An executive guide to sustainability insights for IT infrastructure

NTT DATA Infrastructure Solutions

This guide examines how business leaders can measure the environmental footprint of their organizations, make informed strategic decisions and turn sustainability goals into a tangible competitive advantage.

We explore how the Sustainability Insights dashboard within NTT DATA's AI-powered Software-defined Infrastructure (SDI) Services helps organizations gain a unified, multivendor view of IT carbon emissions and energy consumption, while uncovering opportunities to reduce both, and accelerate the progress toward net zero.

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The new sustainability mandate: Innovation without depletion

Our planet's resources are finite. Carbon budgets are shrinking, and water is under pressure. Minerals like cobalt have hidden costs, fossil fuels are in limited supply and renewable energy is weather dependent and not always reliable. In this scenario, achieving net-zero is not just a goal but an obligation.

The push towards digitization has seen rapid growth in IT infrastructure, raising numerous questions and concerns about its environmental impact. And rightly so: if not managed properly, it risks being part of a global environmental problem. Because behind its promise of efficiency, optimization and cost savings lies a real dependence on energy, water and critical materials. AI adds to this pressure. With vast amounts of data to process, store and train, it demands ever more powerful hardware and energy-hungry data centers.

Green IT is being framed as the solution, but what does it actually mean? And who should be tasked with "making IT green?"

Digitalization is expanding, and so are leaders' responsibilities

Simply put, green IT refers to building and running IT systems in ways that minimize its environmental footprint.

As digitalization expands across industries, part of the responsibility for this rests firmly with Chief Information Officers (CIOs), Chief Sustainability Officers (CSOs) and IT leaders. They face the difficult task of meeting ambitious net-zero goals, complying with sustainability regulations and enabling ongoing innovation across the business while keeping costs in check.

To weigh up their options before making big decisions, they need clear, verifiable data. But this is a significant challenge when data is siloed and key metrics like Scope 3 emissions are difficult to measure.

A net-zero challenge

Step into Maria’s world. As the new CIO at a global logistics firm, she is responsible for transforming their IT landscape to support the organization’s strategy for net-zero emissions.

This directive is part of a much bigger picture. Her board recognizes that sustainability is a business strategy with direct consequences for their bottom line, market position and long-term resilience. Apart from meeting compliance requirements, it’s also about making IT a catalyst for competitive differentiation.

While Maria can make progress in optimizing technology operations and driving digital sustainability initiatives, she still faces an apparently insurmountable challenge: the environmental impact of the firm’s vast and complex IT estate.

Across data centers, warehouses and offices located around the globe, their digital footprint is staggering and difficult to measure — thousands of servers, endless network gear and devices in every hand. Somehow, Maria needs to transform this sprawling web of IT infrastructure into a strategic advantage.

Here’s how she does it.

The business case: Where sustainability makes an impact

In collaboration with different departments across the enterprise, Maria begins by establishing a business case.

Navigating regulatory pressure

Governments worldwide are enforcing stricter environmental reporting standards and more stringent environmental, social and governance (ESG) regulations. For Maria — and the firm — adherence to these regulations is nonnegotiable. Compliance will help mitigate legal risks and secure access to key global markets.

Although many of these regulations are still maturing, with frequent updates and changes, Maria has to start somewhere.

The first step in her green IT journey is to tackle two major global regulations head-on. Working closely with the legal and financial team, she maps the requirements of the US Securities and Exchange Commission and the European Union's Corporate Sustainability Reporting Directive against her IT estate to identify gaps and set clear priorities.

Unlocking financial benefits

Maria's biggest advocate on her sustainability journey is the CFO. He understands the significant impact of green IT on the bottom line.

Working with the financial team, Maria sets out the financial impact of sustainability on both opex and capex:

- **Lower operating expenses:** Optimizing IT infrastructure for energy efficiency delivers big savings on electricity, a major, and sometimes unpredictable, operational expense.
- **Lower capital expenditure:** Effective IT asset management, including refurbishment, reuse and extended hardware lifecycles, minimizes spending on new equipment and cuts e-waste disposal costs.

