

# Our sustainability ambition

Planet. People. Potential.  
Everything is interconnected.



# CEO foreword

**A year ago, we set out our sustainability ambitions which put us on a path to achieve operational net zero emissions by 2030. Our approach, guided by the United Nations Sustainable Development Goals and using science-based targets, focuses on three interconnected themes: connected planet, connected economy, and connected communities.**

Already, we are making an impact. Over the past 12 months, through commitment, determination, and our passion to make a difference, NTT and the technology we deploy has been creating better outcomes for our clients, partners, and society.

Some of our achievements include:

- **Introducing three days of volunteering leave for all employees.** Over 1,500 of our people have devoted their time this year to support their communities.
- **Reaching 1 million MWh of renewable energy** puts us firmly on track to realize our 2030 target of using 100% renewable energy and achieving net zero emissions.
- **Launching our Internet of Things (IoT) for Sustainability** in May, and our Net Zero Climate Action solution at the Mobile World Conference in Las Vegas in September.
- **Establishing global parental leave, transgender, and gender-variant policies.** We also support our LGBTQ+ colleagues and colleagues with disability through our Pride and Accessibility alliances.
- **Placing sustainability at the heart of our strategy.** And we have appointed a new Chief Risk and Sustainability Officer, Zella Fuphe.

And while there is a great and collective pride in what we have achieved so far, we are committed to doing more and having an even greater impact. To connect data, things and people in ways that transform business, society and the planet for the better.

- **Reducing 200 million tonnes of greenhouse gas emissions across our value chain** requires a collective industry approach. So we are engaging with our partners to embed sustainability impact data into purchasing decisions and circularity into IT asset lifecycles.



- **Diversity and inclusion make a positive difference.** So we've committed to having 50% of our workforce belong to one or more diversity categories and doubling the female representation in our executive leadership by 2025.
- **Actions are local.** So we have committed to 1 million hours of employee volunteering every year from 2025, focused on education and conservation in their local communities.

It was Mahatma Gandhi who said that, "The future depends on what you do today." I believe that at NTT Ltd., we are doing things today that will change all our collective futures for the better.

I believe that our best is yet to come.

**Abhijit Dubey**

Chief Executive Officer, NTT Ltd.

## Our sustainability commitments

Our approach is guided by the United Nation Sustainable Development Goals (SDGs). Through a materiality assessment, we've identified the areas where our people, operations and solutions can have the greatest impact across our three interconnected themes of planet, economy and communities.

## Our sustainability ambition

Our approach to sustainability is guided by the United Nation's Sustainable Development Goals (SDGs). We've identified three interconnected themes to which we are dedicating our resources. They are planet, economy and communities.

