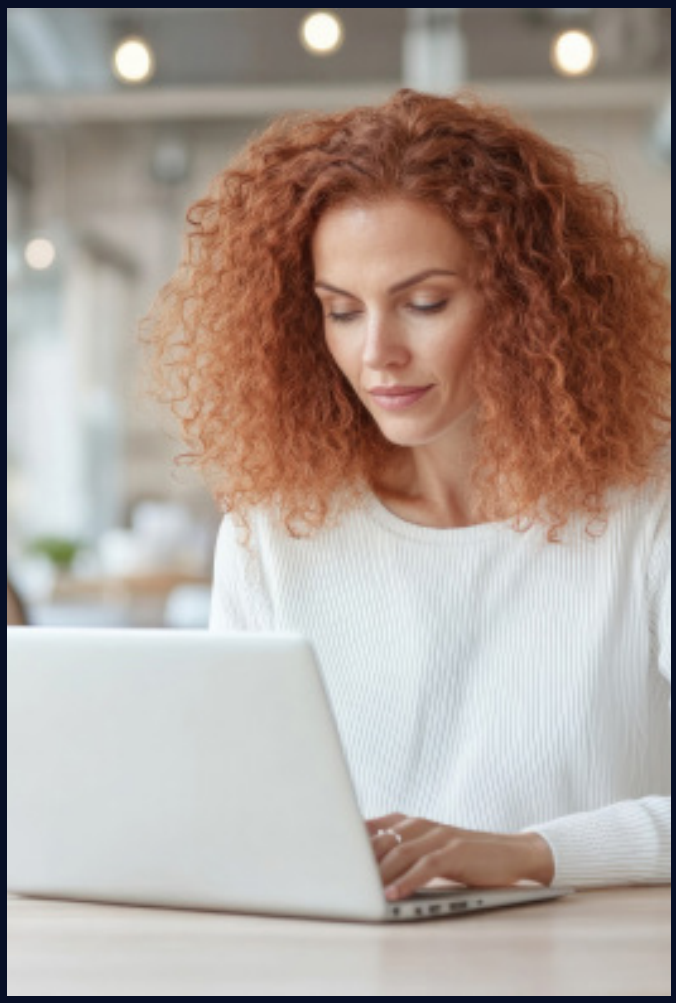
Support IT sustainability consulting with detailed analytics, forecasting, and simulations. Empower transformation initiatives across Carbon Essentials, Advanced, Optimise, and Evolve phases.

Cost and Energy Efficiency Programs

Identify inefficiencies in IT operations. Reduce energy use and operational costs while lowering emissions, aligning financial performance with sustainability goals.

ESG and Stakeholder Engagement

Provide transparent, data-backed sustainability progress to investors, clients, and employees. Strengthen ESG performance, enhance reputation, and build long-term trust.



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About NTT DATA

NTT DATA - a part of NTT Group - is a trusted global innovator of IT and business services headquartered in Tokyo. We help clients transform through consulting, industry solutions, business process services, IT modernization and managed services. NTT DATA enables clients, as well as society, to move confidently into the digital future. We are committed to our clients' long-term success and combine global reach with local client attention to serve them in over 50 countries.