Innovating responsibility

While Maria knows that innovation is central to operational excellence and long-term growth, she is also aware the underlying technologies must be adopted without compromising on the organization's long-term ESG goals — especially when it comes to the adoption of AI. If not embedded into the strategic framework responsibly, it can have a devastating effect on their environmental footprint.

Maria brings in the firm's CTO and CSO to discuss how the organization's technology roadmap will affect sustainability. As a team, they must prioritize energy-efficient AI models and work closely with their cloud providers to ensure both environmental and ethical standards are met.

And, in collaboration with the Chief Risk Officer and Chief Legal Officer, they must also make sure that strong data governance, transparency and regulatory compliance is upheld.

Together, they establish clear accountability frameworks, conduct lifecycle impact assessments of the organization's AI tools and integrate sustainability metrics into AI procurement and deployment decisions.

Alignment to organization's ESG goals

Maria works closely with the CSO, who understands that in the era of heightened environmental awareness, an organizatoin's commitment to sustainability can be a powerful differentiator.

For Maria, the spotlight falls on two critical audiences: customers and investors.

- Attracting customers: Insights from HX by Transport Exchange Group suggest that sustainability has become a deciding factor in logistics, with many customers now requiring evidence of green practices as part of the tender process.
- Building investor confidence: Strong ESG performance is now central to investment strategies, leading to better valuations and a lower cost of capital.

Attracting the green workforce

Maria also knows partnering with the Head of HR is a must, because top talent too often makes employment choices based on whether an organizatoin is committed to sustainability. According to TechnologyAdvice, as reported by Workplace Ethics Advice, 42% of Gen Z workers say they would accept a pay cut to take a role that makes meaningful impact.

The blueprint: Mapping the sustainability strategy

Having established a foundation across the business, Maria formulates her plan. She understands fundamentally that achieving real IT sustainability needs a holistic strategy across the organization's technology lifecycle — from suppliers to users.

In mapping her approach, she addresses four interconnected pillars:

1. Energy efficiency and operations
2. Circularity and e-waste
3. Responsible sourcing and hardware
4. Software and data optimization

The 4 pillars of a sustainable IT lifecycle

Energy efficiency and operations

Optimize power usage in data centers, networks and user devices

Circularity and e-waste

- Extend asset lifecycles through reuse and refurbishment
- Recycle end-of-life assets responsibly

Software and data optimization

Address the hidden impact of inefficient software and excess data to lower background-energy demand

Responsible sourcing and hardware

Reduce the embodied carbon of hardware by making sustainable procurement choices

When Maria began sketching her blueprint, the elements looked good on paper. And they were, in theory — energy efficiency, circularity, responsible sourcing, smarter software. Everything was there. But one concern lingers: How can she possibly manage this across a global enterprise if she can't measure it properly?

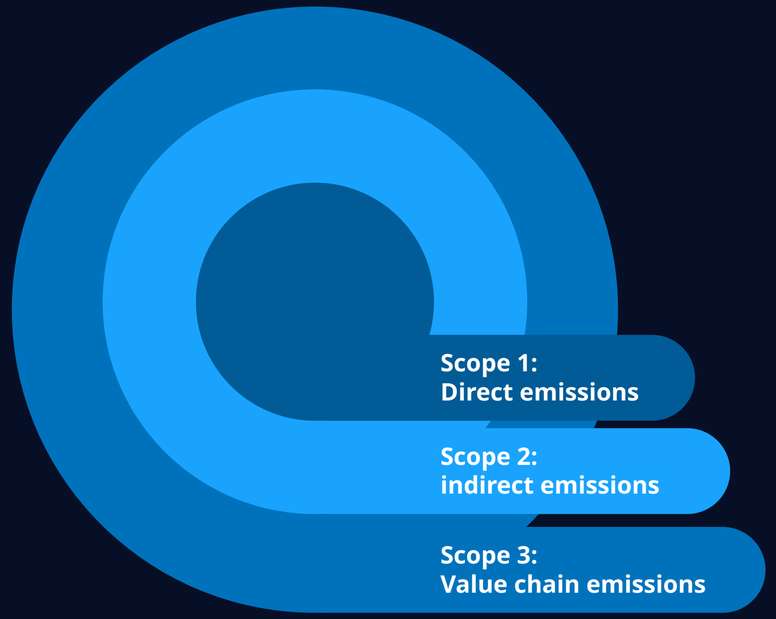
Without reliable data, the blueprint remains a theoretical framework rather than presenting a clear way forward.