 <h3>Connected Planet</h3>	 <h3>Connected Economy</h3>	 <h3>Connected Communities</h3>
<p>Using technology solutions to help protect, restore and regenerate the natural world, and conserve precious natural resources for future generations.</p> <ul style="list-style-type: none"> <li>  <b>Climate change</b>                      Reducing our own emissions to net zero, abating our clients' emissions and proactively responding to climate-related risks.                 </li> <li>  <b>Biodiversity</b>                      Using technology to protect the natural world and regenerate ecosystems and oceans.                 </li> <li>  <b>Circularity</b>                      Building circularity and regenerative principles into the way we operate, reducing waste, emissions and water usage across our value chain.                 </li> </ul>	<p>Using our trusted technology to help organizations thrive and make their contributions to a sustainable and resilient digital future.</p> <ul style="list-style-type: none"> <li>  <b>Smart Solutions</b>                      Creating secure digital solutions with our partners to tackle social and environmental issues for clients across multiple sectors.                 </li> <li>  <b>Privacy and data security</b>                      Ensuring the maximum security and privacy of our solutions, to enable the safe running of services and critical infrastructure.                 </li> <li>  <b>Ethics, values and governance</b>                      Acting transparently and responsibly to build a connected, trusted economy.                 </li> </ul>	<p>Supporting diverse and inclusive communities in areas where we operate by enabling access to opportunities for people to realize their potential.</p> <ul style="list-style-type: none"> <li>  <b>Digital access</b>                      Enabling accessible and inclusive connections, to ensure everyone benefits from a digital economy.                 </li> <li>  <b>Education and upskilling</b>                      Facilitating access to education and building skills for the future.                 </li> <li>  <b>Diversity, equity and inclusion</b>                      Building a more diverse and inclusive workforce and world, through targeted efforts with marginalized groups.                 </li> </ul>
<h4>Our commitment</h4> <ul style="list-style-type: none"> <li>Net-zero emissions across our operations by 2030, and across our value chain by 2040</li> <li>100% renewable energy in our data centers by 2030, and in our offices and facilities by 2035</li> <li>Solutions for biodiversity on every continent where we operate by 2025</li> <li>Incorporate circular design into the way we operate by 2026 to reduce waste and carbon emissions</li> </ul>    	<h4>Our commitment</h4> <ul style="list-style-type: none"> <li>Grow our portfolio of smart solutions to support our clients and partners in reducing 200 million tonnes of greenhouse gas emissions by 2026</li> <li>Establish a Sustainability Innovation Fund and mentorship program for climate technology and smart solutions</li> <li>Maintain the best standards of cybersecurity, data privacy and data protection</li> <li>Ensure high standards of ethical behavior in line with our Code of Business Conduct and Ethics and underpinned by our values of integrity, trust and connect</li> </ul>    	<h4>Our commitment</h4> <ul style="list-style-type: none"> <li>Provide 5 million young people and children from underprivileged areas with digital access and education opportunities by 2030</li> <li>Contribute 1 million hours of employee volunteering every year from 2025, focused on education and conservation</li> <li>Have more than 50% of employees belonging to one or more diversity categories by 2025</li> <li>Double the diversity of our executive leadership team by 2025</li> </ul>     

# Connected Planet



## Climate change

Our commitment is to reduce our own emissions to net-zero, help to reduce our clients' emissions and respond proactively to climate-related risks.

## Achieving net-zero

We have committed to net-zero emissions across our operations by 2030 (including 100% renewable energy in our global data centers) and across our value chain by 2040. Achieving these ambitious targets requires long-term planning and investment to decarbonize, a journey we have started.

## Understanding our carbon emissions

NTT Ltd 2021 GHG emissions

Scope 1		Scope 2		Scope 3	
<b>Fuels we burn</b> Emissions from energy sources controlled or owned by us		<b>Power we consume</b> Indirect emissions from purchased electricity, steam, heat and cooling		<b>Upstream</b> What we buy from suppliers	
<b>Downstream</b> What we sell to clients		<b>7.73 M tCO<sub>2</sub>e &gt; 95%</b>			
<b>0.015 M tCO<sub>2</sub>e ~ 0.18%</b>		<b>0.37 M tCO<sub>2</sub>e ~ 4.7%</b>		<b>7.73 M tCO<sub>2</sub>e &gt; 95%</b>	
Company vehicles	In our own facilities and offices	Carbon embedded in production and transportation of IT hardware, software and services we purchase	Electricity usage (IT load) by clients in our co-location data centers	Back-up generators in data centers	Electricity used by hardware sold to clients
Fugitive emissions in data centers	Cooling of our data centers	Capital goods (e.g. building data centers)	End of life of hardware we sell to clients	Investments	Employee business travel and commuting

In 2021 NTT Ltd. greenhouse gas emissions across scope 1, 2 and 3 amounted to 8.11 million tCO<sub>2</sub>e. More than 95% of these were scope 3 and came from indirect emissions across our value chain. Scope 1 and 2 emissions from sources within our operational control accounted for 5% of our carbon footprint.

These numbers are based on preliminary data collection and a screening exercise and may be subject to change as we refine and improve our data collection and coverage. For more details on how we report our numbers, please see our [basis of reporting](#).

## Switching our data centers to renewable energy

Most of our scope 1 and 2 emissions are associated with running our data centers and the electricity we use to power them.

More than 30% of the energy we use in our data centers comes from renewable sources. To achieve 100% renewable energy by 2030, we are choosing energy tariffs with low carbon intensity and releasing requests for proposals for medium and long-term power purchase agreements (PPA) with utilities suppliers. We reached 1 million MWh renewable energy use last year, and we are already set on exceeding this during the current year. This puts us firmly on track to realize our 2030 target of using 100% renewable energy and achieving net zero emissions.

