
People &
Planet 2023
NOKIA

Contents

About this report

The People and Planet report is Nokia's sustainability report and is published annually. The scope of the 2023 sustainability report covers Nokia Group. In our reporting, we are committed to expanding our transparency and our coverage. Our report is prepared in accordance with the GRI Standards. As part of our reporting, we also recognize other sustainability-reporting frameworks, such as SASB Standards and the UN Global Compact. Our selected key sustainability indicators have been assured by Nokia's independent auditor, Deloitte Oy.

This report was published in March 2024 and is only available in digital format. The report can be found online. We have published annual corporate responsibility reports since 1999 and the reports are available in digital format from 2003 to the present in our online report archive.

Nokia's sustainability strategy, selected initiatives and ESG risks and opportunities are also discussed in our corporate annual reports, including the annual report on Form 20-F that is filed with the US Securities and Exchange Commission. The Board review of Nokia's 2023 annual accounts by Nokia's Board of Directors includes non-financial information as required by the Finnish Accounting Act implementing the EU Non-Financial Reporting Directive and disclosures required in accordance with the EU Taxonomy Regulation.

Financial and operational information in this report should be read in conjunction with the information provided in our interim reports and annual financial reports, as well as the risk factors and forward-looking statements included in such reports. For more information on our financial results, operations and reporting structure, please see here.

Letter from the President and CEO

Developing ESG into a competitive advantage

This year Nokia formalized the vital role ESG plays in our business by including it as one of the six pillars of our refreshed strategy.

This is an unequivocal statement about the importance we attach to sustainability. We believe there is space in our industry for us to become the trusted and responsible provider of choice – and by doing so we believe we will create value for us, our investors, our communities and our planet.

We launched our ESG Strategy in 2022. It is based around five topics where we believe Nokia can have an outsized impact. I am pleased to say that Nokia has made progress on each of them. Here are some highlights from 2023.

Environment: We want to be the leader in energy efficiency and circular practices.

- We set a new target to reach net-zero greenhouse gas (GHG) emissions across our value chain[1] – including manufacturers making our products and customers using them – by 2040.
- We aim to accelerate our existing target to reduce GHG emissions across our own operations[2]. Previously we targeted a 50% reduction by 2030 – now we target a 83% reduction in the same timescale.
- We ensured 75% of our purchased electricity came from renewable sources.
- We delivered some of the most energy-efficient hardware in our history. Our Habrok massive MIMO radios use 30% less energy than previous models, and Nokia's AirScale 5G base station average power consumption has been reduced by 50% compared to 2019.
- Our sixth-generation photonic service engine, PSE-6s, uses the latest silicon integrated circuits to increase network scale and performance, while reducing total network power consumption by up to 60% in some settings.

Industrial digitalization: We want our solutions to make physical industries safer, more productive, more efficient and more sustainable.

- Nokia cemented its position as the leader in the private wireless market. We now have over 710 customers globally, helping industrials accelerate

their digital transformation. This compares to 560 at the end of 2022.
- Nokia partnered with IT company Kyndryl to enable Dow Chemical Company to digitalize the largest integrated chemical manufacturing facility in the western hemisphere in Freeport, Texas, removing paper from the manufacturing and maintenance processes.
- Nokia Bell Labs and Aramco announced an R&D collaboration that is expected to develop advanced Industry 4.0/4IR digital use cases and validate proof of concept solutions for sectors including, but not limited to, energy.

Security and privacy: We want security and privacy to be the cornerstones of our product proposition.
- We have set up Service Security as a separate domain to cover the full-service lifecycle with a properly defined Service Security framework, and we remain focused on the continuous certification of services teams in the ISO 27001 standard.

Bridging the digital divide: We want our solutions to improve access to healthcare, education and employment.
- We were the first telecommunications equipment vendor to announce fiber-optic broadband network electronic products and optical modules in the US for use in the Broadband Equity, Access and Deployment (BEAD) program, which dedicates more than $42 billion to expanding broadband access across the US.
- Over 130 000 people benefited from our social digitalization projects in 2023, which include initiatives to build digital skills, connect the unconnected and improve inclusion, equity and diversity. That means almost 700 000 people have benefited over the course of these projects.

Responsible business: We want to be a trusted, ethical company.
- We announced our Sustainable Finance Framework. This framework reinforces Nokia's commitment to sustainable growth by ensuring our financing strategy supports the company's ESG strategy.
- We completed 141 supplier audits in 2023, compared to 63 completed in 2022.
- We were included in Sustainalytics' 2024 ESG Top-Rated Companies list, and MSCI ESG Ratings gave us an AAA rating (on a scale of AAA–CCC). Both ratings provide information for investors assessing financially material ESG issues that affect the long-term performance of their investments.
- We were again recognized as a supplier engagement leader by CDP's Supplier Engagement Rating program.

I would like to thank everyone at Nokia for contributing to the progress we made on our ESG strategy. There is plenty to be proud of in this report – and the bullets above are just the beginning. Please read on to discover more about how Nokia is working in the interests of people and planet.

Pekka Lundmark, President and CEO

> We believe there is space in our industry for us to become the trusted and responsible provider of choice – and by doing so we believe we will create value for us, our investors, our communities and our planet.

[1] Scopes 1, 2 and 3
[2] This includes decarbonization of Nokia's car fleet and its facilities..

Nokia today

At Nokia, we create technology that helps the world act together.

Enhanced connectivity and digitalization can contribute to solving many of the planetary, people and business issues the world faces today. Through technology leadership, innovation and trusted partnerships we deliver critical networks that can support environmental, social and economic welfare.

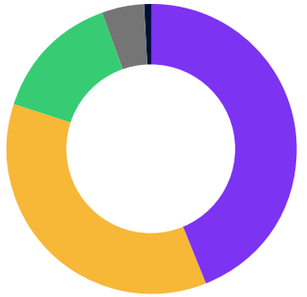
With our customers we deliver solutions that help the world respond to climate change through the more efficient use and reuse of the world's resources, restore productivity growth by bringing digital to the physical industries it has not yet reached, and provide more inclusive access to opportunity – work, healthcare, education and markets.

In 2023, we delivered net sales of EUR 22 258 million and invested EUR 4 327 million in research and development. We have four core business groups: Cloud and Network Services, Mobile Networks, Network Infrastructure and Nokia Technologies. For more information see our financial reporting here.

We have customers in most countries of the world. Digitalization and enhanced connectivity transform the way people communicate, work and live their daily lives. Our technology enables industries and cities to digitalize and automate, driving efficiency and productivity gains while enabling potential reductions in emissions and use of resources. It supports improved worker safety and more secure, inclusive and safer communities.

At the end of 2023, we employed 84 549 people. More than 3% of employees were based at our headquarters in Espoo, Finland, and around 42% of our employees worked within our research and development in Europe, North America and Asia.

Net sales by business 2023, EURm



Mobile Networks	9 797
Network Infrastructure	8 037
Cloud and Network Services	3 220
Nokia Technologies	1 085
Group Common and Other	130
Total[1]	**22 258**

The figures are derived from our consolidated financial statements prepared in accordance with IFRS. Year-on-year change is in parenthesis.
[1] Net sales include businesses and exclude "Eliminations and unallocated items".

Net sales by region 2023, EURm

Asia-Pacific	2 291
Europe[2]	5 873
Greater China	1 303
India	2 842
Latin America	1 046
Middle East & Africa	2 050
North America	5 733
Submarine Networks	1 120
Total	**22 258**

[2] All Nokia Technologies IPR and Licensing net sales are allocated to Finland.

Our approach

Our approach to sustainability is built on our company's purpose – to create technology that helps the world act together. In 2023, we took another step in bringing our sustainability strategy and initiatives closer to our corporate strategy by announcing the ambition to develop Nokia's environmental, social and governance (ESG) initiatives into a competitive advantage. By making ESG the sixth pillar of our refreshed corporate strategy, we aim to accelerate our efforts in making it a competitive advantage for Nokia and therefore create long-term value for our customers and partners.

Sustainability is integral to our 2030 technology vision and strategy, as well as the product and operational strategies of our business groups.

All of these are underpinned by our unwavering focus on adhering to high standards of integrity and security that build trust and help create the capabilities needed for a more productive, responsible, sustainable and inclusive world.

Sustainability highlights and challenges in 2023

What we did well...

- We announced our new commitment to reaching net zero greenhouse gas emissions across the value chain[1] by 2040.
- We also aim to accelerate our existing interim target to reduce emissions across our own operations[2], to reach an 83% reduction by 2030.
- We submitted our net zero 2040 letter of commitment to the Science Based Targets initiative (SBTi).
- We announced our Sustainable Finance Framework. This framework reinforces Nokia's commitment to sustainable growth by ensuring our financing strategy supports the company's ESG strategy.
- We achieved our 2023 renewable energy target with 75% of our purchased electricity across our facilities globally coming from renewable sources.
- Our logistics emissions saw a 54% decrease compared to 2019. We continue to work with innovative solutions such as sustainable aviation fuel (SAF) and collaborate with our customers and partners.
- In Mobile Networks, we delivered the first Habrok massive MIMO radios, and in 2023, Nokia's AirScale 5G massive MIMO BTS power consumption has been reduced by 50% compared to 2019. This is enabled by continuous improvements in software functionalities, and new 5G products based on latest-generation Nokia ReefShark System-on-Chip (SoC) technology.
- Nokia developed an innovative, turnkey Rural Connect solution. Service providers can use Rural Connect to bring mobile connectivity to remote areas with a cost-optimized radio site solution with high energy efficiency.
- We announced the availability of US based fiber-optic broadband network electronic products and optical modules for use in the Broadband Equity, Access and Deployment (BEAD) program.
- We completed 141 CR supplier audits in 2023 compared to 63 in 2022.
- We again achieved a ranking of A- from the CDP for our work on climate change and were recognized as a supplier engagement leader by the CDP's Supplier Engagement Rating program.
- During 2022 and 2023 we reached 691 534 total reported direct beneficiaries, including 130 832 added in 2023 through social digitalization projects, building digital skills, connecting the unconnected or underserved, and improving inclusion, equity and diversity.
- We were included in Sustainalytics' 2024 ESG Top-Rated Companies list, and MSCI ESG Ratings gave us an AAA "Leader" rating (on a scale of AAA–CCC). Both ratings provide information for investors assessing financially material ESG issues that affect the long-term performance of their investments.

What we need to do better...

- Emissions covered by our science-based target (SBT) were 34 319 800 tons CO_2e, which is a 9% decrease from 2022. Despite this decrease, our current SBT emissions are now at the same level as the 2019 baseline year. This means that the 2030 SBT was not on track with a linear reduction trajectory. While we continue to accelerate innovations in product energy efficiency and supplier collaboration, the availability and take-up of renewable energy by Nokia's customers must rapidly increase to support the achievement of the interim target.
- We recorded no (zero) work-related fatal incidents involving employees. However, we regret the three work-related fatal incidents resulting in the death of one contractor/subcontractor and two third-parties. This is not acceptable. We are taking steps to drive greater emphasis on life-saving rules and supplier capability

[1] Scope 1, 2, 3.
[2] This includes decarbonization of Nokia's car fleet and its facilities.

External ratings

We take part in ESG-focused ratings, indices and benchmarks which are often used by stakeholders such as customers, investors and civil society to assess a company's performance across a broad range of sustainability-related topics.

ESG rankings and ratings	Score (range: top/bottom)	Latest result
Euronext Vigeo Europe (Moody's)	61/100 - advanced	2022 Feb
Bloomberg Gender-Equality Index 2023	83.03% (industry average: 72.36%)	2023 Jan
Clean200	82nd out of 200	2023 Feb
World Benchmarking Alliance	24th out of 200	2023 Mar
PLATINUM Top 1% 2023 ecovadis Sustainability Rating	top 1% - Platinum	2023 Mar
FTSE4Good	ESG Score 4.7/5.0	2023 Jun
MSCI ESG RATINGS AAA CCC B BB BBB A AA AAA	AAA (AAA/CCC)	2023 Aug

ESG rankings and ratings	Score (range: top/bottom)	Latest result
Corporate ESG Performance Prime RATED BY ISS ESG	Prime, B- (A+/D-)	2023 Oct
Global LGBTQ+ Inclusive Workplace Workplace Pride 2023 Ambassador	Ambassador status	2023 Oct
SUSTAINALYTICS a Morningstar company	11.2 (low risk of experiencing material financial impacts from ESG factors.). Jan 2024: Sustainalytics' 2024 Top-Rated ESG Companies List.	2024 Jan
CDP DISCLOSURE INSIGHT ACTION CDP DISCLOSER 2023	A- (A/D-)	2024 Feb
2024 WORLD'S MOST ETHICAL COMPANIES® ETHISPHERE	Recognized as one of the 2024 World's Most Ethical Companies ®	2024 Mar

Our company purpose

At Nokia, we create technology that helps the world act together. Our purpose provides a foundation for our future and defines how we see our role in the world.

Through our technology we help realize the full potential of digital in every industry for a more productive, sustainable and accessible world.

We take part in a number of ESG-focused ratings, indices and benchmarks. While all such initiatives have a slightly different focus, generally they are used by various stakeholders such as customers, investors and civil society to assess companies' performance in a broad range of sustainability- or ESG-related topics.

A full list of ratings and other recognitions can be found on our website.

Our sustainability strategy

Nokia's sustainability strategy aims to ensure we maximize our impact in the ESG areas most important to our company. It is implemented through our business groups and relevant central functions and consists of five focus areas: Environment (climate and circularity), Industrial digitalization, Security and privacy, Bridging the digital divide, and Responsible business.

In the **Environment,** we emphasize two areas: climate and circularity. We focus on energy efficiency in our products and value chain and circular practices through product and materials reuse and refurbishment.

Industrial digitalization provides the opportunity to sustainably transform physical industries and cities through digitalization and connectivity. Our offering for industry and cities can support decarbonization, resource efficiency and improved safety.

Security and privacy are together positioned as the cornerstone of our product proposition. Product development follows the "Design for Security" methodology, and Nokia's security team partners with our customers to build and maintain secure networks, compliant with national regulations for critica telecom infrastructure.

In **Bridging the digital divide**, we use our broad product portfolio across terrestrial and non-terrestrial communication networks to connect the unconnected and underserved and invest in partnerships to support digital skills building.

In **Responsible business** we work to ensure our business practices are aligned to our ethical and responsible values. We collaborate closely with customers and suppliers to engage on systemic issues related to the environment, mitigating the misuse of technology (and advocating for responsible AI principles), ethics, human rights, and working conditions. We strive to create value, exceed stakeholder requirements and expectations while complying with increasing regulatory requirements. Our approach to Responsible Business is covered in: Our people, Sustainable supply chain, Human rights, and Ethics and compliance.Our current sustainability strategy focuses on where we believe we can have the greatest impact on ESG risks and opportunities.

From impact to double materiality

In 2023, our sustainability approach was based on our existing impact materiality matrix, which was created in 2022 and can be found online. In Q4 2023, we completed our double materiality assessment as part of the preparation for the EU Corporate Sustainability Reporting Directive (CSRD) requirements and related standards.

Our handprint and footprint

We believe the technology we provide enables environmental and social benefits to individuals, industries, communities and econimies that can outweigh potential negative impacts. These benefits are the “handprint” of digitalization and connectivity. We have both a social and environmental handprint. We maximize this handprint.

We must, however, continually strive to minimize any potential negative impacts of technology. This is our “footprint.” We have both an environmental and a social footprint. We collaborate throughout our value chain to continually minimize our footprint. More information on our approach to our handprint and footprint can be found online.

These two aspects of our approach are underpinned by responsible and ethical business practices. We strive to be a trusted, responsible company that our employees, customers, suppliers, partners, governments and investors are proud to work for and with.

As part of our responsible approach, we aim for:

- Robust practices, procedures and policies that minimize risk
- Management accountability for sustainability and responsibility throughout the organization
- Trust, accountability, and ethical behavior as foundations on which we operate
- ISO-certified and -audited management systems
- A robust people strategy and mature processes to attract, retain and develop talent.

Enabling and engaging our organization and value chain

In 2023, we continued sustainability enablement across our global organization through the ESG Community of Interest, a collaborative innovation platform for knowledge building particularly targeting employees working directly with customers. During 2023, the community organized sessions on energy efficiency, bridging the digital divide, reporting, sustainable sourcing, circularity and ESG standards.

Our ESG approach

Maximizing our positive impact - our handprint

- Decarbonizing other industries and society
- Enabling the transition of the energy sector
- Providing the critical networks for life
- Connecting the unconnected through building digital skills

Minimizing any negative impact - our footprint

- Continually improving product energy efficiency
- Driving circularity to reduce waste
- De-risking the potential misuse of technology
- Building sustainable operations and supply chains

Our ESG targets and performance

We set short-, medium- and long-term sustainability targets. The status of these targets at the end of 2023 is shown on the following pages. In 2023, we had 30 external sustainability targets, of which 27 were either achieved or on track. Two targets were not achieved, one target was not on track and one target was replaced. In 2023, we looked at how to accelerate our net zero ambition and the related pathway and levers. In December 2023, the Nokia Group Leadership team approved the plan to fast-forward both our net zero target (Scope 1, 2 and 3) and our interim 2030 scope 1 and 2 targets. More details can be found in the "Environment" section. Our targets for 2024 and beyond are also presented after the 2023 target achievements.