The challenge: Finding the data

What do you do when information is fragmented, inconsistent and buried across different departments?

First, Maria tries to understand the company's emissions, especially those falling under Scope 3.

Understanding your IT emission scopes



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Scope 1: Direct emissions

Emissions from sources we own or control

IT examples: Onsite backup generators for data centers

2

Scope 2: Indirect emissions

Power consumed by our data centers, network gear and office IT equipment

3

Scope 3: Value chain emissions

All other indirect emissions from sources we don't own or control

IT examples:
Embodied carbon of hardware: Manufacturing and transport of servers, laptops and other devices

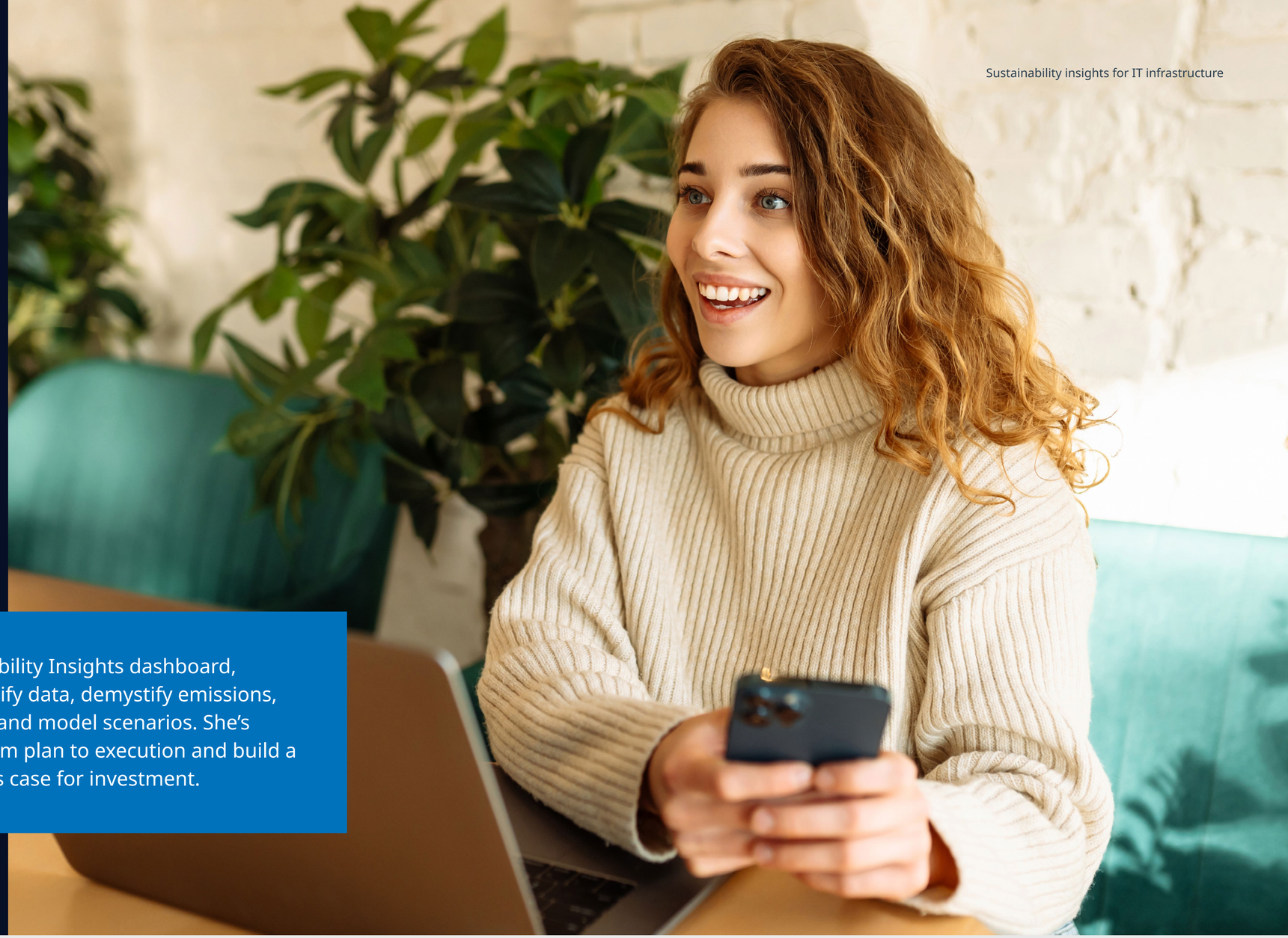
- Cloud services: Emissions from our cloud service provider's data centers
- Remote work: Energy consumed by employees' home IT equipment
- E-waste: Emissions from the disposal and recycling of old assets