## Investing in joint ventures for renewable energy

We are also investing directly in joint ventures for [renewable energy generation](#). In India, we have already invested more than USD 20 million in joint renewable energy projects with partners. This includes building a 50MW solar photovoltaic power plant to power our Mumbai data centers and a 20MW captive wind and solar power plant in Karnataka which will power our data centers in Bangalore.

Our energy efficiency program has already improved the performance of our data centers by more than 20% over the last seven years. This has been bolstered by continued research and development globally as we explore new ways to sustainably power our future operations. Our [London 1 Data Center](#) uses a new cooling design that does not rely on a traditional

chiller plant with compressors, realizing significant energy savings. The facility uses 100% renewable energy and has achieved an “Excellent” BREEAM rating (Building Research Establishment Environmental Assessment Method).

We are also working toward 100% renewable energy in our offices and facilities by including this requirement in our real estate strategy and renewal negotiations with landlords. In Europe, for example, 66% of the electricity in our offices already comes from renewable sources.

## Reducing emissions across our value chain

Reducing our scope 3 emissions from hardware and services requires strategic engagement with our suppliers and customers. We are discussing standards for measuring the sustainability impact of products and services with our leading suppliers so we can embed this data in our purchasing decisions. By embedding circularity and as-a-service models in our products and solutions, we are driving down emissions related to manufacturing, energy consumption, upstream/ downstream transportation and end-of-life treatment in both our own business and the operations of our clients.

Our global data centers division is establishing clear baselines and plans per site to embed renewable energy, carbon reduction targets, circularity and energy efficiency in our capital investments and purchasing decisions.

Our global Flexible Working and Travel with Purpose policies encourage reduced travel by employees and help address the relatively small but hard-to-reduce emissions from employee commute and business travel.

## Reporting our risk on climate

We are a supporter of the [Task Force on Climate-related Financial Disclosures \(TCFD\)](#) and have made our first [TCFD disclosure report](#).

“ We have committed to setting a science-based emission reduction target (SBTi) aligned to the 1.5-degree pathway (Paris Agreement).



## Circular design

**Building circularity and regenerative principles into the way we operate in order to reduce waste, emissions and water usage across our value chain.**

We are accelerating our efforts to incorporate circular economy and regenerative design principles into our client solutions and the way we operate, working in partnership with stakeholders across our operations and our supply chain.

### Extending the life of IT assets

With IT equipment and devices making up a significant portion of our carbon footprint and waste production, we are adopting IT asset lifecycle management to extend the life of equipment and help our clients with their zero landfill and circular design targets.

We have partnerships in place with key freight and logistics vendors and manufacturers in our supply chain to take equipment back for recycling, remanufacturing or redeployment, and we offer clients a full range of IT asset and disposal services. These include decommissioning on-premises data centers, advanced data disposal services and, in some regions, urban mining, which involves cable shredding and the bioleaching of circuit boards to extract and reuse rare minerals such as copper, gold and zinc.

These services provide our clients with full transparency on how their IT equipment is managed throughout its lifecycle, with analytics to show carbon savings.

### Designing technology services focused on sustainability

Our [IoT for Sustainability services](#) offer a range of energy, waste and water management capabilities to help our clients manage and conserve resources across their entire business. IoT sensors, edge computing and digital twin solutions provide the data and predictive analytics needed to optimize operational performance in the manufacturing, healthcare, automotive and logistics industries.

### Building resource-smart data centers

Water is a scarce resource globally, so our data centers are built to use it as sparingly as possible. Our new [Johannesburg 1 Data Center](#), for example, uses a dry-air free-cooling system. The water running through the chiller systems isn't evaporated but stays in a closed loop. This enables the data center to achieve a low power usage effectiveness (PUE) ratio and a water usage effectiveness (WUE) ratio – defined as the ratio between the annual water usage of a site in liters and the energy consumption of the IT equipment in the same period in kWh – of close to zero.



Our [Munich 2 Data Center](#) uses **groundwater cooling to take advantage of the site's proximity to the Alps and its powerful and cold groundwater flow**. This technology saves one-third of the electricity that conventional chillers would use for cooling.