Progress of ESG targets in 2023

Focus area	Target year	Base year	Target	2023 results	Target status
Environment					
	2030	**2019**	Our science-based target (SBT)[1]: Reduce our greenhouse gas (GHG) emissions across our value chain (Scope 1, 2 and 3) by 50% between 2019 and 2030, and reach net zero by 2050.	Emissions covered by our SBT were 34 319 800 tons CO_2e[2], which is a 9% decrease from 2022. Despite this decrease, our current SBT emissions are now at the same level as the 2019 baseline year. This means that the 2030 SBT is still not on track with a linear reduction trajectory. While we continue to accelerate innovations in product energy efficiency and supplier collaboration, the availability and take-up of renewable energy by Nokia's customers must rapidly increase to support the achievement of the interim target.	Not on track
	2030	**2019**	Our final assembly suppliers reach zero emissions by 2030.	Our final assembly suppliers' emissions were 38 500 tons CO_2e which is a 49% reduction from 2019.	On track
	2030	**2019**	Our suppliers[3] reduce GHG emissions by 50% by 2030.	Our suppliers' GHG emissions were 540 500 tons CO_2e which is a 82% reduction from 2019. However, as this includes emissions data from hundreds of suppliers and the quality of allocated emissions data has been of concern, we are conscious that some of the reductions may be due to the quality of the data reported.	On track
	2030	**2019**	Our logistics' GHG emissions reduced by 73% by 2030.	Our logistics' GHG emissions were 140 900 tons CO_2e which is a 54% decrease from 2019.	On track
	2025	**2019**	GHG emission reduction of 65% from scope 1 and 2 market-based emissions, including 85% reduction of our facilities' GHG emissions compared to 2019.	GHG reduction of 56% from scope 1 and 2 (facilities, car fleet, marine fleet), including 69% reduction of our facilities' GHG emissions compared to 2019.	On track

Focus area	Target year	Base year	Target	2023 results	Target status
Climate	**2025**	**N/A**	Use 100% renewable electricity in our own facilities.	75% of electricity was renewable in our own facilities.	On track
	2023	**2019**	Reach 65% reduction of our facilities' GHG emissions compared to 2019.	Reached 69% reduction of our facilities' GHG emissions.	Achieved
	2023	**N/A**	Reach 75% renewable electricity in our own facilities.	Reached 75% renewable electricity in our own facilities.	Achieved
	2023	**2019**	50% reduction of average power consumption of 5G mMIMO Base Station by 2023 from 2019 baseline.	In Mobile Networks, we delivered the first Habrok massive MIMO radios and in 2023, Nokia's AirScale 5G massive MIMO BTS power consumption has been reduced by 50% compared to 2019. This is enabled by continuous improvements in software functionalities, and new 5G products based on latest generation Nokia ReefShark SoCs.	Achieved
Circularity	**2030**	**2019**	95% circularity rate for waste from our offices, labs, manufacturing, installation and product takeback by 2030.	We have recognized areas where high circularity rate has already been achieved and also areas requiring further action. There are still data gaps to be closed but data accuracy has increased. Annual waste circularity outcome for 2023 was 86%.	On track
	2030	**N/A**	Increase recycled content in mechanical part source materials: • Cast aluminum used in mechanical parts: to 90%. • Wrought aluminum, steel and copper alloys, as well as polycarbonate plastics used in mechanical parts: to 50%.	We continued awareness raising and data collection on recycled materials. In 2023, we reached data collection levels of 43% cast aluminum, 10% wrought aluminum, 7% low alloy steel, 13% stainless steel and 3% on copper alloys.	On track
Bridging the digital divide					
Connecting the unconnected and under-served	**2030**	**2021**	Helping our customers to connect the next 2 billion measured by number of subscriptions in Nokia radio customers' networks by 2030.	In line with Nokia's long term goal, we work with our customers to provide broadband based digital services on more subscriptions. The number of mobile broadband subscriptions in Nokia radio customers' networks has increased from 2022 to end of 2023 by 372 million (2021–2023: 772 million)[4].	On track
	2025	**2021**	Harness Nokia technology, capabilities and funds to improve the lives of 1 500 000 through social digitalization projects, digital skills building, and connecting the unconnected or underserved by 2025[5].	We reached 130 832 reported direct beneficiaries[6] through social digitalization projects, building digital skills, connecting the unconnected or underserved, and improving inclusion, equity and diversity. The current total reported direct beneficiaries for 2022 and 2023 is 691 534.	On track
	2023	**N/A**	Nokia's fixed and broadband technologies connecting 400 million additional residential subscribers covering unconnected and underserved.	2023 target did not have the baseline year; therefore, the target was replaced with a more quantifiable and measurable, medium-term target: Nokia's Fiber-to-the-Home technology will connect 140 million new subscribers by 2030, helping break down the digital divide. The target's result for 2023: The target is on track. In 2023, we estimate we connected 18 million new subscribers.	Replaced

Focus area	Target year	Base year	Target	2023 results	Target status
Security and privacy					
	2023	**N/A**	95% mandatory training completion related to privacy.	In 2023, the mandatory training completion rate was 98%.	Achieved
Industrial digitalization					
	2025	**N/A**	Industry verticals adopting private wireless customers (number of customers, in line with business plan).	Private Wireless adoption is continuing to pick up and accelerate and Nokia added 150+ numbers of new customers during 2023.	On track
Responsible business					
Health & Safety	**2030**	**2016**	100% of suppliers delivering high risk activity to meet “H&S preferred supplier” status (score 4 or more out of 5) in our Health & Safety maturity assessment.	18% of relevant suppliers met H&S "Preferred" supplier status. To reach the 2030 target, Nokia continues to work with our supplier base, engaging and promoting the supplier safety competences, offering safety training and setting supplier workshops in order to improve supplier Health and Safety awareness and capability.	On track
	2025	**N/A**	TRIFR and LTIFR as industry benchmark.	2024 will be the stabelization of the IFR to enable to be presented to other Industry stakeholders as benchmark.	On track
	2024	**N/A**	95% of projects compliant with the strengthened requirements of our High-Risk Project Implementation Assessments (HRPIA) process.	98% of High-risk projects were found to meet our minimum non-negotiable requirements.	On track
	2024	**N/A**	Reduction in Total Recordable Incident Frequency Rate (TRIFR) and Lost Time Incident Frequency Rate (LTIFR) for Nokia employees.	In 2023, Nokia measured 2 (two) employee safety related Incident Frequency Rates. LTIFR showed a reduction and the TRIFR showed a minimal increase. Nokia Employee LTIFR in 2023 end as 0.089 (2022 result was 0.116) Nokia Employee TRIFR in 2023 end as 0.277 (2022 result was 0.227)	On track
	2023	**N/A**	100% of suppliers performing high risk activities pledge their commitment to Nokia’s life-saving rules.	100% of suppliers delivering high risk activities pledged their commitment to Nokia’s life-saving rules.	Achieved
	2023	**N/A**	Zero critical or fatal incidents for employees and suppliers.	In 2023, there were 0 (zero) work-related fatal incidents involving employees and 3 (three) work-related fatal incidents resulting in the death of 1 (one) contractor/ subcontractor and 2 (two) third-parties.[7]	Not achieved
	2023	**N/A**	Cohort of 40 senior leaders conduct safety tours to sites to increase monitoring visibility.	There were 144 safety tours executed and reported with senior leaders in 2023.	Achieved

Focus area	Target year	Base year	Target	2023 results	Target status
Inclusion & Diversity	**2030**	**2021**	Increase the share of women to a minimum of 25% of total employees by end 2030.	The ratio of women is gradually increasing over time. It was 22% at the beginning of 2021 and now its 23% at the end 2023.	On track
	2023	**N/A**	Reach a minimum of 27% female hires in global external recruits.	28% of external recruits were women. We achieved the 2023 target via increased marketing, communication and talent attraction activities to make Nokia's employer brand stand out for diversity-friendly employment policies and attract diverse talent.	Achieved
Ethics & Compliance	**2030**	**2016**	Maintain 85% favorability of employee/line manager engagement on ethics and compliance.	In 2023, 85% of employees said that their Line Manager talked to the team about the importance of ethics and compliance.	Achieved
	2023	**N/A**	Ethical Business Training (EBT) completed by 95% of employees.	98% of employees completed the Ethical Business Training.	Achieved
Responsible sourcing	**2025**	**N/A**	98% 3TG traceability and conflict free status to smelter level in our supply chain as well as conflict free status of the smelters. Extended due diligence and conflict free status of cobalt, mica and 2 additional minerals.	As of 2023, we have achieved 81% traceability to the smelter level in our supply chain as well as conflict-free status of the smelters. We have also extended and conducted due diligence for cobalt and mica and mapped the supply chains for additional minerals. For those, due-diligence will follow in the next years.	On track
	2025	**2020**	80% of suppliers achieve satisfactory sustainability score (based on aggregated weighted share) from supplier performance evaluation (based on CR onsite audit programs, EcoVadis, CDP, Conflict minerals).	80% of suppliers, on average, received a satisfactory sustainability score in our assessment programs.	On track
	2023	**N/A**	98% tin, tantalum, tungsten and gold traceability and conflict-free status achieved and extended due diligence implemented for cobalt and mica.	As of 2023, we have achieved 81% traceability to the smelter level in our supply chain as well as conflict-free status of the smelters. We have also extended and conducted due diligence for cobalt and mica.	Not achieved

Notes

[1] The current SBT covers the following activities: Scope 1: emissions from our facilities, car fleet and marine fleet, own vessels. Scope 2: market-based emissions from purchased energy. Scope 3: emissions from the customer use of sold products (covering almost 100% of our current portfolio) and emissions from logistics, final assembly factories in our supply chain, and marine fleet chartered vessels.
[2] CO^2e = carbon dioxide equivalents.
[3] Refers to our material suppliers.
[4] Reference source: GSMA Intelligence.
[5] Improving lives refers to increased digital connectivity and inclusion for 1 500 000 people.
[6] Individuals that independent from any relationship with the company were directly benefited by Nokia's contributions or activities related to digital connectivity and inclusion directly resulting from them.
[7] Nokia has revised its fatality-reporting criteria in 2023 to include third-parties such as members of the public who are assessed as being impacted by an incident that is deemed within Nokia's control. This more closely aligns Nokia's reporting with some of its closest industry stakeholders and competitors.

Our ESG targets in 2024

2024

Environmental

85% renewable electricity in our own facilities

75% reduction of our facilities' GHG emissions

Social

A minimum of **28%** female hires in global external recruits

96% of projects to be compliant with HRPIA standards

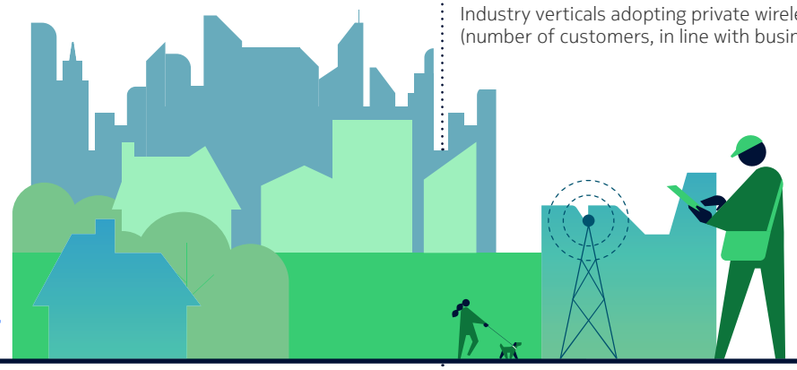
Zero critical or fatal incidents for employees, suppliers and third-parties

Reduction in Total Recordable Incident Frequency Rate (TRIFR) and Lost Time Incident Frequency Rate (LTIFR) for Nokia employees

Cohort of **60** senior leaders[1] conduct safety tours to sites to increase monitoring visibility

Governance

Ethical Business Training (EBT) completed by **95%** of employees



2025

Environmental

100% renewable electricity in our own facilities

65% reduction of scope 1 and 2 GHG emissions, including 85% reduction of our facilities' GHG emissions

Industry verticals adopting private wireless customers (number of customers, in line with business plan)

Social

Harness Nokia technology, capabilities and funds to improve the lives of **1 500 000** through social digitalization projects, digital skills building, and connecting the unconnected or underserved

TRIFR and LTIFR as industry benchmark

Governance

98% 3TG traceability and conflict free status to smelter level in our supply chain as well as conflict free status of the smelters. Extended due diligence and conflict-free status of cobalt, mica and 2 additional minerals

80% of suppliers receive a satisfactory sustainability score from supplier performance evaluation

2030

Environmental

50% reduction of our total GHG emissions (Scope 1, 2 and 3)

Final assembly suppliers reach zero emissions

50% reduction of suppliers' GHG emissions

73% reduction of logistics' GHG emissions

95% circularity rate for waste from our offices, labs, manufacturing, installation and product takeback

Increase recycled content in mechanical part source materials:
- Cast aluminum used in mechanical parts: to **90%**
- Wrought aluminum, steel and copper alloys, as well as polycarbonate plastics used in mechanical parts: to **50%**

Social

Provide broadband based digital services with **2 billion** more subscriptions

Nokia's Fiber-to-the-Home technology will connect **140 million** new subscribers by 2030, helping break down the digital divide

100% of suppliers delivering high risk activity to meet or exceed "H&S preferred supplier" status

Increase the share of women to a minimum of **25%** of total employees

Governance

Maintain at least **85%** favorability of employee/line manager engagement on the importance of ethics and compliance

2040

Environmental

Commitment to SBT to reach **net zero** emissions across value chain

[1] For this 2024 KPI the definition of senior leaders was further specified to include only executives and leaders from the top 4 levels of Nokia management structure

Engaging with our stakeholders

We work with a range of stakeholders and look for where we can increase collaboration and respond to requirements in building sustainable solutions. Collaboration is key to moving the needle on many sustainability topics – from protecting the environment to bridging the digital divide and improving security.

Supporting our customers' sustainability goals

We work with our customers, both communication service providers and enterprises, on sustainability topics ranging from energy and materials efficiency to supply chain transparency, human rights and community involvement. We emphasized this collaboration in 2023 by establishing two more ESG Customer Advisory Councils covering the Asia and India region and the Middle East and Africa region, complementing the existing council for Europe. The following table summarizes how we engage with key stakeholders.

We also engage with the broader ecosystem, for example on climate issues. In December 2023, at COP28 in Dubai, at the launch event commemorating the inauguration of the Finland Pavilion, we presented on the importance of digital solutions for accelerating the response to climate change and their role in supporting hard-to-abate industries. To further underline the critical role of digital solutions in decarbonization, Nokia brought together representatives of the ICT sector together with the International Telecommunication Union (ITU) to outline commitments to decarbonizing digital and accelerating the green transition.

Nokia as a partner for governments for trusted digitalization

Nokia is proud to be a partner for governments for trusted digitalization, and we continue to participate in discussions on global connectivity.

We are active in the European Global Gateway initiative, aimed at developing sustainable infrastructure in the Global South. Global Gateway de-risks investments for projects that deliver social, economic and environmental value. We advocate for meaningful support for the Global South to conduct sustainable and inclusive digitalization.

Nokia promotes transregional cooperation on technology, and our leadership actively support the EU–US Trade and Technology Council, the EU–India Trade and Technology Council and collaboration between the EU and Latin America.

Acting together

Nokia engages in several multilateral processes in support of sustainable development at the global, regional and national levels.

In May 2023, Pekka Lundmark co-chaired the year's B20 Digital Transformation Task Force, which produced a set of recommendations aimed at bridging the digital divide and accelerating universal, future-proof and transformational connectivity across all regions and communities to deliver inclusive growth. As a UN Broadband Commissioner, Pekka Lundmark engages in public–private discourse on digital inclusion. We also remain a committed partner of the ITU Partner2Connect Digital Coalition, which focuses on hardest-to-connect communities.

Supporting informed public policies for digitalization and sustainable development

At Nokia, we collaborate with governments, regulators, international organizations, trade associations, industry peers and academia to inform effective policy making and support the development of the best policy framework for sustainable and inclusive digitalization.

Nokia engages with policymakers and regulators transparently and constructively. We offer our expertise on trusted and reliable international connectivity, on the security of digital infrastructures, on a regulatory regime that facilitates network rollout and other digital policy endeavors, on best policy frameworks unlocking innovation, on improving the resilience of economies and their critical infrastructure (e.g. energy grids) and on the most effective regulations for sustainability (e.g. forced labor regulation or due diligence in supply chains). Nokia's experts are detailing roadmaps toward 6G in several parts of the world. We advise on spectrum for broadband, including through our participation in the World Radiocommunication Conference 2023 in Dubai.