But she needs more. Many leaders on the path to green IT face the same challenge — difficulty in measuring and reporting environmental impact. Knowing you're not alone may be comforting, but it doesn't solve the problem. The data she needs is siloed across IT operations, procurement and various facilities worldwide. This prevents her from gaining the holistic view she so desperately needs to turn her plan into measurable action.

The solution: Gaining clarity with sustainability insights

Maria knows that to turn her ambition into action, she needs a single source of truth — a platform specifically designed to demystify the company's IT-related environmental footprint. Always thorough, Maria does her research and finds a conclusive solution: NTT DATA's Software-defined Infrastructure Services with the integrated Sustainability Insights dashboard.

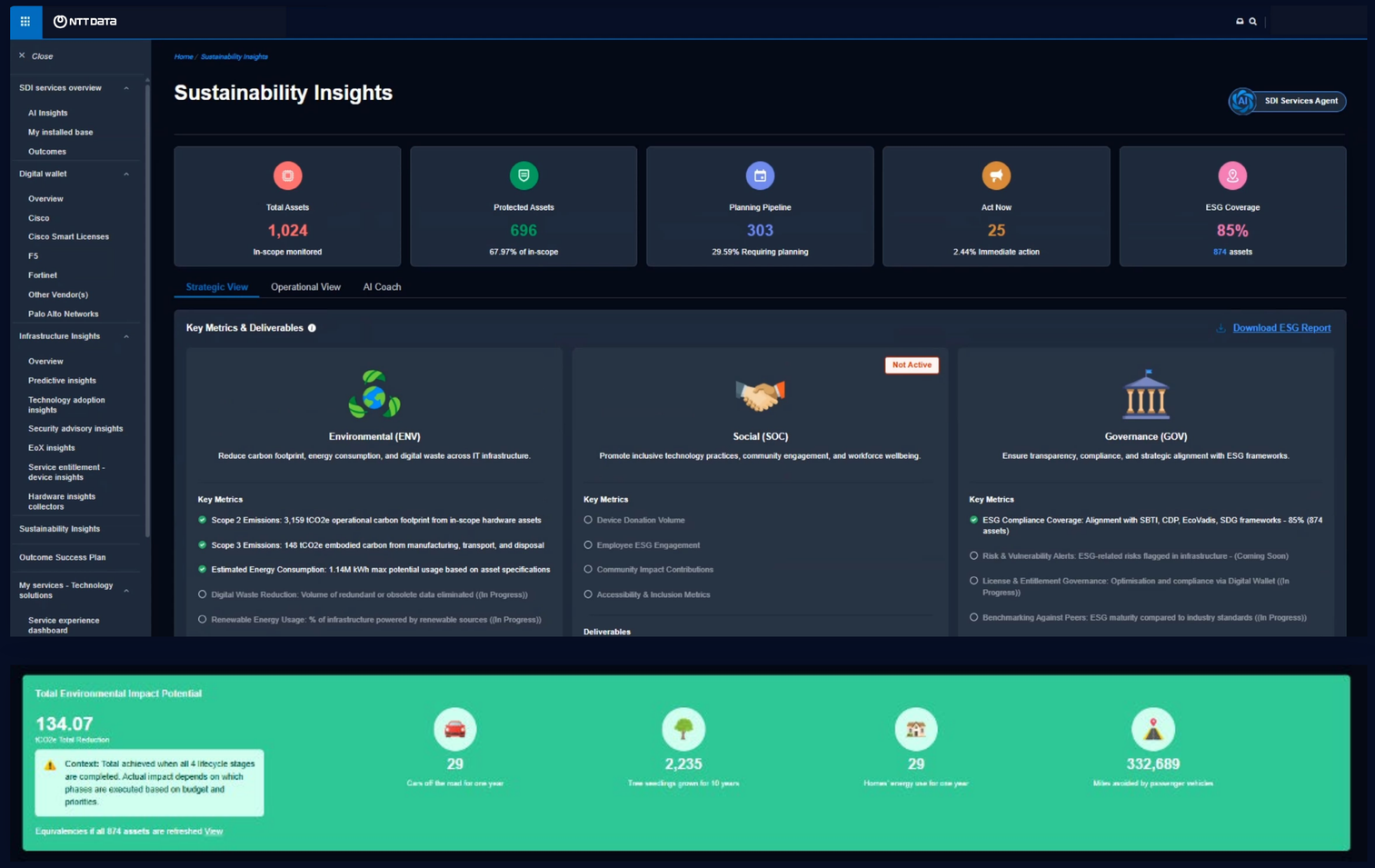
Built on a simple yet powerful principle — measure, track and optimize — this platform turns a fragmented view of her IT estate into something she can actually work with.