The new [Berlin 2 Data Center](#) feeds the waste heat it generates into the district's heating network, thereby supplying the neighboring Marienpark and other consumers in the surrounding area. Thanks to highly efficient cooling technologies, intelligent power management and power-saving components, the Berlin 2 Data Center will also achieve a PUE value of less than 1.3 during regular operation.

## Biodiversity

**Using technology to protect the natural world and regenerate ecosystems and oceans.**

Through technological innovation and partnership, we are working to address the world's biodiversity crisis and protect natural habitats and species.

Together with the [Connected Conservation Foundation](#) and partners Cisco, Airbus and Microsoft, we've introduced essential connectivity, communications, sensing devices and high-resolution satellite imagery and AI to vast landscapes, enabling conservation managers to preempt and stop poaching, habitat loss and human-wildlife conflict.

The partnership has supported the protection of over 30 endangered species, including the endangered white and black rhino, and over 5 million hectares of unique habitats. In the first 18 months of deployment, coupled with effective management, the technology solution reduced rhino poaching by 96% in the pilot site at Sabi Sand Nature Reserve.

In partnership with NTT Comware and Cisco Meraki, we have developed a [smart agriculture solution](#), based on AI and video phenotyping, which can track plant growth and identify plant strains with the highest chances of thriving in difficult conditions.

We partnered with [Red Bull Basement](#) as their Official Technology Services Partner to empower student innovators to kickstart their ideas for using technology to drive positive change. Our wildcard winner in 2020, we have supported [ROBOCEAN](#) to develop an innovative subsea robot that plants and regenerates seagrass as a vital means to tackle climate change.

# Connected Economy



## Smart solutions

**Creating secure digital solutions with our partners to tackle social and environmental issues for clients in multiple sectors.**

We know our greatest opportunity to make a positive impact is through our core business and the work we do with our clients, vendors and partners – helping organizations drive sustainable business performance through the smart solutions and services we deliver.

We are expanding our portfolio of solutions to enable clients to reduce their carbon emissions. Our full-stack [Net Zero Climate Action](#) solution which includes our Private 5G, Edge Compute and IoT solutions, will help clients reduce the environmental impact of their business activities and make data-driven decisions to reduce their carbon footprint. This innovative offering includes monitoring, measuring and reporting on impact, working proactively to limit climate incidents, and improving response times in the detection of issues.

We have worked with Cisco to create an intelligent headquarters building for [ASHRAE](#) that showcases the latest developments in building management technology and helps achieve their vision of a healthy and sustainable environment for all.

Our private 5G networks and IoT solutions are being trialed by [Schneider Electric](#). In addition to superior security and control, the wireless network has a smaller copper cabling footprint that minimizes energy usage to support Schneider's net-zero carbon goals.

We are enabling [Siriraj Hospital in Thailand](#) to deliver lifesaving diagnosis and treatment through their Mobile Stroke Unit in Bangkok, where traffic congestion can cause serious delays. The specially equipped ambulance enables the medical team to scan the patient's brain and send high-resolution images to the doctors at the hospital for rapid diagnosis. Delivered in partnership with Cisco, this telemedicine solution has helped save hundreds of lives

## Privacy and data security

**Ensuring the maximum security and privacy of our solutions to enable the safe running of our services and critical infrastructure.**

We mitigate 2 billion threats and analyze 6.2 billion attacks across 10 Security Operations Centers every year.

With a foundation of the highest standards of cybersecurity, data privacy and data protection, we help sustain connected economies, providing organizations with the [solutions](#) they need to protect their operations and people from hacks, scams and breaches.

In a connected economy, trust is key. Our global Data Privacy and Protection (DPP) program ensures we respect the trust our people, clients, and communities place in us when we process their data.

We are committed to processing personal data in a transparent, fair, ethical, and lawful way.



## Ethics, values and governance

### Acting transparently and responsibly to build connected, trusted economies.

We commit to high standards of ethical behavior in line with our Code of Business Conduct and Ethics and underpinned by our values of integrity, trust and connect.

Our [Business Code of Conduct and Ethics](#) sets out what we expect from and for all employees. Mandatory training on the Code and on the topics of antibribery and corruption is undertaken annually.