In 2023, we contributed our experience and expertise engaging and leading discussions in organizations developing best practices for the industry and advising policymakers across the regions. These included the European Round Table for Industry (ERT) and DIGITALEUROPE in Europe, the Samena Council in MEA, the Technology Council of Australia, the leading body representing the technology sector in Australia, CII (Confederation of Indian Industry) in India. We collaborated with think tanks such as the European Council on Foreign Relations (ECFR) and the German Marshall Fund to promote informed debates on policies beneficial to society.

Our guidelines for dealing with government officials always apply, regardless of the employee's role and the purpose or frequency of interaction. They also apply to interactions with employees of state-owned companies and other governmental customers. The basic guidance for interaction with a government official is laid down in our Code of Conduct. We do not participate in the political or electoral process through direct donations to political groups.

Employee engagement

We use a variety of mediums to engage with our own employees, including platforms for connecting, socializing, discussing, polling, blogging, training (live and online training modules), as well as toolkits on various topics, info hubs, and other similar approaches. We take employee feedback very seriously and incorporate input gathered directly from employees, surveys, polls, and training assessments into our strategic planning process for developing and enhancing compliance policies, procedures, communications, and training.

Nokia's annual survey, "Checking Nokia's Heartbeat" was conducted for the second time in 2023, and the response rate of 76% demonstrated high participation amongst employees. The questions covered a wide spectrum of people and operational topics in order to gain the widest possible appreciation of the employee working experience at Nokia. The area of engagement performed the best with solid scores for Trust, and feeling Valued, both showing a Nokia wide favorability score of 90%. Combined with positive free-text comments regarding 'Co-workers' and 'Culture,' a picture emerged where, at a team level, Nokia employees feel engaged, directed, and purposeful. Nokia's team culture appears to be a strength.

For our external candidates, we also offer engagement with Nokia employees through the Nokia Insiders platform, where authenticity is paramount. Since 2019, with a repository of over 1000 questions posed by candidates and meticulously answered by our dedicated Nokia insiders, candidates gain invaluable insights into the genuine experience of working at Nokia.

Our stakeholders

Stakeholder group	Our approach	Key topics raised in 2023
Customers	We work with our customers to continue to improve the energy efficiency and sustainability of our products. We collaborate to resolve environmental, ethical and social issues, and look at ways in which technology can enable positive changes.	GHG emission reduction, energy and materials efficiency, climate actions, circular products and services, recycled materials, life cycle assessment, value chain, responsible operations, inclusion and diversity and human rights.
Employees	Our people are our greatest asset and we aim to build a culture of trust, respect, diversity and opportunity for all, bringing to life our Nokia essentials of Open, Fearless and Empowered in a vision to create an unbeatable people experience.	New people vision, Nokia essentials, well-being, health and safety, future ways of working and flexibility policies, inclusion and diversity, leadership development, technical career development and ethical business practices.
Investors	We have regular discussions with our shareholders and the investor community on ESG topics including our approach and policies, and our opportunities and targets.	Climate targets and actions, corporate governance, health and safety, ESG reporting standards, security and privacy and biodiversity.
Suppliers and partners	We work with suppliers to drive transparency, sustainability and good ethical business practices in our long and often complex supply chain. Read more	Inclusion and diversity, modern slavery, ethical recruitment practices, responsible minerals sourcing, climate change, circular materials and health and safety.
Industries	We contributed our experience and expertise engaging and leading in discussions with organizations developing best practices for the industry and advising policymakers across the regions. These included the European Round Table for Industry (ERT) and DIGITALEUROPE in Europe, the SAMENA Council in the Middle East and Africa, the Technology Council of Australia, TIA and US Chamber in the US and the Confederation of Indian Industry (CII) in India. We collaborated with think tanks such as the European Council on Foreign Relations (ECFR) and the German Marshall Fund to promote informed debates on policies beneficial for society.	Measurement methodology standards for 5G radio and circularity standards for telecommunications products and networks in ETSI and ITU-T. Responsible use of AI standards in ISO, CEN/CENELEC and various national committees. Energy-saving features in 3GPP.
Academia	We collaborate with leading academic institutions in Europe, the United States and Asia on research topics critical to our future business. We also participate in training programs and innovation events and recruit top talent from these institutions.	6G, AI/ML, industrial IoT, quantum technologies, optics, photonics and cybersecurity.
Civil society	We engage with stakeholders such as community groups and NGOs. We work with NGOs to support programs which have a long-term impact and create a sustainable future platform in the target communities. Read more	Digital skills building, empowering diverse groups and ensuring equal access to opportunity such as education and the job market. Environmental protection and biodiversity.
Cities	We work with cities and communities to drive digitalization and smart sustainable development. Read more	Connectivity and digitalization, 5G use cases, responsible AI, public safety and health, data security and privacy, green economy transition and environmental monitoring.
Governments	We contribute to policy debates fostering a connected society and the adoption of new technologies around the world.	Digital and broadband policies, regulation of emerging technologies (AI), ESG topics, policies that encourage broadband rollout and adoption and the digital transformation of society and industry (incl. spectrum for broadband); policies for trusted and reliable international connectivity, for the security of digital infrastructures, for policy frameworks unlocking innovation (including 6G roadmaps), for the most effective regulations for sustainability (topics such as the regulation of forced labor, or due diligence in supply chains).

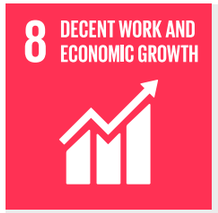
The UN Sustainable Development Goals and our business

The United Nations Sustainable Development Goals (SDGs) and their targets remain a key framework for our sustainability work and for many of our customers and partners.

Climate change remains the most significant sustainability challenge for our business and for the planet. Through the technology we provide, we help customers, other industries, economies and individuals decarbonize through the digitalization of industrial processes and society, so they become more predictive and productive, with reduced emissions.

To minimize our own footprint, we focus on both climate and circularity, where we aim for leadership in the energy efficiency of our products and circular practices. In early 2024, we again received a score of A- from CDP for our work and disclosures on carbon emissions.

> Goals 8, 9 and 13 are the most relevant for our business but we believe that digitalization and enhanced connectivity will play an important role in achieving all 17 SDGs as discussed in this chapter and on our website.



Promote inclusive and sustainable economic growth, employment and decent work

We connect the unconnected through a broad product portfolio that enables greater digital inclusion across countries globally. We deliver broadband to urban and rural communities through fixed and wireless networks and to businesses and educational institutions through private wireless and campus networks.

In 2023, Nokia deployed the Rural Connect solution in the Middle East and Africa to connect the unconnected in remote areas of sub-Saharan Africa. Service providers can use Rural Connect to bring mobile connectivity to remote areas with a cost-optimized radio site solution with high energy efficiency.

Nokia is collaborating with UNICEF to bridge the digital divide by helping to improve digital education and training in schools in select parts of Senegal, West Africa, and launched its new UNICEF program in Vietnam.

Build resilient infrastructure, promote sustainable industrialization and foster innovation

Nokia products and solutions bring improved efficiencies, productivity and digitalization to industries, providing platforms for innovation and decarbonization.

For example, in 2023 Nokia partnered with IT provider DXC Technology to launch a managed secure private wireless network and digitalization platform solution that helps industrial enterprises digitally transform their operations.

We are also working with US energy provider Xcel Energy to help modernize grid operations. The project will include Nokia private wireless network technology, helping support secure, reliable data connectivity and new levels of automation as well as a growing mix of renewable power sources.

Take urgent action to combat climate change and its impacts

We focus on constantly improving the energy and material efficiency of our products across our portfolio. This helps our customers – both communication service providers and enterprises – minimize their environmental footprints.

We announced a new update to our Optical Networks portfolio with PSE-6s, the sixth-generation super-coherent photonic service engine, which is capable of reducing network power consumption by 60%. Generation-over-generation at the module level, the PSE-6s is up to 40% more power efficient per bit compared to the PSE-V.

Nokia joined with Orange under the UNIDO-run (United Nations Industrial Development Organization) Switch to Circular Economy Value Chains (SWITCH2CE) initiative. The project aims to support corporates to accelerate their circularity efforts, including with their partners in developing countries. Nokia works closely with Orange to further develop circular approaches in network equipment, including setting up a new refurbishment and repair center in Egypt, which will extend the lifetime of Nokia products.

We also delivered Habrok massive MIMO radios, which offer improved energy efficiency in wireless access networks compared to previous generations.

Environment

We address our own environmental footprint, focusing on both climate and circularity. We strive to minimize our footprint across scope 1, 2 and 3 by actively and continually managing that footprint. As the volume of network traffic rises in a more connected, digitalized world, we must work to separate this growth in traffic from any equivalent growth in energy consumption. We also need to constantly strive to reduce GHG emissions across our operations and facilities, and work with our supply chain to help drive greater energy and resource efficiency through the whole chain.

To minimize our environmental footprint, we aim to be the leader in energy efficiency in silicon, software and systems. We intend to accelerate our ambition in energy efficiency in 5G-Advanced and 6G through early engagement in standardization and ecosystem development. We are also improving product circularity with more recycled content in new products and expanded circular product offerings to customers. We believe our technology will play an ever-more significant role in helping other industries and society decarbonize (see the "**Industrial digitalization**" section of this report).

Climate

Climate change remains a significant risk to society and the natural environment. It can negatively impact our supply chain and our customers' business, as well as the global economy and political and social stability. We recognize that the products and services we provide globally may affect the environment and climate, as manufacturing, distributing and operating these products require energy and other natural resources.

This section presents our approach, actions and achievements in 2023, concerning our carbon footprint, circularity and biodiversity.

Accelerating our climate ambition

Our accelerated net zero ambition

In 2023, we collaborated with the Carbon Trust to investigate how to accelerate our net zero ambition and the related pathways and levers. In December 2023, the Nokia Group Leadership team approved the plan to fast-forward both our net zero target (Scope 1, 2 and 3) and our interim 2030 scope 1 and 2 targets. Nokia commits to net zero GHG emissions across the value chain[1] by 2040. Nokia also commits to accelerate its existing interim 2030 target to reduce GHG emissions across its own operations,[2] reaching an 83% reduction by 2030. To ensure its targets are aligned with climate science, Nokia submitted its net-zero letter of commitment to the Science Based Targets initiative (SBTi) in February 2024.

Our key climate achievements in 2023

Our current SBT [3] is to reduce our total GHG emissions by 50% between 2019 and 2030 across our value chain (Scope 1, 2 and 3). Overall, Nokia's SBT carbon emissions in 2023 saw a reduction of 9% compared to 2022.

Our scope 1 GHG emissions in 2023 increased by 7% to 111 100 tons CO_2e driven by our marine fleet. Our market-based scope 2 emissions reached 84 800 tons CO_2e. This translates to a 37% reduction in our scope 2 emissions by the end of 2023, compared to 2022.

[1] Scope 1, 2, 3.
[2] This includes complete decarbonization of Nokia's car fleet as well as its facilities, and marine fleet reductions as aligned with International Maritime Industry (IMO) decarbonization pathway
[3] covers: Scope 1: emissions from our facilities, car fleet and marine fleet, own vessels. Scope 2: market-based emissions from purchased energy. Scope 3: emissions from the customer use of sold products (covering almost 100% of our current portfolio) and emissions from logistics, final assembly factories in our supply chain, and marine fleet chartered vessels.

Our climate targets from 2024 onward

2024

85% renewable electricity in our own facilities

75% reduction of our facilities' GHG emissions

2025

100% renewable electricity in our own facilities

65% reduction of scope 1 and 2 market-based emissions, including 85% reduction of our facilities' GHG emissions

2030

50% reduction of our total GHG emissions (Scope 1, 2 and 3)

Final assembly suppliers reach zero emissions

50% reduction in suppliers' GHG emissions

73% reduction in logistics' GHG emissions

95% circularity rate for waste from our offices, labs, manufacturing, installations and product takeback

Increase recycled content in mechanical part source materials

2040

Commitment to SBT to reach net zero emissions across our value chain

In 2023, our scope 3 emissions included in SBT were 34 123 900 tons CO_2e. This represents a reduction of 9% over the previous year.

Despite this decrease, Nokia's SBT-related emissions in 2023 are at the same level as the 2019 baseline year. The reported emissions for the baseline year were 34 960 700 tons CO_2e. Nokia's 2030 SBT is not on track with a linear reduction trajectory. While we continue to accelerate innovations in product energy efficiency and supplier collaboration, the availability and take-up of renewable energy by Nokia's customers must rapidly increase to support the achievement of the interim target.

More and more Nokia customers are accelerating their journey toward renewable energy. In 2023, we started to collect customer-specific emission factors from our customers as we believed this could provide a better indication of our total scope 3 category 11 (use of sold products) GHG emissions than using a GHG Protocol-mandated global emission factor.

Therefore in 2023, we also calculated a total scope 3 category 11 emissions number based on a blended emission factor. The blended emission factor is a combination of customer-specific factors confirmed by customers, country average factors and a global average emission factor. Our total scope 3 category 11 emissions based on the 2023 blended emission factor were 33 691 400 tons CO_2e. In this first year, the blended emissions consist of 5% calculated by customer-specific emission factors, 92% by country-average emission factors and 3% by a global emission factor.

In 2023, 97% of our GHG emissions came from our products in use by our customers in their networks. We continue to minimize these emissions. Read more in "Our portfolio" section.

We also continue to drive energy efficiency in our own operations and our value chain. GHG emissions from our own operations account for less than 1% of Nokia's total carbon emissions and are less prone to the impact of natural catastrophes and severe weather. However, we continue to reduce our energy consumption across our facilities through targeted programs and actions (see the "Our own operations and climate" section). This is further supported by our target to purchase 100% renewable electricity by 2025 across our facilities based on RE100 criteria.

We work with our suppliers to set clear targets, collaborating with them on climate issues and best practices. We collaborate with our customers on supply chain programs. We engage with our stakeholder ecosystem to drive improvements in the broader industry. Despite the potential positive impact of connectivity and digitalization, the ICT industry must continue to decarbonize its own operations and products, decoupling energy use from increasing capacity and data traffic demands.

Our climate targets

Our current SBT is aligned with the goal of limiting global warming to 1.5°C. We were the first telecoms equipment vendor to have an SBT accepted by the SBTi in 2017. In 2023, we have been working to set a net zero target with defined long-term actions and pathways for the decarbonization of our entire value chain.

We also have other short-, medium- and long-term targets in specific areas of our operations and the value chain to drive concrete actions that support and accelerate the achievement of the main SBT.

The current SBT covers the following activities:

- **Scope 1:** emissions from our facilities, car fleet and marine fleet, own vessels
- **Scope 2:** market-based emissions from purchased energy
- **Scope 3:** emissions from the customer use of sold products (covering almost 100% of our current portfolio) and emissions from logistics, final assembly factories in our supply chain, and marine fleet chartered vessels

Our target to purchase 100% renewable electricity by 2025 applies across our facilities globally based on the RE100 initiative.

Our main final assembly suppliers have agreed to reduce GHG emissions by 100% by 2030 for the portion of their manufacturing attributed to Nokia. And we continue to advocate for greater uptake of decarbonized electricity. We encourage the use of more sustainable fuels by our logistics service providers, and work with energy utilities to help enable their transition.

We do not just set targets for our suppliers, we support them by working together to lower our upstream indirect emissions and to promote circular practices and innovation. In 2023, we maintained and improved our supplier climate engagement and had 458 suppliers disclose their climate performance information to CDP, and 283 also set emission reduction targets. We also had 247 suppliers participate in the CDP water security questionnaire. Finally, we urged suppliers to align their climate targets with the SBTi and again rewarded climate-related innovations as part of our Supplier Diamond Awards program.

We also focus on reducing the embodied[1] emissions of our products, for example by offering circular products, adding recycled material content into new products and working with our suppliers on their journey to decarbonizing their energy sources. Read more from our key climate-related targets for 2023 and see a 2024 roadmap of all our ESG targets.

Understanding and tracking our total emissions

As shown in the following graph, Nokia's total CO_2e emissions from scope 1, 2 and 3 were 35 409 500 tons CO_2e. From this total amount, scope 1 emissions were 111 100 tons CO_2e, scope 2 market-based emissions were 84 800 tons CO_2e and scope 3 emissions totaled 35 213 600 tons CO_2e. The scope of our SBT covers 34 319 800 tons CO_2e, which is 97% of our total 2023 emissions. Read more about the SBTi and the criteria for SBTs here.

Managing our environmental actions

Our global Environmental Management System provides the tools to analyze our most significant environmental

[1] Embodied emissions are used to refer to all the lifecycle emissions other than those from the use stage, these include emissions from e.g. raw material acquisition production and end-of-life treatment.

impacts on an annual basis and to systematically track progress on selected focus areas.

Our own operations are certified under the ISO 14001 Environmental Management System standard to verify compliance with regulations and with Nokia's own environmental requirements. In 2023, we maintained our ISO 14001 certification and the coverage of employees within the scope of that certification was 90%.

Climate-related risks and opportunities

The potential effects of climate change are wide-ranging, from natural disasters that could affect our supply chain, operations and customers, to the impact on the world economy, rising energy prices and increased regulation. We are committed to the UN Global Compact's Ten Principles, including Principle 7 on supporting a precautionary approach to environmental challenges. We follow the precautionary principle, especially in areas involving environmental risks.