With the Sustainability Insights dashboard, Maria can now unify data, demystify emissions, identify hotspots and model scenarios. She's ready to move from plan to execution and build a powerful business case for investment.

Sustainability insights

* Screenshots from the NTT DATA Sustainability insights dashboard



The result: Action with a clear ROI

Maria finally has visibility of what she's been missing all along — a clear, single view of her company's entire IT footprint. The Sustainability Insights dashboard shows where the biggest impacts come from, how to dig into the details and where change will deliver the greatest impact. For the first time, Maria has actionable information.

Here's how the data helps Maria turn visibility into results:

1. **Identification:**
The dashboard immediately flags that legacy network hardware, which has high embodied carbon, is a key factor in the company's Scope 3 emissions.

2. **Deep dive:**
Using dashboard filters, Maria and the IT Director zoom in on specific aging models across dozens of global sites. They can see the exact impact, both environmentally and operationally.

3. **Strategic planning:**
Using comparative data and insights into newer, more energy-efficient models, they plan a proactive hardware refresh that shows both the potential carbon reduction and the long-term energy savings it will deliver.

4. **Action and results:**
Now that Maria has a clear, data-driven case, the board approves her upgrade initiative. Throughout the upgrade, the Sustainability Insights dashboard shows the changes. There is a measurable decrease in Scope 3 emissions within months, proving a clear ROI.

Maria can finally step in front of her board with confidence. What was once a blind spot is now clear, and progress is verifiable — backed by data. Her success transformed the IT department from a cost center into a trusted partner in the company's sustainability goals.

Your version of the sustainability story

Every enterprise has its own version of Maria’s story, and every IT leader has a chance to shape what comes next.

The shift to a fully sustainable digital future will be defined by hypergranular visibility, true circularity and AI-driven green operations. By choosing the right partner, you can find clarity in the ambiguity, deliver measurable results and achieve your net-zero goals.

NTT DATA is that partner. Our commitment to achieving net-zero emissions by 2040 isn’t just a corporate goal — it’s a belief we bring to every client engagement.

Through our Software-defined Infrastructure Services and Sustainability Insights, you can follow in Maria’s footsteps:

- Gain unrivaled insights into your IT-related environmental footprint
- Make data-driven decisions that turn IT investments into green investments
- Comply with evolving regulations and capitalize on green market opportunities
- Unlock new value through financial savings and a positive brand reputation

Turn the page on your own story

This is not a challenge you have to take on alone. Our Sustainability Insights dashboard is ready to support you right now.