Our [Sustainability Policy](#) focuses on improving sustainability performance across the organization. It outlines our approach to integrating effective management of sustainability and climate-related risks and opportunities into everyday decision-making and the execution of our business strategy.

We stand against [modern slavery](#), uphold fundamental human rights and comply with all laws, regulations and codes that apply to our business. Our [Supplier Code of Conduct](#) ensures our supply chain does the same.

### Risk management

The integrated Risk and Sustainability function is led by the Chief Risk and Sustainability Officer who is a member of the [NTT Ltd Group Executive Leadership Team](#).

The Sustainability Executive Committee, chaired by the CEO meets quarterly and oversees execution of the sustainability strategy and plans. The Sustainability Operations Committee, chaired by the Senior Vice President, Sustainability, meets monthly to develop and monitor execution plans and to ensure integration across NTT Ltd. Each region and division meet monthly to execute their plans for their respective areas. Sustainability matters are reported directly to the CEO and CFO through the company's quarterly business review process. External sustainability reports are published on the company website annually.

# Connected Communities



## Digital access

**Enabling accessible and inclusive connections so that everyone benefits from a digital economy.**

### **Making cities more connected and sustainable**

Together with the [City of Las Vegas](#) we use artificial intelligence, machine learning and sensors to enable real-time decision-making to redirect traffic flows and enable faster responses to emergencies. We're now deploying the largest private 5G network in the US. Through improved connectivity, safety, security and access to healthcare and other critical services, it will have a positive impact on the daily lives of residents and visitors as well as businesses, government and educational institutions.

As part of our response to the Ukrainian refugee crisis, we are supporting **Digikids in Poland**. The program gives children access to technology to problem-solve, work in teams and build self-confidence, creating a positive experience for those who have fled their homes while teaching critical skills for their future.

In Brazil, our **NTT Academy and IT for Girls** program aims to tackle both female unemployment rates and IT-industry skills shortages. It has delivered free training in IT-industry certifications and skills to over 3,000 people. NTT specialist volunteers help to host live-streamed classes, with a record 543 people online at one session.

## Education and upskilling

**Facilitating access to education and building skills for the future.**

We directly support schools and skills development in our local communities, providing much needed access to education and helping turn dreams into reality.

Our [Girls School India program](#) has provided access to education and technology for 840 girls since 2017. Our employee volunteers support various developmental initiatives for girls at the Shri Dayanand Balika Vidyalaya School and Junior College in Mumbai. These include book drives, midday meals, a computer lab, a science lab, visits to our offices and meeting women leaders within NTT. Our collaboration with the Akshaya Patra Foundation is helping to bridge the digital divide by funding the building of a new school in Bangalore and providing tablets to students.

Find out more about **why a connected city is a sustainable city.**

Find out more

For more than 27 years, our **Saturday School South Africa** program, which has a focus on science, technology, mathematics and engineering (STEM) subjects, has helped thousands of high-school learners from underserved communities to improve their school attendance and grades. The average pass rate has consistently been more than 90%, and our some of the learners have the opportunity to study at university through a Dimension Data bursary, while the rest receive bursaries from partner organizations. These graduates go on to a range of professional careers and several have participated in our Graduate Program and now work for NTT. The program is recognized by the Gauteng Department of Education as one of the top three education interventions in the province.

Recognizing the challenges of the day and skills required for the future, since 2017 the curriculum has been expanded to include coding, leadership development and entrepreneurship.

In South Africa, we also run **development programs for our local suppliers**, focused on black-owned and black-female-owned small, micro and medium enterprises. The 10-month incubator program for enterprise development provides training on entrepreneurship and small business management as well as certified technical training in specific ICT solutions. The program has supported around 600 ICT businesses since its inception in 2009.

We have also run a **supplier development incubator** for selected small, medium and micro enterprise (SMME) suppliers in business for over three years. This offers business support, vendor-accredited training for staff and sales strategies for accessing new markets. As a result, we have seen several SMME partners grow from being small businesses to large enterprises with a national footprint and be part of our supply chain, with some even expanding across Africa.

## Contributing 1 million hours of employee volunteering

We empower our employees to use their three days of annual volunteering leave and their time, energy and professional skills to make a difference. Whether it's through fundraising, developing a new solution or helping their local community in times of need, we encourage our people to support causes they care about.