Our most material climate-related opportunities and risks are related to our ability to help other industries reduce their emissions and to constantly improve the energy efficiency of our products in use. We believe that the opportunities our technology provides to our customers, industry and society, as well as the environmental actions we take in our operations, can positively contribute to the fight against climate change. For examples of how we help other industries and cities increase efficiency, see the "Industrial digitalization" section.

The SBT covers the following activities:

- **Scope 1:** emissions from our facilities, car fleet and marine fleet, own vessels.
- **Scope 2:** market-based emissions from purchased energy.
- **Scope 3:** emissions from the customer use of sold products (covering almost 100% of our current portfolio) and emissions from logistics, final assembly factories in our supply chain, and marine fleet chartered vessels.

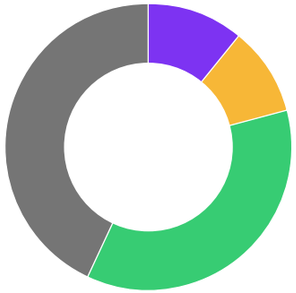
Our own operations are not very sensitive to changes in energy pricing. But climate change can impact our customers and supply chain, as well as the global economy and political and social stability. Our climate-related disclosures were aligned in our CDP[2] report according to the guidance of the Task Force on Climate-Related Financial Disclosures (TCFD). Read more about the risk factors that could affect our business in our "Nokia in 2023" annual report.

Our carbon footprint (Scope 1, 2 and 3)

Emission source	Metric tons CO_2e	% of total	
Energy use in facilities and by fleet	195 900	0.6%	Our scope 1 and 2 market-based emissions
Use of sold products	34 427 800	97%	Our scope 3 emissions
Purchased goods and services	560 000	2%	
Upstream transportation and distribution	140 900	0.4%	
Employee commuting	54 100	0.2%	
Business air travel	30 700	0.1%	
Total scope 1, 2 and 3 emissions	**35 409 500**	**100%**	

Percentages calculated out of reported, relevant GHG emissions.

Our carbon footprint (Scope 1 and 2)



Emission source	Metric tons CO_2e	% of total	
Facilities, direct emissions	21 900	11%	
Car fleet	19 300	10%	Our scope 1 emissions
Marine fleet	69 900	36%	
Facilities, indirect emissions from purchased energy, market-based	84 800	43%	Our scope 2 emissions
Total scope 1 and 2 emissions	**195 900**	**100%**	

Reported data is rounded to hundreds. We ensure the total scope 1 and 2 rounds correctly. Percentages calculated out of accurate GHG emissions.

[2]CDP is a global organization that runs a bespoke global disclosure system for investors, companies, cities, states and regions to manage their environmental impacts.

Decarbonizing our value chain

We must continually manage our industry's own footprint. We must ensure that the products and solutions we design and deliver to our customers are as energy- and material-efficient as possible. Our whole value chain must also show improvements in energy efficiency and minimize any potential negative impact from technology.

Our portfolio

According to our Life Cycle Assessment, the GHG emissions from the customer use of sold products remain the largest part of our carbon footprint. As stated earlier, in 2023 the use phase based on GHG reporting accounted for 97% of our total GHG emissions. Our greatest efforts remain concentrated on reducing the power consumption of our products across Nokia's portfolio to improve energy efficiency and have the greatest direct impact on our carbon footprint.

In 2023, we delivered energy efficiency solutions in silicon, hardware, software and services. We worked with our customers to optimize the energy used across their networks, not just looking for energy gains of individual network elements. We assessed the opportunities to improve network performance and minimize energy use, thereby lowering emissions.

We also looked at automatic configuration and AI/ML-based optimization of energy savings functionalities, intelligent software capabilities, technology innovations in our hardware evolution, and energy-efficient site solutions, all to minimize our carbon footprint.

In 2023, the GHG emissions from the customer use of sold products decreased by 9% compared to 2022. Examples of energy efficiency improvements across our product and services portfolio that contributed to the reduction are detailed below by business group.

Mobile Networks

In 2023, we reached our target of halving the overall average energy consumption of 5G massive MIMO base stations while doubling the performance compared to the baseline of 2019.

This was made possible with continuous improvements in our software features and hardware products based on ReefShark System-on-Chip (SoC) technology:

- AirScale Habrok massive MIMO radios have up to 30% lower energy consumption.
- AirScale Baseband products have up to 60% lower energy consumption compared to the previous product generation.

In addition, our liquid-cooled AirScale Baseband subrack can reduce cooling system energy consumption by up to 90%.

Our MantaRay Energy solution automates radio access network (RAN) energy-saving features with the help of AI. This can bring an additional 15% energy savings. With our innovative energy-saving radio site solutions, our customers can reduce cell site energy consumption by up to 30%. In our Wavence microwave transport portfolio, the new traffic-aware sleep mode and a simplified site solution can together enable up to 50% energy savings.

Radio network energy efficiency is essential for helping the telecommunications industry and other industries reduce their carbon emissions. 5G is designed to be 100 times more energy-efficient compared to earlier generations of radio technologies. While the mobile industry has continued to see double-digit growth in data traffic, our environmental impacts have grown at a much slower pace.

Nokia embeds energy efficiency thinking into the entire product development process from design and manufacturing to circularity, as well as how we build a sustainable value chain. The new products and services we launched in 2023 will help our customers concretely reduce their scope 1, 2 and 3 carbon emissions.

Habrok, our latest generation of energy-efficient AirScale massive MIMO radios for operators and enterprises, was announced at Mobile World Congress 2023 in Barcelona, and the first Habroks were already delivered to customers in Q4 2023. The Habrok 64 weighs only 24 kg and has low power consumption, which reduces its footprint and improves energy efficiency significantly.

At our Midsummer launch event, we introduced new additions to our AirScale Baseband portfolio. These new products help our customers meet their environmental goals by keeping RAN energy consumption at a minimum.

We also launched MantaRay Energy – a new solution which combines our capabilities to optimize RAN energy consumption with the help of AI. This solution has already been implemented in customer networks with concrete results in RAN energy savings.

While in-built RAN software functions can tackle energy consumption during low traffic hours, our Digital Design service can in addition address peak hour energy consumption by adjusting the power settings at the cell level. With this service, Mobifone in Vietnam was able to reduce RAN energy consumption by close to 14% with no compromise on network performance.

Our new energy-saving site solutions include pre-integrated all-in-one outdoor cabinet and a mast- or wall-mounted zero-footprint site solution. These solutions can significantly reduce radio site energy consumption by harnessing natural cooling, as well as reduce costs and materials.

Our Wavence microwave transport solution now comes with traffic-aware sleep mode software and embedded power metering. With these features, it is possible to measure power consumption in the live network and further optimize the transport network energy efficiency.

Cloud and Network Services

Nokia AVA Energy Efficiency helps customers meet their energy efficiency and carbon reduction goals. The solution uses AI to assess where active and passive power usage can be reduced without impacting the customer experience, resulting in up to 30% energy savings and therefore lower CO_2e emissions for telco radio networks. It can be deployed on multi-vendor active RAN sites and other network domains like access, transport, core and data centers. It also monitors and controls auxiliary components in a network site including cooling systems, batteries, air ventilators and air-conditioning control, and shuts down unused hardware resources, which are critically important levers for energy reduction. AVA Energy Efficiency is offered as-a-Service, combining Nokia's deep telcommunications knowledge and data science capabilities with the rapid deployment enabled by utilizing public cloud. Nokia, using its AVA Energy Efficiency software, has more than 50 completed or active energy-saving projects with communication service providers around the world. New customers in 2023 for AVA Energy Efficiency included Globe Telecom in the Philippines and Safaricom in Kenya.

Nokia's Cloud Native Communication Suite (CNCS) gathers all IMS voice core components in a simplified cloud-native network function (CNF), reducing the carbon footprint of the solution by 15% and operating costs by up to 35% due to simplified life cycle management.

Nokia's IMPACT IoT software platform allows customers to implement smart metering on energy, waste, gas, water, humidity and more to conserve scarce resources. IMPACT IoT remote management enables meter data and meter devices to generate instant visualization of energy consumption and daily operations as well as standardized data for daily readings and firmware upgrades. This allows for more effective billing, greater visibility into consumption, increased safety and proactive maintenance.

With industrial digitalization, particularly through campus private wireless networks, Nokia Digital Automation Cloud (DAC) and industrial 5G devices, Cloud and Network Services provide connectivity and digital solutions that can transform physical and asset-intensive industries through decarbonization, improved safety and productivity. In campus edge, more than 90% of customers have reported energy reductions, and customers such as Dow Chemical and Chevron Phillips Chemical have leveraged Nokia's solutions to automate operations and significantly reduce power consumption in industrial and hazardous operating environments. Nokia Digital Automation Cloud (DAC) Private Wireless Compact offers the most economical entry point into Industry 4.0 for small and mid-sized industrial facilities. The compact 5G private wireless solution offers all of the security,

radio performance and reliability of Nokia DAC in a smaller form factor with up to 60% reduction in energy consumption compared to Wi-Fi, contributing to increased sustainability of industries.

Nokia's Telecom Software-as-a-Service solutions enable communications service providers to gain better control over their communications expenses, optimize network usage and reduce energy consumption through better asset utilization. The on-demand nature of Software-as-a-Service delivers more efficient use of resources and customers only consume the energy they need, while cloud hosting reduces emissions from hardware shipments.

Network Infrastructure

In 2023, our Network Infrastructure business introduced the Sustainability Excellence category to our internal annual quality awards. This initiative aims to recognize projects and teams that go above and beyond to incorporate sustainability principles into what we do here at Nokia. The projects include initiatives to directly reduce CO_2e emissions through energy consumption reductions, as well as to improve circularity and accessibility.

Within the Hardware Services group, initiatives such as direct ship and localization/light repair were implemented where possible to reduce our carbon footprint. Through this they were able to reduce over 7 500 tons CO_2e in 2023. They also contribute to reducing our carbon emissions footprint through circularity initiatives such as refurbishments, component harvesting, using remanufactured stock, reusing common packaging materials, and localized recycling for unrepairable units.

Building from Nokia's global ESG program, Network Infrastructure expanded its ESG Principals capacity to include teams across its Regional Business Centers and Services organizations. These ESG Principals will help enable customer-facing teams to be ready to collaboratively support customers and internal teams on their sustainability journeys.

Our IP silicon innovation and leadership continues with the announcement of our new in-house-developed FPcx routing silicon family. Like our FP5 IP routing silicon, FPcx delivers similar benchmark IP routing energy efficiency while delivering deterministic performance and services without compromise, even as it undertakes multiple network roles. You cannot remove the performance element from measuring power as they are directly linked. This allows our customers to do more with fewer routers, minimizing their overall network energy consumption.

Our system design innovations deliver highly efficient cooling that helps lower the total energy consumption even further compared to competing designs. 800GE routing, enabled by FP5-based systems, can increase capacity three times within the same space and energy envelope while reducing energy consumption by more than 75% over previous-generation silicon. Using the latest generation of 800G optics can offer an additional reduction in energy consumption of up to 40% when compared with the equivalent amount of 400G optics, helping our customers deliver highly sustainable traffic growth with better energy and space efficiencies. Customers also have the option of adopting the new generation of smaller and lower-cost optics applicable to 100G, 200G and 400G interface speeds with energy savings of up to 30% against previous-generation optics. Importantly, with FP5 there is no performance trade-off to achieve energy savings – even as the router performs multiple network roles with full features and capabilities enabled and running at line rate.

Our IP software innovation can help drive additional energy savings and hence reduce related emissions. Service convergence – having a single router support three or more network roles (e.g. core, peering, edge, mobile backhaul, and broadband network gateway) – allows operators to consolidate separate networks into one backhaul and core network. This reduces energy consumption by having significantly fewer elements in the network. Our software licensing flexibility provides the capability to only enable the line cards and ports required to meet the traffic load, thus reducing system energy consumption. Our silicon, system design and software innovation, combined with network automation, are applied across our IP routing portfolio to meaningfully help our customers improve their IP network energy efficiency.

In Optical Networks, the sixth-generation photonic service engine (PSE-6s) was announced in March 2023 with commercial deployments expected in early 2024. The PSE family of coherent digital signal processors (DSP) drives our high-performance, high-capacity optical transport platforms deployed in communication service provider, internet service provider and enterprise networks. The PSE-6s enables new dimensions in scale, performance and sustainability by delivering 1.2Tb/s per wavelength and 2.4Tb/s in a single line card, up to 2 000 km reach at 800G and up to 40% lower power consumption per bit versus the PSE-V.

> At our Midsummer launch event, we introduced new additions to our AirScale Baseband portfolio. These new products help our customers meet their ESG goals by keeping the Radio Access Network (RAN) energy consumption at a minimum.

Our Fixed Networks unit helped operators move to more efficient PON (passive optical network) technologies: from GPON to XGS-PON and 25 G-PON. Nokia Lightspan, running 25G PON, consumes just 0.25 W/Gbps, making it the most efficient broadband technology in the world. We help customers move away from energy-inefficient point-to-point fiber and onto 25G PON.

Lightspan nodes support GPON, XGS-PON and 25G PON. Upgrades on the same chassis increase their longevity and reduce waste. We further innovated in software and functionality. Lightspan energy-saving features include an evolution from a push to pull system for air cooling, programmable operating temperature control, modular power-down of unused ports, and a heat pipe equalizing effect in line cards. In choosing Lightspan, telco operators can lower their carbon emissions and their energy bills.

Our own operations and climate

Our target to reach 100% purchased electricity from renewable sources by 2025 across our facilities includes our offices, laboratories and factories. It is aligned with the RE100 initiative, the global corporate renewable energy initiative bringing together hundreds of large and ambitious businesses committed to 100% renewable electricity.

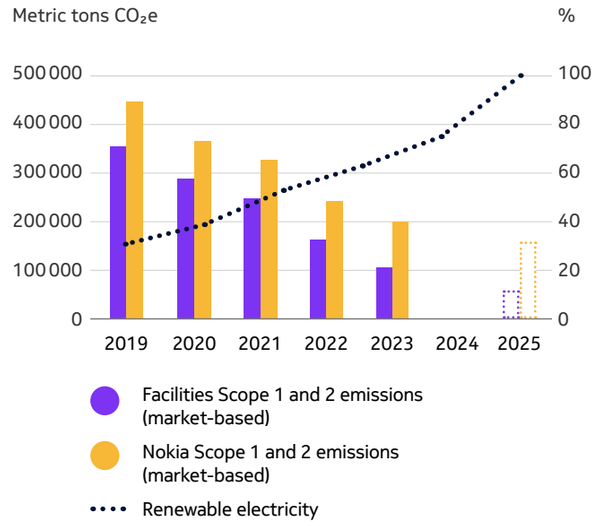
In 2023, electricity consumption across our facilities was reduced by 3% compared to 2022, 75% of total consumed electricity came from renewable sources and our scope 2 market-based[3] emissions decreased by 37% from 2022 levels. The facilities' scope 1 and 2 emissions were reduced by 33% compared to 2022 and 69% compared to the 2019 baseline.

Nokia sites using renewable electricity in 2023 were in the following countries: Australia, Canada, China, Finland, France, Germany, Greece, India, New Zealand, Poland, Portugal, Spain, the UK and the US. Improving energy efficiency in our facility operations remains a key focus in all markets. Uninterrupted Power Supply (UPS) and Heating Ventilation and Air Conditioning (HVAC) equipment optimization in Finland, Romania and India; LED lighting installations in China; and lab space optimization in Japan and South Korea, as well as continual improvement of site operating procedures are just a few of the implemented initiatives contributing to the reduction in energy use.

Sustainability in the selection of our facilities also continues to be considered with the recent announcement to relocate our Bell Labs Murray Hill campus in New Jersey to a new state-of-the-art research and development facility by 2028 that will meet a minimum requirement of LEED Gold certification. Other facilities achieving sustainability certifications (LEED, Green Mark) in 2023 include South Korea and Indonesia.

At our Chennai factory in India, this year, an additional 1.2MWp-capacity was added to the existing 1.2MWp capacity rooftop solar plant. This addition, along with the installation of rooftop solar in our Alcatel Submarine Networks manufacturing site in Calais,

Facilities scope 1 & 2 emissions and renewable electricity (scope 2)



[3] A market-based method derives emission factors from contractual instruments, which include any type of contract between two parties for the sale and purchase of energy bundled with attributes about the energy generation, or for unbundled attribute claims.

France, contributed to the overall increase in renewable electricity. In addition to improving energy efficiency at our own facilities, construction is underway at our West Gate Wroclaw site in Poland to transfer excess heat generated from lab equipment to the district heating network. This concept is also used at our Tampere site in Finland and reduces the need for other types of energy to be used to provide heat to the local communities. Our Oulu factory in Finland is the first Nokia facility to purchase renewable district heating in addition to renewable electricity, therefore operating on 100% renewable energy.

Employee transportation - our car fleet

With our employee transportation, we aim to reach the target for our own operations' emissions by introducing low-emission vehicles and alternate mobility options. In 2023, GHG emissions from our global car fleet decreased by 14% compared to the previous year and are now 35% less than in 2019.