Let’s talk about how we can help you transform your IT into a force for positive change.

Learn more

Sources

This guide is based on insights and data from leading industry reports, governmental bodies, academic research and recognized nonprofit organizations to provide a comprehensive overview of IT sustainability. The following sources were referenced to support the analysis and conclusions presented:

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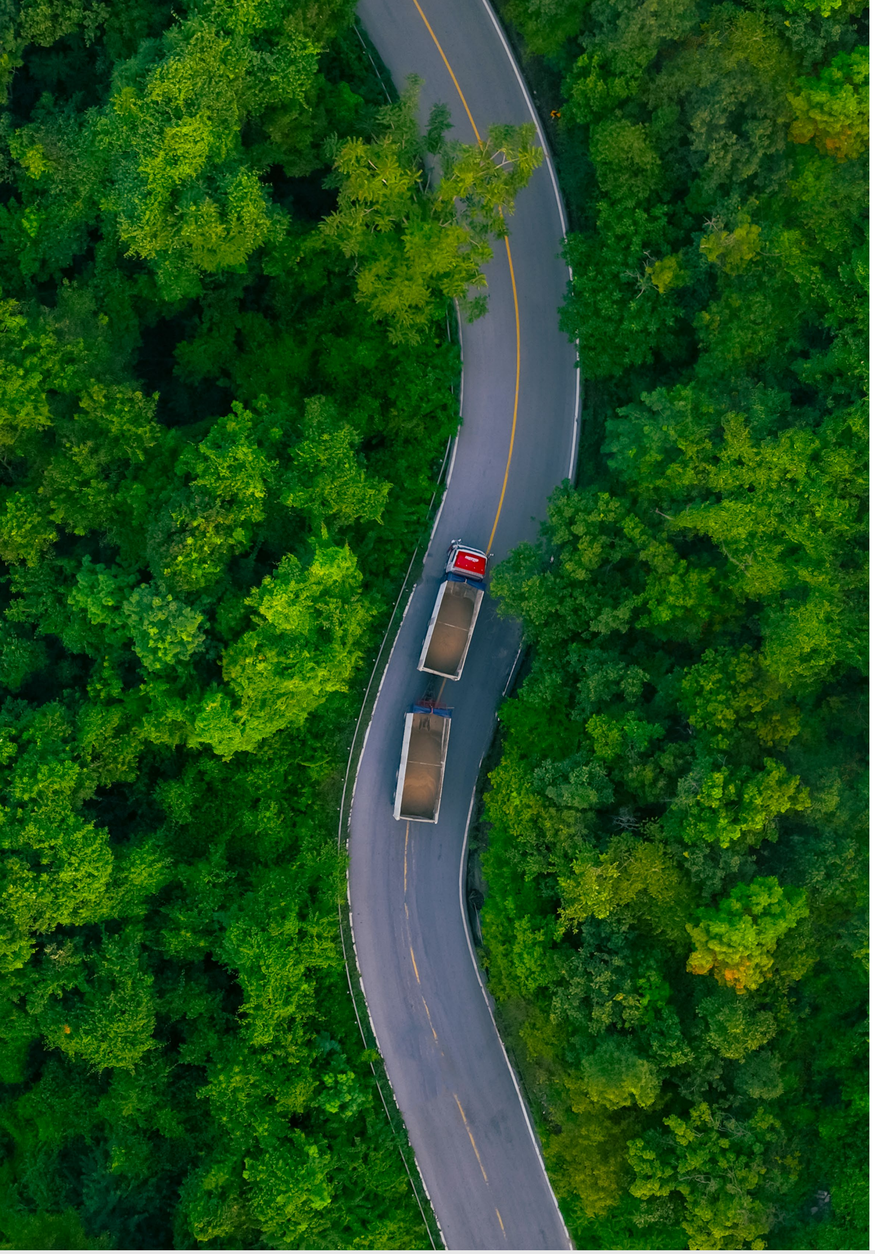

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