In the first half year of 2022, 6% of our employees participated in the three-day volunteering leave program and contributed over 8,600 hours of volunteering time. Some of their activities include:

- Over 1,100 of our people got together to support 41 NTT World Cleanup Day events in 19 countries. Removing more than 750 bags and 2,886 kg of trash and waste to improve the local environment.
- Donating, preparing and delivering nearly 1,000 soup parcels across South Africa in our Bags of Hope initiative on Mandela Day.
- Providing access to ventilators, oxygen, ambulances and vaccinations for colleagues and family members as part of our rapid COVID-19 response in India, including over 4,500 vaccination doses, and 100 available O2 concentrators at eight different office locations.

Our employees also responded practically and financially to provide relief for those impacted by the war in Ukraine. Their efforts have included collecting and transporting supplies, donating laptops, supporting workshops for refugee children, raising funds, staffing donation lines, converting warehouse space into accommodation units, and offering CV and recruitment support to refugees. As a whole, NTT Group donated USD 2.5 million to support humanitarian aid for Ukraine.

Through the United Nations High Commissioner for Refugees (UNHCR), the United Nations Children's Fund (UNICEF) and other organizations, this donation provided urgent support to protect the lives and safety of citizens in Ukraine and neighboring countries, including the establishment of evacuation centers, distribution of relief goods, and psychological care for children.

“ Hear more about how our employees are making a difference from our [NTT Sustainability Changemaker](#) Chitrlekha Kalmady



## Diversity and inclusion

### Building a more diverse and inclusive workforce and world through targeted efforts that have real impact.

We are working to build a diverse workforce and provide everyone with equal opportunities to thrive in their careers. We have implemented global policies to support new parents and transgender and gender-variant colleagues, and have employee resource groups such as the Pride Alliance and Accessibility Alliance. We have a sponsorship program for women leaders and an initiative to hire women who placed their career on hold. Our implicit bias training starts with our most senior leaders, and we are piloting blind-CV screening to minimize bias in hiring.

We set a target to double the diversity of our Group executive leadership team by 2025, with an emphasis on increasing the representation women from our 2021 baseline, where we had three women on the executive leadership team. We are closer to achieving our target, with five women now on the executive leadership team.

We are also working toward the target of having more than 50% of our employees belong to one or more of the diversity categories: gender, race, sexual orientation, socioeconomic background, and disability by 2025.

As the technology partner for the [Tour de France Femme avec Zwift](#), we are helping to raise the profile of women in cycling and women's involvement in sport.

With our charity partner, [Qhubeka](#), we are also using the power of the bicycle to connect communities and change lives. Through Qhubeka's Learn-to-Earn programs, children earn bicycles in various ways, making it easier for them to get to school and improve attendance and performance.

Visit the [Diversity. Equity. Inclusion.](#) webpage

Visit the webpage

“ In 2022, with the support of NTT, we’ve rebuilt our bicycle supply and community work. We need the most robust Qhubeka bicycle possible to serve the daily commuting needs of rural people who travel long distances over rugged terrain with heavy cargo. We’ve been able to improve the design, how it’s being built, and continue with the assembly of these bicycles by previously unemployed individuals in rural areas of the North West province in South Africa.

Over the year we’ll distribute 2,450 bicycles, mostly to schoolchildren in the North West and Western Cape provinces of South Africa. Millions of people spend time and energy walking long distances to where they need to be. The impact of receiving a bicycle is immediate and lives change the same day.

Children get to school quicker and easier, healthcare workers can visit more patients, adults go to work and can open micro businesses to earn an income. As a result, fewer children drop out of school and more pass their exams. Bicycles make children happy, which makes happy families and, so, happy villages.

**Anthony Fitzhenry**, Founder: Qhubeka

## Partnering for a more sustainable world

We are committed to public transparency and accountability.

We're proud to be in the top 25% of all companies assessed globally by EcoVadis and a leader in carbon management and environmental criteria.

We support the United Nations Sustainable Development Goals and have signed the UN Global Compact. We are in the process of having our targets validated by the Science-Based Targets initiative (SBTi) aligned to the 1.5-degree pathway (Paris Agreement).