We have continued introducing electric vehicles as an alternative for combustion engine cars. Delivery times of new cars were still long in 2023, but the situation improved from 2022 when the automotive industry suffered from component shortages and a lack of capacity to meet the demand.

In 2023, we reached an important milestone in green car policies – we celebrated 15 years of our first green car policy implemented in Finland in 2008. That has led to great results. For example, all new company cars leased by Nokia in Finland in 2019, many of which returned to the used car market in 2023, represented 49.3 g/km less than the average CO_2 emissions of new passenger car registrations in Finland in the same year. As the average scrapping age of cars in Finland is 22 years, each company car Nokia registered in 2019 is estimated to save 21.7 tons CO_2 compared to the average car on the market, and they are now returning to the used car market.

Marine fleet

Nokia also has a marine fleet related to our subsea cables business, Alcatel Submarine Networks (ASN). ASN contributes to Nokia's main target to reduce GHG emissions by 50% by 2030. The ASN fleet represents around 63% of our scope 1 emissions. Although ASN's marine fleet CO_2 emissions have increased globally, when broken down by vessel there is an average reduction of 4.5% per vessel compared to 2022.

ASN has a green charter in place and continues to look at five important strategic areas: the rejuvenation of its marine fleet, the use of shore power when at port, the optimization of transit routes using AI, the mobilization of regional-based chartered vessels to reduce transits, and next-generation cable ships with the latest technology in terms of propulsion and power generation.

Between 2019 and 2023, ASN updated its fleet with three modern vessels, including two low-tonnage vessels to replace former-generation and higher-tonnage vessels for the same scope of work – namely the maintenance of submarine telecom systems. Thanks to the lower tonnage and the more efficient propulsion, this is leading to a systemic CO_2 emission reduction.

ASN has also brought a high-tonnage cable ship to its fleet, replacing a former-generation cable ship. This increases ASN's ability to carry higher submarine cable tonnage with reduced CO_2 emissions per ton compared to 2022.

As part of the continued search for improvements in CO_2 emission reduction, ASN performed initial biofuel testing on one of its vessels. In 2023, the ASN Marine Fleet Manager obtained the Green Marine Europe label (covering the ASN Marine Fleet), which goes beyond European and international environmental regulations.

Engaging our suppliers on climate

We work with our suppliers to reduce emissions, setting targets across our supply chain. Our target for our final assembly suppliers is part of our SBT climate target and requires that the final assembly suppliers achieve zero emissions by 2030 for the portion of their manufacturing allocated to Nokia. All final assembly suppliers have detailed roadmaps on a factory level, and we track their execution at business review meetings.

We have also set a 50% reduction target by 2030 for other suppliers. In 2023, we extended our close collaboration on our 2030 roadmap with our Joint Design Manufacturing (JDM) suppliers as well as supplier categories with high emission intensity such as suppliers of integrated circuits, semi-discretes and printed wiring broads. We require our suppliers to have a documented Environmental Management System (EMS).

We also require key suppliers to be ISO 14001 certified, which we track. We have worked with the CDP Supply Chain Climate program for more than 12 years and together create programs to drive continuous

improvements in our upstream scope 3 emissions. We encourage our key suppliers to report their emissions, set reduction targets and roadmaps, get data verified and cascade emission reduction expectations and due diligence to the next tiers. By following up with suppliers on improvement areas, we also share our good practices and help them to reach their targets.

In 2023, 458 of our key suppliers, representing 65% of our total procurement spend, responded to CDPs request to disclose their climate performance information. Some of the key data is shown in the chart on this page. All suppliers whose CDP performance was below expectations were provided with improvement requirements and given recommendations for next priorities.

In 2023, our scope 3 emissions from our supply chain (part of scope 3 category 1) were approximately 540 500 tons CO_2e. These emissions are estimated by using our suppliers' scope 1 and 2 emissions allocated to us based on the volume of products and services we purchase from them. We received the emissions data from 63% of our supplier spend through the CDP Climate Change program, and we scaled up the emissions allocated to Nokia to cover 100% of our suppliers.

In 2023, we continued to address one of the challenges (accuracy) in emission allocations, namely data quality, by comparing the supplier-reported data with Life Cycle Assessment data tools and addressing quality issues with suppliers with strong deviations from sector average and Life Cycle Assessment values.

Our Supplier Diamond Awards in 2023 again recognized suppliers across several categories. Expert juries judged supplier presentations, and the best were announced at our annual supplier event. The winning supplier in the sustainability category in 2023 was one of the leaders in sustainable semiconductor manufacturing – examining the decarbonization of its own operations, establishing a net zero target for 2040 and collaborating with Nokia to reduce the emissions of our products.

Read more about our work with suppliers under the Responsible sourcing sub-chapter and the Water in our supply chain section.

Product transportation and distribution

We aim to save space, reduce packaging materials and maximize transport efficiency, thereby reducing inbound and outbound shipments. The continuous optimization of our manufacturing and supplier network across the regions will not only enable us to deliver a more rapid response to our customers' needs, but also decrease transportation costs and reduce CO_2e emissions. The reuse of packaging materials also contributes to reductions in the use of new packaging material. In 2023, we reduced the use of new packaging materials in terms of weight by 2 100 tons by reusing transportation packaging.

In terms of our logistics, we look to explore and use the most efficient product transportation options. In 2023, our scope 3 GHG emissions related to upstream transportation and the distribution of our products stood at around 140 900 tons CO_2e, a decrease of 57% compared to 2022.

This significant drop in the above CO_2e emissions is partly due to our continuous efforts to reduce air transportation while increasing sea, road and

Supplier climate disclosure figures

7 500 tons CO_2e

annual reduction achieved by our final assembly suppliers (Nokia relevant)

143 300 tons CO_2e

annual reduction achieved by all suppliers' activities (including final assembly) related to Nokia business

458
suppliers disclosed data, >60% of Nokia spend

369
suppliers reported their GHG emissions (Scope 1 and/or 2)

290
suppliers purchased renewable energy

298
suppliers engaged their own suppliers on climate disclosure

84
suppliers proposed reduction initiatives and collaboration opportunities with Nokia

283
suppliers had structured targets for emission reduction, and 96 of them in line and validated by the SBTi

multimodal modes (e.g. combining sea and air) and partly to the regionalization that moves activities closer to customers. As a result, in the last two years we have nearly halved our air transportation deliveries. However, a considerable part of the reduction in transported volumes related to a decrease in our deliveries.

As one of the emission reduction methods in our transportation activities, we have explored carbon insetting, which is similar to carbon offsetting except the activities that lead to carbon footprint reduction take place within the context of the value chain. In 2023, we continued applying our sustainable aviation fuel (SAF) carbon insetting model, which aims at a direct carbon mitigation of the transport system. This is one of the most sustainable ways to reduce carbon emissions in air freight, as it saves any additional energy consumption arising from compensation measures. We further engaged with our logistics partners on our requirements related to the offering of SAF and have expanded the collaboration on SAF to four logistics partners.

For 2024, our focus will be on continuing to improve the environmental efficiency of our transportation by collaborating with the biggest contributors (for example logistics providers, partners or customers) and concentrating on minimizing the most environmentally detrimental modes of transport.

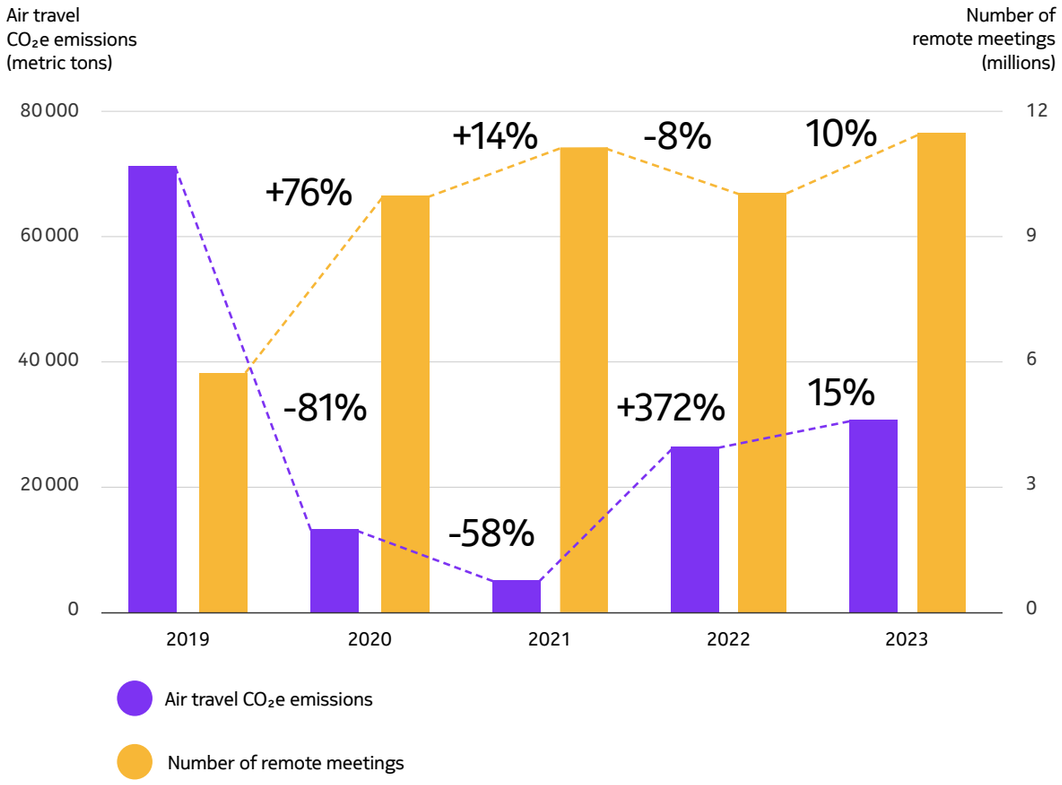
Reducing our travel footprint

Business travel includes flights, hotels, rail, rental cars, taxis and public transport. Our reporting is based on air travel, which is the biggest contributor to our business travel emissions. We calculate the CO_2e emissions based on the number of miles flown.

In 2023, our CO_2e emissions related to business air travel increased to approximately 30 700 tons, meaning a 15% increase compared to 2022. A significant portion of the increase was attributable to the lingering impact of pandemic-related travel restrictions in 2022. It is worth noting that compared to pre-pandemic levels in 2019, we were able to reduce travel emissions by 57% and increase remote meeting volumes by 103%.

Our commuting emissions have increased by 8% compared to 2022, amounting to 54 100 tons CO_2e due to increased commuting to offices. Most of our employees continued working from home at least partially in 2023 – on average 51% of all employees.

Remote meetings increased, business travel emissions decreased



Circularity

At Nokia, we look at circularity from two perspectives. First, how we can increase the usage of non-virgin materials in the creation of new products and packaging. Second, how we can ensure maximum circularity of our operational value chain. This means that we embed circularity into everything we do.

Efficiency, the optimized use of resources and digitalization are key contributors to increase circularity. Traditional ownership of goods is changing to access to services and to the use of digital platforms for a sharing economy, both of which can improve circularity. Our strategy to increase operational circularity follows the classic waste hierarchy. The first principle of the hierarchy is always the avoidance of waste, which we do through digitalization, operational efficiency and product life extension. Good waste management practices are important.

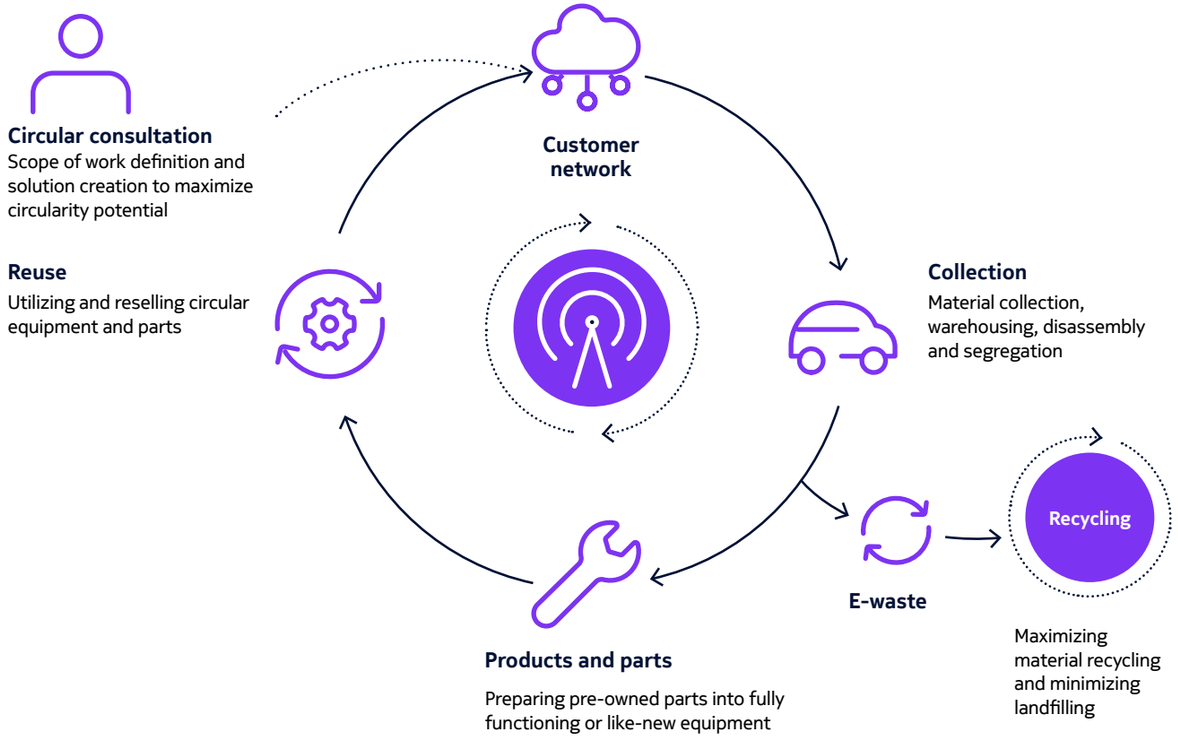
We have set targets to increase the use of circular materials in new products. We introduced a circular metric to guide our operational circularity journey and to close the material loop. Our target is to be 95% circular regarding waste in 2030. This target includes waste across our value chain: from our own top 20 sites based on waste production, including our own final assembly factories, supply chain final assembly factories, installation projects at customer sites, and product takeback.

The purpose of the target is to improve waste management so that disposal to landfill is minimized and the waste produced will be either reused, recycled or recovered. To reach our target we aim to improve our waste-related data management and work with stakeholders to help ensure the best possible circular solutions for obsolete materials across geographies. In 2023, we achieved a circular waste level of 86% based on the attained data coverage. We have recognized areas where a high circularity rate has already been achieved, as well as areas requiring further action. There are still data gaps to be closed but data accuracy has improved.

Circular practices and our products

We continue to progress with the creation of ICT-specific circular economy standards in the ITU-T (International Telecommunication Union Telecommunication Standardization Sector) and ETSI (European Telecommunications Standards Institute), providing a common industry view on circularity and sharing best practices. In 2023, an assessment method for circularity performance scoring (ITU-T L.1023) was revised and published, making it applicable for a much wider product set including network infrastructure ICT goods, while the earlier standard was mostly tailored toward consumer electronics. New criteria and requirements related to robustness, material recycling compatibility, recycled metal content requirements

Circular practices and products



and other aspects related to packaging recycling and recyclability were also added. Work is ongoing on a global digital sustainable product passport, a model for product information on sustainability and circular economy along with other work items related to e-waste management and circular economy.

For over 30 years, we have had well-established circular practices that utilize the full value of our products. We take back or acquire excess and obsolete products from customers and markets, and then refurbish, repair or remanufacture these units for inclusion in the product supply chain for customer purchase or our own internal use. As an original equipment manufacturer (OEM), we maintain processes that keep products at their highest value and quality for multiple uses and for the longest time possible through our global services.

We are helping to minimize energy-intensive processes throughout the value chain by improving the circularity of our products and packaging. The aluminum in our cabinets, chassis and heat sinks uses up to 70% recycled content from manufacturing waste. We use 100% recyclable product packaging. We design our packaging to reduce space and transport volumes while providing better protection and handling. Corrugated cardboard buffers have replaced foam, simplifying waste disposal.

Circular products and services portfolio

At Nokia, we are focused on strengthening our customer circularity offering. Our Circular Products and Services portfolio enables customers to shift more quickly into the circular economy and helps ensure that the customer network evolution is sustainable. We take on the collecting, refurbishing, reusing, reselling and recycling of telecom equipment during network upgrades or expansions.

Most of our products have a design life of between 10 and 15 years, with some of our products remaining in extended service for more than 20 years. We have environmentally beneficial circularity practices in place such as product takeback, refurbishment and recycling services.

In 2023, we processed 2 900 metric tons of obsolete products and parts. Approximately 49 300 units were refurbished for reuse/resell purposes with a total weight of 290 metric tons. About 2 620 metric tons of old telecommunications equipment were sent for energy and materials recovery.

As part of the current delivery model, we are running a Global Refurbishment Center that tests and refurbishes units sourced back from operators via an Asset Recovery Service and sends damaged/non-repairable units for recycling via Nokia-approved recyclers.

Recycled content in products

In 2023, we continued our work to increase the use of recycled material content in our products. First, we worked further with our suppliers of cast aluminum parts to fully understand raw material acquisition practices and the potential to increase the recycled content in our components.

We estimate that 43% of over 10 000 tons of cast aluminum parts used in Nokia products in 2023 have recycled content in them. The recycled material used in our products today is mainly from inter-industry manufacturing waste, as there are still challenges related to material purity, availability of recycled materials and verification of source of materials. We see positive developments from suppliers of aluminum – in terms of actively searching for sources of recycled material, as well as setting targets that reflect our long-term targets. We have also extended this work and conducted baseline analyses for copper and steel (both stainless and low-alloy steel) in our mechanical parts. Availability of recycled copper and steel is even lower than aluminum, and suppliers are only just starting to implement the requirement to have recycled content for these materials. The percentage of recycled material content for copper is 3% and for steel is 7% for low-alloy and 13% for stainless.

We have also continued to increase the circularity of plastics used in our products by identifying projects where recycled plastics may be used. In 2023, Fixed Networks started shipping a second customized optical network terminal (ONT) design that uses 60% post-consumer recycled plastic in its housing. In addition, a new ONT was developed where housing with 85% recycled plastic content is available as an option for customers. Meanwhile, Mobile Networks started shipping samples of the new Habrok radio that contains 50% post-consumer recyclate in the housing parts.

Extended producer responsibility (EPR)

Compliance with relevant environmental regulations is an important part of our environmental policy. Extended producer responsibility (EPR) regulatory programs strive to decrease the environmental impact of covered products by making the manufacturer responsible for the entire life cycle of the product, especially end-of-life management through product takeback.

Nokia Circular Products and Services consists of four modules that can be customized to meet e2e customer requirements:

- Asset Recovery: Reacquiring (takeback/buyback) and handling customer dismantled surplus products including consultation, logistics and project management
- Circular Products and Parts: Selling circular products and parts to operators looking to expand their network using circular products.
- Refurbishment Service: Extending hardware lifetime but also testing and validating of customer-owned dismantled product equipment for reuse in the network
- Recycling Service: Maximizing material recycling and minimizing landfill, e-waste management

Sustainable product design

Our Design for Environment approach helps to ensure we create technologies that incorporate environmentally sustainable principles. Life cycle thinking is a key component of this approach. It helps us reduce our products' lifetime environmental impact by improving material and energy efficiency. It also enables compliance with both regulatory and our own requirements. We provide an environmental product declaration (EPD) to our customers for most of our products. The EPD details environmental data for our products, including material composition, embodied emissions, power consumption and recycling instructions.

When looking at our products' environmental impact calculated through a Life Cycle Assessment, the energy consumption during the product's use phase forms the greatest part. We provide an EPD in both product embodied emissions (raw material acquisition, production, installation, maintenance, end-of-life treatment, and distribution and transport for each stage) and product power consumption. The Life Cycle Assessments performed on our products follow the ITU-T L.1410 standard and the ISO 14040/14044 standards.

To help address this use stage energy consumption, our Design for Environment program supports product development teams by setting requirements and evaluating energy-saving features with each new product introduction. In 2023, we worked jointly within the International Electronics Manufacturing Initiative (iNEMI) to initiate a new round of updates for life cycle environmental impact data for key component categories used in our products – printed circuit boards, semiconductor devices and commodity materials such as metals and plastics. The intent is to have more contemporary datasets included to assess our products' carbon footprint more accurately during their development. (More information on this project and its call for participants can be found at iNEMI Eco-Impact Estimator).

Our Design for Environment program covers more than product hardware – it also includes the software designed to operate the hardware. Our software methodology documentation aims to help software developers significantly reduce the amount of energy used by network equipment by having them consider how their software code affects equipment energy use. To evaluate the resource efficiency and energy efficiency of the virtualization of network functions, our software developers employ the Resource Efficiency Rating (RER) and Energy Efficiency Rating (EER) metrics as defined in ETSI standard ES 203 539.

In 2023, we began collaboration with the Consortium for IT Software Quality (CISQ) that has evolved into a comprehensive standard measure, particularly in the form of an Automated Source Code Resource Sustainability Measure (ASCRSM). This new measure aims to address weaknesses with substantial impacts on resource usage, contributing to a more sustainable and efficient approach to software implementation.

Materials and restricted substances

Global legislation or regulations ban or restrict several substances considered hazardous to humans and/or the environment. In the design phase we ensure these substances are not present in our products, components and materials. Future customer and legal requirements may also influence product development choices made today.

Our products, including OEM products and parts, modules and components, must meet the requirements stated in the Nokia Substance List. In 2023, we again reviewed and published our NSL with minor changes to the requirements. The current list can be found at Nokia Sustainability downloads.

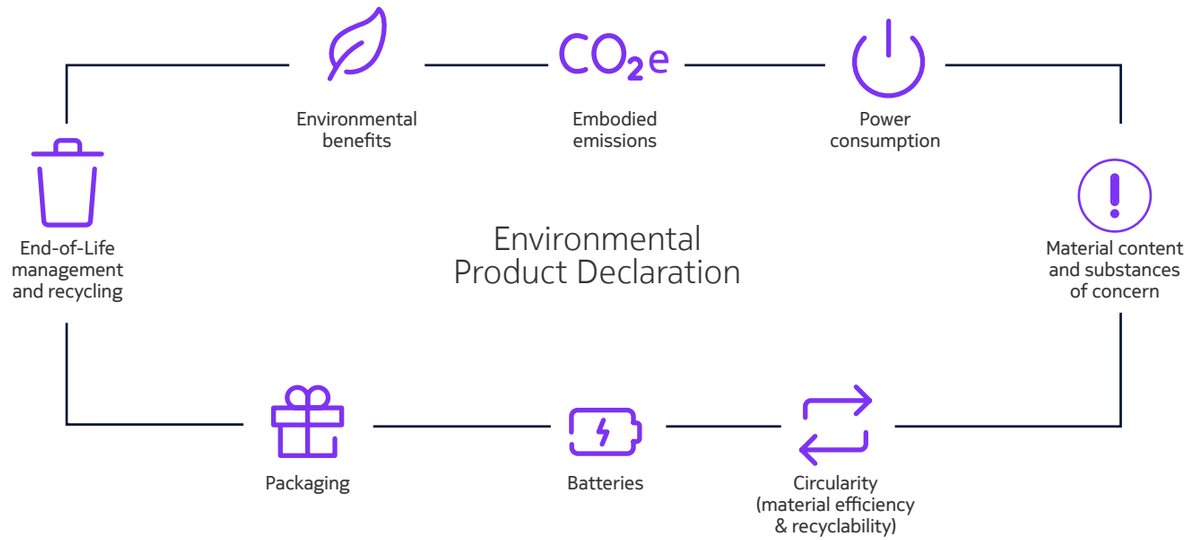
Suppliers must provide us with a list of any EU Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) candidate substance of very high concern present in a product. Furthermore, products, parts, modules and components must not contain any substance listed on the Nokia Substance List as "to be avoided," as far as is technically and economically possible. We aim to comply globally with all applicable substance requirements from environmental laws and regulations, such as the EU RoHS Directive (2011/65/EU), WEEE Directive (2012/19/EU) and REACH Regulation ((EC) No. 1907/2006.). For more information on REACH, please see Nokia's REACH Declaration.

In view of the increasing concerns regarding the very high persistence of per- and polyfluoroalkyl substances (PFAS), a thorough assessment was done across Nokia's business groups and supply chain to identify where PFAS are used and understand what applications should be prioritized for research into substitution. In December 2023, we decided to list PFAS as "To Be Avoided" in the 2024 edition of the Nokia Substance List.

We globally restrict the use of ozone-depleting substances in products and packaging as well as in supplier processes per the requirements of EU Regulation (EC) No. 1005/2009 on Ozone-Depleting Substances, which implements the Montreal Protocol into EU legislation.

In 2023, we refreshed the material content data with supplier responses on Nokia Substance List compliance, the use of RoHS exemptions and the presence of REACH Substances of Very High Concern (SVHCs) after distributing the updated Nokia Substance List. The data is subsequently reviewed and stored in a dedicated database enabling us to review the impact of changing substance requirements on our current and future products.

Sustainable product design



Material efficiency innovation

Material efficiency includes designing products that use less material and energy while having increased throughput capacity and functionality. This material efficiency is exemplified in our Mobile Networks products. In traditional massive MIMO wireless 5G radio systems, bulky antennas had the antenna radiowave beamforming processing done in the baseband unit. This caused congestion with other essential baseband processing tasks. Now, with the ReefShark System-on-Chip (SoC), the newest generation of massive MIMO has higher energy efficiency, and a significant reduction in materials compared to the previous generation. This is a clear demonstration of how extreme advances in new chipset designs can provide a trio of benefits in power efficiency material reduction and capacity increase.

Product materials breakdown

Our products are composed predominantly of metals, which constitute around 80% of the total weight of most products. Aluminum is the most significant metal and is used in sheet metal for cabinets and chassis, and in castings for heat sinks. Steel, stainless steel and copper follow aluminum as the most relevant metals present in our products. Plastics compose less than 20% of our products by weight.

From a Life Cycle Assessment perspective, it is not always the case that the heaviest material or component in our products has the biggest impact on climate change.

The graph on the right shows an example of the breakdown of a Nokia product (5G remote radio unit) into its weight and respective embodied emissions. This gives us the following environmental areas to focus on: material efficiency (including weight reduction and leading to transport efficiency); higher percentage of recycled content for mechanical parts; and size minimization of integrated circuits (ICs), leading to reduced size of printed wiring boards (PWB) and a reduction in total passive components.

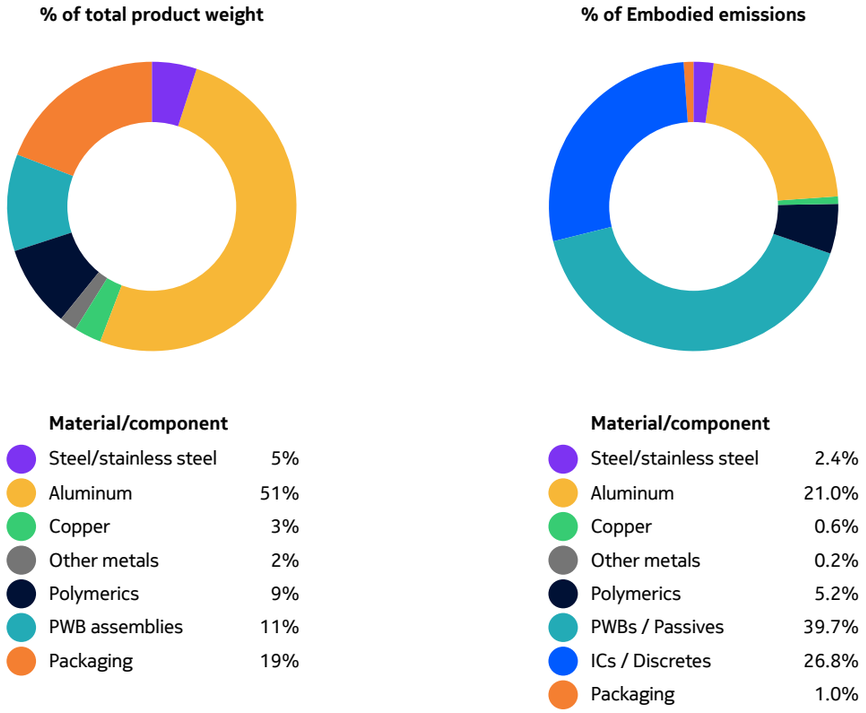
Product packaging

We have focused on reducing and eliminating plastics from our product packaging. We have explored alternative ways of using cardboard to make shock-absorbing elements and thus replace the traditional plastic foams. This has successfully been implemented in several Fixed Networks products in 2023 including the Lightspan portfolio, which has 100% recyclable packaging. Read more.

Mobile Networks is expanding its use of fiber-based cushions in the packaging of some products. The plan for existing solutions is to initially replace plastic foam packaging in high-volume products. Additionally, we are focusing on the shift from linear to circular packaging designs and sourcing to make our packaging 100% recyclable and increase the use of recycled plastic content. Such steps promote the sustainability of our packaging (increasing material circularity, reducing our CO_2 footprint and limiting resource depletion) and bring more attention to waste reduction (assigning value to waste material incentivizes innovations in plastic and recycling technology).

There are several aspects of these new packaging solutions that differ from the standard solution. The first is easier recycling for the customer – the packaging can be easily flattened and the use of one single material saves time during recycling and helps avoid any contaminants. The second is improved sustainability – for example through the reduction of oil-based materials in the packaging, less microplastics in the ocean and avoidance of plastic taxation. In addition to customer recognitions, we have won several prestigious awards (iF Design Awards and Red Dot Design Award) for our sustainable packaging design, demonstrating peer recognition.

Breakdown of main materials in Nokia products vs. embodied emissions*



* Based on a Nokia 5G Radio LCA, **Embodied emissions account all lifecycle stages but the Use phase. Distribution and End-of-Life correspond to 2.2% and 0.8% respectively.

Waste in our operations

Building on our detailed review of waste during 2023, we focused on key sites to review the facility waste management arrangements, aimed at increasing the percentage of waste that is recycled and aligned with our circularity waste target. Site closures and disposals contributed to the overall waste reduction. Improved Nokia product repair data collection from external repair suppliers in 2023 resulted in increased e-waste data reporting over 2022 data.

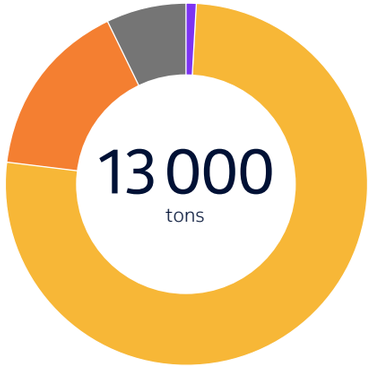
Operational waste also includes Nokia product repair waste. In 2023, our total operational waste decreased by 25% compared to 2022. We reused, recycled or recovered energy from 93% of all operational waste.

Ensuring appropriate recycling of e-waste

All electronic waste generated in our facilities and other operations, including asset recovery, can only be shipped to processing facilities that have gone through our health, safety and environmental (HSE) liability assessment. The requirements for the HSE liability assessment vary based on risk, which is dependent on waste quantity, shipment frequency, waste type/toxicity, waste treatment technology, environmental management systems, location, legal requirements and prior assessments.

Our goal is to maintain the minimum number of approved waste-processing facilities needed to meet required services and minimize environmental liability. In 2023, we completed 10 environmental health and safety liability assessments of e-waste recycling facilities located in Austria, Brazil, Hong Kong, Mexico, Poland, Saudi Arabia, Turkey and the US.

Total waste in our own operations in 2023 by treatment method



Reused	1%
Recycled	76%
Energy recovery	16%
Landfill	7%

Water in our own operations

Life Cycle Assessments show that the predominant water withdrawal value chain results from the generation of electricity used to power our products in our customers' networks. As our products consume electricity during their relatively long design lifetime, our biggest influence on water withdrawal is to reduce power consumption over the products' use time.

Water utilization within our facilities is typically associated with sanitary use, cleaning and landscaping activities. In 2023, we used 967 000 m³ of water in our facilities, a 7% increase compared to 2022. Total water withdrawal was 943 000 m³, which is less than the total water consumption, as 2.6% of the withdrawn water was recycled.

Water in our supply chain

We address supplier categories where water may be a material risk through a water assessment program which includes awareness raising, annual data collection, target setting and follow-up. In 2023, 247 of our manufacturing suppliers completed the CDP's water security questionnaire, representing 53% of our total supplier spend. Out of the participating suppliers, 80% had undertaken a water-related risk assessment for their direct operations. They identified actual water-related risks in their operations such as flooding or increased water stress or scarcity, potentially resulting in the reduction or disruption of production capacity or increased operating costs.

48% of suppliers had structured targets related to water consumption, discharge or withdrawals. Targets were mostly related to internal efficiencies rather than being contextual (e.g water basins facing challenges related to high-risk areas or shared sources of water). Our supplier water risk map relevant to our manufacturing locations is online.

Examples of how Nokia is moving towards 100% commonly recyclable packaging for its current and future portfolios.

Biodiversity

Biodiversity can be defined as the variety of animals, plants, fungi and even micro-organisms such as bacteria that make up our natural world in a particular area. Biodiversity can be considered important for every company and individual as it provides everything in nature that we need to survive: food, clean water, medicine and even shelter.

Although biodiversity is of increasing importance for our stakeholders, at Nokia we also look more broadly at our dependence on natural resources, including climate, biodiversity and geological diversity (geodiversity). By geodiversity, we mean the earth's minerals, rocks, fossils, soils, sediments, landforms, topography and hydrological features such as rivers and lakes.

While the ICT industry is not considered to be one of the high-impact sectors related to biodiversity, the story may be different for geodiversity. From a geodiversity perspective, the production of ICT hardware requires various metals, minerals, plastics and chemicals, as well as energy and water in a multi-tier supply chain.

Beyond our science-based climate targets, we have now started work to understand the impacts affecting natural capital (including biodiversity and geodiversity) across our value chain. These areas include mining raw materials and component production, final assembly production, logistics and fleet, installation and use, maintenance of sold products, and product end-of-life activities.

Biodiversity in action 2023

University co-operation

We announced a new co-funded tenure-track professorship at the University of Jyväskylä to improve biodiversity footprint assessments in companies. This activity is an important step on a broader longstanding commitment to combatting climate change and minimizing environmental impacts. For further information see our website.

UN Global Compact SBTN working group

We are part of the UN Global Compact Finland SBTN working group. Together with Ramboll Finland, the UN Global Compact developed the Science Based Targets for Nature (SBTN) program. This training program involves 15 Finnish companies from different sectors.

Nokia's nature protection area Harjasuo-Laurinkorpi, which is important for local biodiversity. More information from EU's facts sheet.

It is the first program of its kind by UN Global Compact. It started in 2023, and will continue until spring 2024.

We continued our ocean-related programs with the John Nurminen Foundation to protect the Baltic Sea, and continued our technology support of The Ocean Cleanup, an international non-profit project.

Nature protection

We established two new conservation areas in 2023. The major addition to our protected sites is Kitkajoki-Arvunki, covering approximately 71 hectares (ha) in Kuusamo. A smaller 14 ha area has been protected in Siuntio, Southern Finland.

The Kitkajoki-Arvunki conservation area is more substantial in size than it might appear, as it combines with our previously established Harjasuo-Laurinkorpi conservation area. The combined area is now 103 ha.

The newly established conservation area boasts approximately 1.5 km of Kitkajoki riverbank, which is aesthetically valuable ridge forest in this area. In the middle of the conservation area lies Lake Arvunki, and a couple of pristine streams flow through the area. The forests in the area have been excluded from economic use for decades.

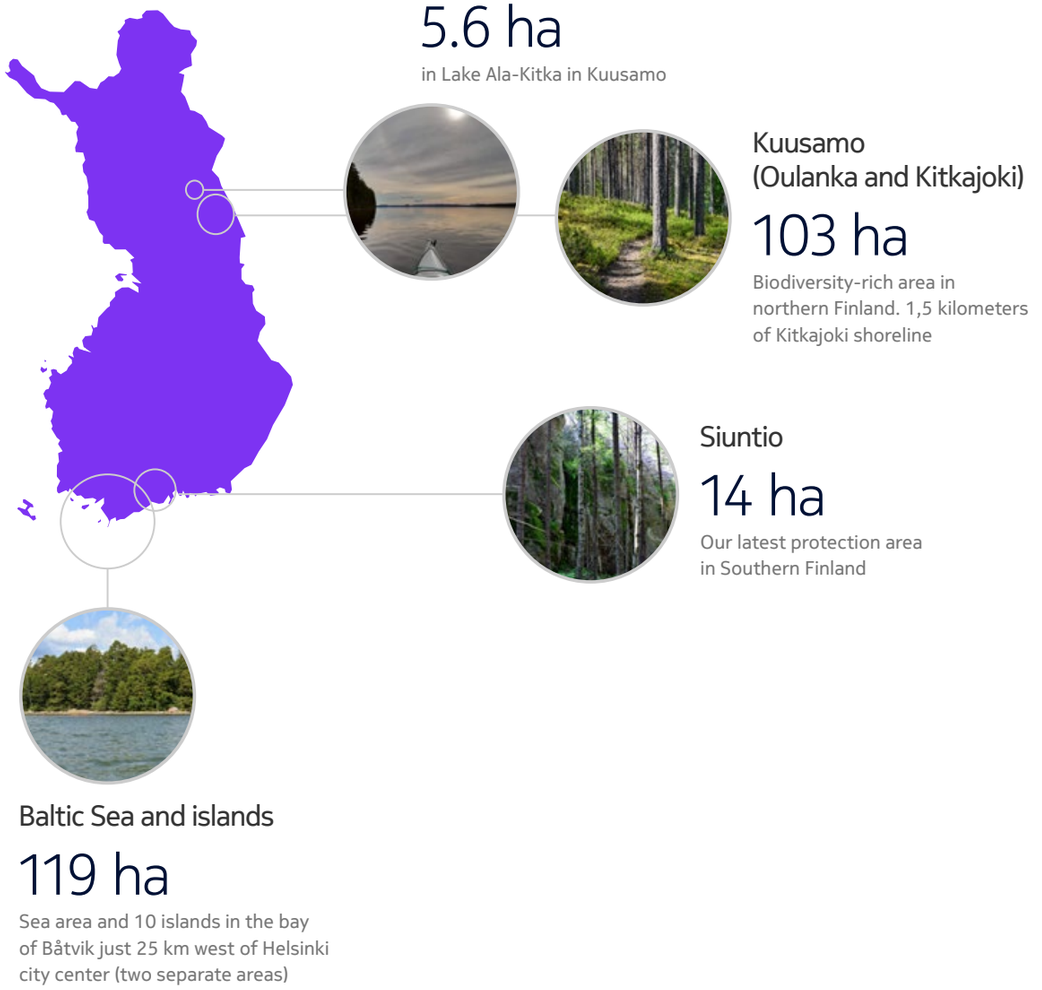
The Siuntio area is a mosaic of rocky and heath forests, enriched by cliffs and small groves providing an authentic representation of southern Finland's diverse and captivating natural landscape.

In 2023, our total protected area expanded to 242 ha, comprising 131 ha of forested areas, 11 islands and 111 ha of marine environments.

The oceans and seas are also linked to Nokia's business. Nokia's Alcatel Submarine Networks (ASN) develops and installs the subsea optical fiber networks that connect the world. ASN's aim is to do this in a responsible and sustainable way.

In November 2022, ASN was the first private company to join the Ocean Decade Corporate Data Group. This initiative, led by the Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO), is aiming to accelerate our understanding of the ocean, its biodiversity and its geophysics parameters to help in its preservation. The IOC promotes international cooperation in marine sciences to improve the management of the ocean, coasts and marine resources.

Protected areas, hectares (ha)



Cooperation in standardization

We participate in the activities of standards-developing organizations and industry groups for digitalization and sustainability, both access-agnostic and those related to 5G and 6G. We collaborate with other companies and actively participate in many standardization forums to develop standards for topics such as energy-efficient telecommunications networks, circular telecommunications products, responsible use of AI. And we participate in industry groups to develop standards across range of topics.

Our work in the International Telecommunications Union (ITU) includes actively contributing to the standardization work in the Telecommunications Sector (ITU-T) and the Radiocommunications Sector (ITU-R) as well as to the regional preparatory meetings of the Development Sector (ITU-D). We provide transparent direction, guidance, and assessment methods for the development and enforcement of the regulation related to topics such as sustainable development, spectrum management and cybersecurity.

In 2023, Nokia was the most active contributor on circularity-related standardization topics in ITU-T. For example, we contributed to an ITU-T product circularity standard by adding infrastructure-relevant circularity indicators, such as robustness, recycled metal content, metal recycling, packaging recycling, and recycled content in packaging. This ITU-T L.1023 standard was published in August.

Sustainability is the cornerstone for 6G system design. During 2023, we gave presentations on sustainable 6G and 6G for sustainability, e.g.,at the Berlin 6G Conference, the EuCNC (European Conference on Networks and Communications) 6G Summit in Gothenburg, and the TTDD (Telecomunications Standard Development Society India (TSDSI) Technical Deep Dive) conference “6G Horizons: Converging Technologies for a Connected Society."

Industrial digitalization

Digitalization and enhanced connectivity are a critical part of the solution to decarbonizing and dematerializing physical industries that significantly contribute to global carbon emissions. This is our handprint – it represents the enablement effect of the technology solutions we provide. We aim to maximize this handprint, as it provides our greatest potential impact on climate change.

In the energy sector, digitalization will support both renewables generation and grid transformation, with the aim of allowing the sector to move faster in the transition to sustainable energy sources. Technologies such as digital twins, low-latency connectivity, analytics and AI can help hard-to-abate sectors find ways to accelerate sustainability efforts. Digitalization can play a role in supporting all industries on their decarbonization journey.

The digital proposition

We provide solutions for industries and cities that not only enable decarbonization but can also improve productivity, resource efficiency and safety. Nokia is a founding member of the European Green Digital Coalition, where we have contributed to defining measurement methodologies to show the positive environmental impact of digital solutions on different industrial sectors and communities. In 2023, Nokia worked with city officials from Nicosia in Cyprus to provide Nokia's Integrated Operations Center for a smart city case study to support the coalition's work.

Manufacturing

We believe that connected smart factories hold the key to the manufacturing industry reducing its emissions. To make such Industry 4.0 goals a reality, digitalization is the key. Nokia offers the critical communications and cloud network foundation that companies need to fuel their digital transformation journey, offering advanced data communication and networking solutions that support critical operations. With a modernized communications foundation, companies can increase productivity, agility, and flexibility, and improve supply chain resilience and visibility throughout their operations. With intelligent automation, data center optimization and physical–digital fusion in their operations, companies can take advantage of new efficiencies to achieve their sustainability targets.

One customer example is Flex, a multinational electronics manufacturing company with operations in 30 countries. Flex designs and builds products for a broad range of industries including automotive, cloud computing, communications, consumer and healthcare. Nokia is deploying a 5G stand-alone private wireless network in Flex's Brazil manufacturing facilities. Initial use cases will focus on increasing wireless applications and exploring the potential of 5G for reliable connectivity, massive transfers of operational data and greater layout flexibility on the shop floor.

In the US, Nokia has worked with system integrator Kyndryl to provide industrial-grade LTE private wireless networks to Chevron Phillips Chemical for eight of

its US facilities, including their Woodlands, Texas, headquarters. Nokia provides connectivity to workers across multiple sites to aid real-time collaboration, as well as the connection, monitoring and management of machines.

Our own plant in Oulu, Finland, is our main radio factory. It is a fully digitalized factory, recognized as a World Economic Forum "Lighthouse." It continues to provide an example of the positive impact that digitalization can bring.

Our Oulu factory incorporates all 5G+ technologies to drive machining and assembly using robotics; autonomous transportation through mobile robots; advanced quality control methods, including video analytics; and maintenance schedules driven by augmented intelligence/machine learning recommendations based on real-time asset condition data.

The factory is already operating on its 2025 energy target of 100% renewable electricity from renewable district heating across its operations, and its waste utilization rate also stands at 100%. This makes it the first Nokia-owned facility operating on 100% renewable energy.

Transportation

According to the International Energy Agency, rail transports around 7% of global passenger kilometers and 6% of ton kilometers but accounts for only around 1% of transport emissions. Urban rail networks such as metro and light rail tend to have significantly lower emissions than other motorized urban transport modes. Countries around the world are planning rail expansion as an important means to help reduce overall transport emissions. Many rail operators are investing in digitalization and automation to improve efficiency and services to make rail more appealing to travelers. The Future Railway Mobile Communication System (FRMCS) will be a key enabler of rail digitalization and of new technology such as automatic train operation to help reduce energy consumption.

Nokia has been at the forefront of FRMCS, working with the industry, government regulators, rail operators and standardization bodies to develop FRMCS standards. Nokia's mission-critical networking solutions support the latest rail applications with advanced technologies including 5G, IP/MPLS, data center fabric, optical and cybersecurity. In 2023, we announced our involvement in rail projects with companies such as Adif, the Public Transport Authority of Western Australia and Société du Grand Paris.

In aviation, air navigation service providers are modernizing their communications, navigation and surveillance/air traffic control communications networks while maintaining safety, security, reliability and service continuity. Nokia's IP/MPLS-based ground-to-ground network solution provides the performance needed for demanding mission-critical services and next-generation air traffic management communications. This helps optimize routes and fuel consumption, as well as reduce emissions.

For example, Nokia has provided solutions to the Irish Aviation Authority and the Airport Authority Hong Kong. Airports are investing in Airport 4.0 to achieve operational excellence and provide the best and safest possible travel experience. Minimizing turnaround times helps save energy and fuel usage. As the journey toward Airport 4.0 continues, the importance of connectivity grows. Nokia's private wireless solution creates the wireless foundation for Airport 4.0 by making it simpler to embrace more process digitalization, and our optical LAN significantly reduces power consumption. Changi Airport and Brussels Airport have deployed these Nokia solutions in their Airport 4.0 journey.

Shipping is the backbone of the world's trade, and 80% of all goods are carried by sea. In recent years, port terminal operators have been under growing pressure to increase productivity as the volume of shipping trade increases. At the same time, they must ensure worker safety in highly congested yards and meet ambitious sustainability goals to reduce the environmental impact of their operations. Nokia provides the industrial-grade private 4G LTE/5G connectivity to connect yard assets, workers, vehicles, cranes and containers integral to existing Wi-Fi infrastructure; an edge computing platform to support advanced use cases such as drone inspection; autonomous cranes and video analytics; ruggedized devices that work seamlessly on the same cellular network; and an application catalog to accelerate app deployment in just a click.

Nokia is the leader in port terminal digitalization, with success at the Husky Terminal of the Port of Tacoma, the Port of Seattle, Kingston Freeport, the Port of Kokkola, the Port of Southampton, the Port of Hamburg and Sociedad Portuaria Puerto Bahía.

Energy and natural resources

2023 marked a significant year for Nokia in championing digitalization in energy management. As global energy consumption continues to rise, our focus on empowering renewable energy sources like wind and solar through private LTE/5G communication networks has been more critical than ever.

Our solutions have been instrumental in mitigating the downsides of fossil fuel–based energy generation, aligning with aggressive zero-emission targets and environmental regulations for a sustainable future. According to the International Energy Agency, current infrastructure practices, if unchanged, could lead to a significant temperature rise, underscoring the need for our interventions.

The drive for renewable energy has been underscored by the growth in distributed energy resources (DERs), from consumer solar and wind adoption to large utility-scale sources. WindEurope's estimate that half of Europe's electricity will be wind-generated by 2050 reflects the trajectory Nokia is supporting through our technology and expertise.

Our high-performance wireless broadband networks, especially in the context of renewable energy installations like wind farms, have been pivotal for global ESG goals. These networks enhance worker safety, collaboration and productivity, and unlock operational benefits of Industry 4.0 automation and predictive maintenance. The private wireless solutions provided by Nokia for wind farms, for example, ensure mission-critical reliability and low-latency broadband connectivity, essential for connecting workers, sensors, cameras and turbines in challenging environments.

In 2023, Nokia further advanced in embracing Industry 4.0 for optimizing wind farm operations. The incorporation of IEC 61850 standards in our mission-

critical WAN solutions for power utilities highlights our commitment to sustainable and efficient energy management. This standard facilitates effective communication within electrical substations and across distributed energy resources (DERs), enhancing the overall efficiency and reliability of power systems.

As we look toward the future, Nokia remains committed to leveraging our expertise in private wireless solutions and digitalization to drive the renewable energy sector forward. Our focus on sustainability, combined with technological innovation, positions us to play a crucial role in the global transition to a more sustainable, productive and accessible energy future.

Mining

Mining sustainability is an evolving concept that reflects the industry's commitment to balancing economic goals with environmental and social responsibilities. Mining companies must increasingly integrate sustainable practices into their operations.

Mining operations can exert substantial environmental impacts, including habitat disruption, pollution and deforestation. These consequences may pose serious threats to biodiversity and overall ecosystem health. Therefore, adopting sustainability practices within the mining industry is crucial.

Better mining processes that recycle waste and use less water, land and energy, along with investments in automation, electrification and digitization, can lead mining businesses toward a more sustainable business model. Industrial automation can not only mitigate productivity bottlenecks and optimize operational processes but also reduce waste. Remote and autonomous operation can increase asset utilization, maximize operating hours and lower fuel consumption. Furthermore, the implementation of electrification is expected to contribute to the reduction of GHG emissions. The execution of predictive maintenance strategies provides the potential for minimizing the occurrence of equipment and vehicle downtime. Finally, recycling and reuse are seen as vital components of the energy transition equation. The paramount consideration in pursuing sustainability in mining is the proactive management of social and environmental impacts.

In 2023, Nokia continued engaging with mining companies on digitalization, implementing private wireless networks based on private LTE and 5G in collaboration with several mining operators and ecosystem partners worldwide. Our networks are being tested, trialed and run at over 70 mine sites across all continents by over 40 mining corporations.

Connected territories and public safety

Connecting territories remains a priority for many governments – be it to bridge the digital divide and provide underserved populations with essential broadband access to connect to the digital world, or to improve the reach, scale and quality of public services delivered by public agencies.

In a rural part of Austria, our customer RegioHELP, a newly created service provider, deployed an open network to provide ultra high-speed fiber access to more than 20 cities through a public–private partnership. This has helped attract new companies to the region.

In 2023, we also contracted with Toulouse Métropole, a public institution for inter-municipal cooperation, to bring together 37 municipalities around Toulouse (France's fourth most populated city) for the joint planning and development of projects to deploy a private 5G network. This network will serve the needs of the city's public agencies to further digitalize their services and improve emergency public safety services during big events as well as the public transport network. The network will also be used to improve connectivity in underserved public buildings for environmental monitoring and to support innovation in industrial and university campuses.

We remain actively engaged with the public safety community to drive the adoption of modern broadband mission-critical networks and services to drive first responders' operational efficiency in even the most critical situations. In 2023, we announced the world-first deployment of a drone network for public safety that will cover most of Belgium's territory. Our customer Citymesh is going to deploy more than 70 Nokia drones, with their docking stations, across Belgium. In case of emergency, they will be able to very quickly take off and go to the site of the emergency to provide emergency services with a live video stream. This will greatly improve the city's situational awareness, with better-informed first responders dispatched to the site.

Private wireless

Most assets in industrial plants are largely unconnected, which proves a key challenge to the industrial transformation that will yield improved efficiency, flexibility, safety and sustainability. Private wireless, operating with 4.9G/LTE or 5G, brings an easy way to connect all assets (machines, sensors and people) with pervasive yet reliable coverage. The implementation of private wireless enables new use cases that can reduce the impact on industries.

A port operator in Finland reports that after automating the port with sensors and video cameras for analytics, available parking slots can be estimated well in advance, avoiding the need for vessels to wait off the coast and consume fuel.

In discrete manufacturing, a manufacturing plant in Turkey explains that by replacing Wi-Fi with private wireless, fewer failures occur, and automated guided vehicles can operate at higher speeds, allowing for a 25% improvement in process efficiency, ultimately reducing energy consumption for the same level of production.

In Australia, autonomous trucks now connect to private wireless, saving 7% in fuel costs per truck due to fewer connectivity issues compared to Wi-Fi.

Private wireless is also a means to replace existing fixed connectivity, eliminating the need for Ethernet cables, for example. Simple calculations reveal that if all assets were connected via LAN cables, we would require 1.6 tons of cables to be deployed in a medium-sized factory.

3GPP 4G and 5G technologies also bring huge benefits versus other wireless technologies such as Wi-Fi. One is that the number of access points needed for coverage is drastically lower compared to Wi-Fi 6 for the same area. In the case of a medium-sized factory (around 1.5 km²), power consumption in private wireless networks is estimated to be 84% less than in equivalent Wi-Fi 6 networks and even more in the case of wireless legacy networks (more than 90%).

Today, Nokia is considered the leader in private wireless based on its more than 710 customers globally. In 2023, we acquired more than 120 new customers, helping industrials accelerate their digital transformation to create more efficient processes and empower workers for high-quality output.

New 2023 wins include Husky Terminal and xCell Energy in the US, Puerto Bahía in Colombia, San Sebastián Airport in Spain, ESB Networks in Ireland, John Deere in Brazil and Valmet in Finland. And most of those deals have a sustainable strategy aspect beyond efficiency and productivity.

Nokia also offers a range of industrial devices to connect legacy machines and equip workers. In 2023, Nokia launched new 5G handhelds enabling, for example, manufacturing sites to go paperless. We also worked with our partner Kyndryl to make Dow Chemical Company a paperless site by deploying the Nokia Digital Automation Cloud.

Since 2021, our private wireless solution has integrated an ecosystem-neutral operational technology (OT)-centric edge called Mission Critical Industrial Edge (MXIE). This allows the on-site real-time processing of OT industrial data such as video and sensors to facilitate optimal decision making.

In 2023, we also expanded our set of third-party industrial edge applications to accelerate enterprises' transition to Industry 4.0. This ecosystem-neutral approach means enterprises can choose best-of-breed applications such as connectivity, video analytics, IIoT, digital twins, communications, connected workers and drones, industrial and cloud connectivity and much more. Such industrial use cases best improve efficiency, worker safety and sustainability in our customers' operations.

Private wireless solutions are also being used for specific projects such as The Ocean Cleanup to rid the oceans of plastic. Nokia's private wireless solutions enable applications such as high-end video connectivity over 4G technology, to help navigate The Ocean Cleanup's operations while harvesting plastic in the Great Pacific Garbage Patch.

Enabling sustainable innovation

Our long-standing commitment to innovation enables our customers to deliver extraordinary, transformative experiences. Working alongside our customers across industries and around the world, we build future technologies to help make Industry 4.0 a reality and enhance almost every aspect of life.

We create value with intellectual property and long-term research, led by the award-winning Nokia Bell Labs, which is known for its profound influence on the evolution of communications and information technologies. 2023 saw several sustainability innovation and research highlights.

6G research leadership

It is expected that every single improvement in network connectivity that 5G will bring to the end user will be further enhanced with 6G. Whether we talk about smart cities, farms, factories or robotics, 6G will take it to the next level while targeting lower energy consumption. This leveling up will be partly facilitated by energy saving features in 5G-Advanced, the next standard enhancements for 5G. 6G will come with improved efficiency (spectral and energy), extended capabilities and improved user experience.

Nokia has been the forerunner in defining the fundamental technologies for the 5G era and beyond. Nokia is engaging with major industry peers, customers, academia and research institutions globally to form a common view and direction for 6G, which is expected to be commercialized by 2030. Our current key engagements span the US, Europe and Asia-Pacific. In Europe, for example, Nokia leads Hexa-X I and II, the European Commission's 6G flagship initiative. In addition, Nokia is also a founding member of the Next G Alliance, an initiative to advance North American mobile technology leadership.

Energy efficiency goals for 6G

The 6G era is still under research but sustainability will be one of the main factors in how networks are designed and built. As much as industry performance optimization will still be a priority for 6G, the environmental impact of our communications will become equally important.

At Nokia, we believe that the main 6G target is to cut the average power consumption of 6G networks in half compared to 5G, while still supporting peak capacities 10 times higher than today's 5G networks.

The chart on the next page illustrates the proposed key differences in energy efficiency between the two generations under all load conditions.

Starting from the left of the chart, we envision a 6G RAN that consumes practically no electricity when no users are connected. Moving toward the right of the chart, we find that at every capacity level achieved by 5G, the 6G network would support the same number of users or overall capacity at much lower power,

making it vastly more efficient in watts per gigabit. Achieving these energy efficiency gains will require new technologies in every aspect of the RAN, from the power amplifier and antenna design to the processing architecture, algorithms and overall network topology. Networks are not monolithic entities in the way they consume power. As demands on the network increase, electricity demands shift to different elements, meaning we need to find holistic solutions to achieve our aggressive energy efficiency targets. A Nokia Bell Labs white paper and a new magazine paper on design goals and directions details the specific technologies we are researching that will minimize energy consumption as network conditions change.

Improving 6G cell sites

While 6G will usher in new opportunities for energy efficiency, there is far more to sustainability than tamping down power consumption. To create truly sustainable networks in the 6G era, we need to look at the environmental impacts of every aspect of 6G systems.

Nokia Bell Labs is researching multiple sustainable technologies that could make the cell site of the future less impactful on the environment. We are investigating whether greater numbers of base stations can be self-powering through renewable energy sources such as solar panels.

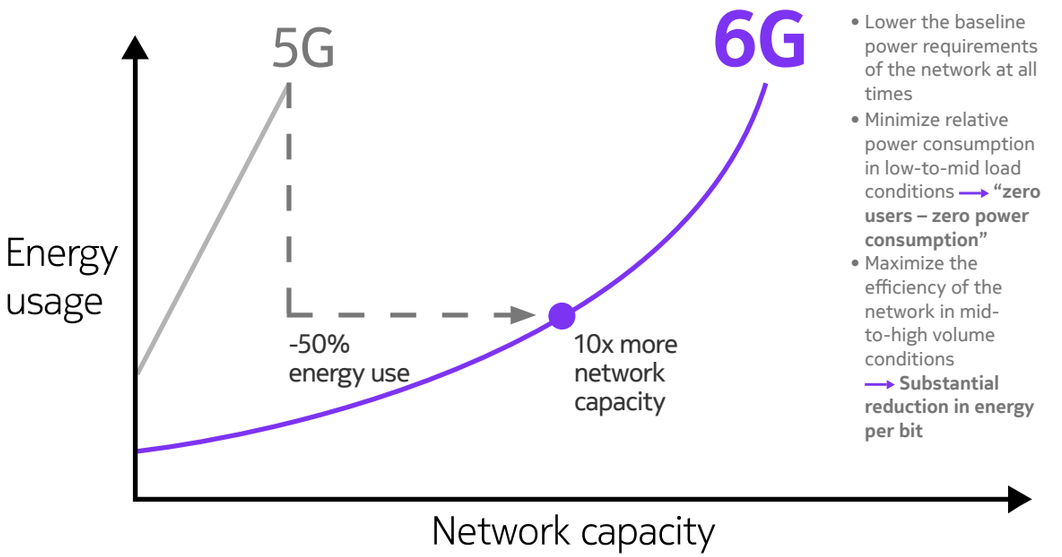
Nokia has set the ambitious target of cutting its GHG emissions in half by 2030, joining a global effort to limit the global temperature rise to 1.5°C. Building more energy-efficient and sustainable networks has long been a goal of the mobile industry, but that goal has usually taken a backseat to building high-performance networks. In the 6G era, Nokia aims to do both.

Safety and adaptation research

With the frequency of unusual natural events growing along with the potential cost of damage, remote environmental monitoring is about creating the earliest possible natural disaster warning. Wildfire detection, analysis and notification/warning are a good example of where technology can play a critical role.

Nokia Bell Labs has carried out research into early warning solutions to better predict and prevent natural disasters. The research brings together intelligent sensing, network connectivity, and cloud analytics to take advantage of digital intelligence to create effective early warning solutions designed to make communities around the world smarter and safer. Our Remote Environmental Monitoring system is a universal multi-modal sensing device platform supported by a comprehensive end-to-end analytics solution. It is designed to monitor outdoor environmental conditions such as particulate matter, volatile organic compounds, heat, moisture, air quality, carbon dioxide, carbon monoxide and more.

Network energy efficiency



Our people

Our people represent the essence of who we are as a company. Nokia people grow and develop continuously in an open, fearless and empowered culture – a culture that is inclusive and diverse, that creates trust and respect, and that enables our people to deliver company business priorities in a responsible way. In 2023, we have established our new people vision: to create an unbeatable people experience.

Our employees at the end of 2023

Of the 84 549 Nokia employees worldwide, 23% were women, with 157 different nationalities working at the company. The average age of our employees was 42. The top 10 countries by employee number were (in alphabetical order) Canada, China, Finland, France, Germany, Hungary, India, Poland, Portugal and the United States.

Our regional structure by numbers is Asia-Pacific 21 896, China 9 822, Finland 6 938, Latin America 2 838, the Middle East and Africa 3 116, North America 9 815, and Other European Countries 30 124.

We outsource certain non-core activities and use subcontractors to meet customer needs or volume demands. At the end of 2023, the number of temporary workers (external temporary labor, ETL) used was around 2 825 people. Activities performed by externals, be they ETL or subcontractors, include for example consultants supporting different tasks in our business groups and support functions, facility service providers, security guards and IT support.

Total number of employees

84 549

23%
of our employees were women

157
different nationatilities worked at Nokia

42
was the average age of our employees

Our culture

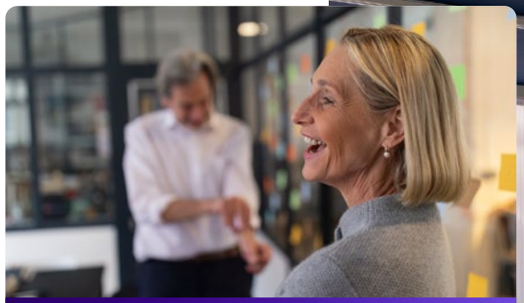
At Nokia, we care about our people. We aim to hire and retain the best talent and provide a work environment where each person can thrive. Our culture is guided by our essentials. It is through our people and culture that we create technology that helps the world act together.

Our culture is key to why our customers and partners choose to work with us. Integrity and trust are fundamental ingredients of how we work and what we provide as trusted partners. We work relentlessly to earn and sustain the long-term relationships we have with our customers and partners.

Progress and uptake of our essentials

Across 2023, we continued to run a monthly pulse survey across Nokia business groups and functions. The core questions focused on the Nokia essentials, asking whether employees felt they could speak openly, challenge the status quo, and felt empowered to overcome any challenge. The aim was to determine how well Open, Fearless and Empowered behaviors were present in Nokia.

At the end of 2023, 81% of respondents agreed they could speak openly, 77% of respondents perceived that they can challenge the status quo, and 70% felt empowered to overcome challenges.



Our essentials

OPEN

I am open in mindset: to opportunity, to the future and evolving market needs, to new approaches, and collaboration.

FEARLESS

I am fearless and bring my authentic self to work, sharing my ideas and opinions and knowing that mistakes are OK as long as we can learn from them.

EMPOWERED

I am empowered and supported to make decisions and own my work because I am trusted and I trust my colleagues, who have my back in success or failure.

People development

It remains critical to identify, develop and retain skilled employees in our business. We therefore continually develop our culture and refresh our talent management, performance support and career development activities.

Talent and performance management

Nokia people managers are encouraged to hold quarterly discussions with their employees, which we call "1 in 90 Dialogs" and which focus on five key areas: goals, feedback, well-being, development and coaching. In 2023, employees and people managers were encouraged to focus on feedback (giving and receiving), well-being topics (work-life balance, mental health, available support) and resources available to report ethics and compliance concerns, fostering a speak-up culture.

Annual development reviews are available to all employees. We encourage managers to recognize performance, celebrate achievement, discuss career aspirations, and plan for the employee's development in the coming year.

Future talent growth

We provide growth opportunities that allow targeted development at the company level and business group level focusing on critical skills, stretch assignments and exposure. Business groups and functions have unit/function-specific initiatives in place to address their strategic talent needs. On a global level, future talent growth contains two main elements: executive succession planning and contributing to the CEO Advisory Board.

Our Technical Career Path program introduced extensive mentor and coach directories for our talents to leverage in their career planning and progression. We also launched two new, future-critical roles (Security Specialist and IPR Portfolio Manager (Patent Attorney)), and elevated AI-driven, personalized employee growth features and capabilities.

Executive succession

In 2023, we initiated the alignment of our executive-level succession plans with the refreshed strategic direction of Nokia, and are refreshing our succession management process from the top down.

CEO advisory

The CEO Advisory Board pilot, launched in late 2021, was concluded in 2023. The board consists of up-and-coming leaders, selected to provide candid, real-world advice to the CEO. This program has three main objectives:

- Bring novel ideas to the CEO
- Bring the needs of the company closer to the Group Leadership Team and the CEO
- Provide growth opportunities for the program participants.

During the two-year journey, the board proposed and implemented improvements in the areas of digitalization, go-to market and talent attraction and retention practices within Nokia, and provided novel ideas to be considered in the future.

Competence development

Our competence development activities focus on leadership, business-critical and technical skills for current and future needs. We offer learning solutions to our customers, partners and employees. In 2023, we recorded a total of 4 million learning hours for our employees consisting of 2.1 million training hours and 1.9 million sharing hours. The average number of all training hours was 45 hours per employee, an increase of 12% compared to 2022.

In 2023, customer and partner training totaled 509 000 training hours, a decrease of 14% compared to 2022.

To reinforce a culture of learning, we provide our employees with a tool called the Learning Index. The

Our people development focus includes three main pillars:

1. Talent and performance management, which covers regular dialog, guided discussion, recognition and feedback as well as career aspirations, among other activities.
2. Future talent growth, which includes business group talent initiatives (covering specific skills development and special assignments), executive succession and CEO advisory.
3. Competence development, which includes leadership development and assessment, and business-critical and technical competence development and related learning offerings.

Learning Index enables employees to monitor their commitment to continuous learning and information sharing. In 2023, the tool had 87 300 users.

Overall, our learning solutions received a user satisfaction score of 98% in 2023. Virtual instructor-led training accounted for 15% of all training, compared to 25% in 2022.

In 2023, the data gathering methodology was revised and this affects the 2022 data parameters leading to data updates. In this report the 2023 data is compared to revised 2022 data.

Leadership development

In 2023, we continued to invest in our leaders at all levels through instructor-led programs and online platforms including branded solutions from Harvard ManageMentor and Harvard Spark. This year, 7 597 employees used these two leadership training solutions. Additionally, our employees completed 59 651 self-paced leadership online solutions and achieved 3 992 badges. Efforts were continued to support middle managers with a specific training program, Leadership for Impact, where 12 sessions with 256 participants were delivered in the second half 2023. Overall, 2 215 individuals attended our corporate leadership instructor-led development programs in 2023.

The key workshop themes covered in 2023 were collaborative leadership, career and development, well-being, resilience, team coaching and team cohesion.

We continued to strengthen the leader community by launching our “Leader Lab series,”. The program supports leadership at Nokia on the most critical, real-time challenges they face and provides development and a library of tools they can quickly and easily embed into the flow of work. The first session in October focused on leading through change, with 10 sessions attended by 1 176 participants.

We helped leaders and leadership teams with assessment tools including the Korn Ferry 360° feedback and insights profiles. In 2023, 103 personal Korn Ferry 360° feedback assessments were completed, and 594 new insights profiles were provided to our employees.

Keeping pace with technology and ESG

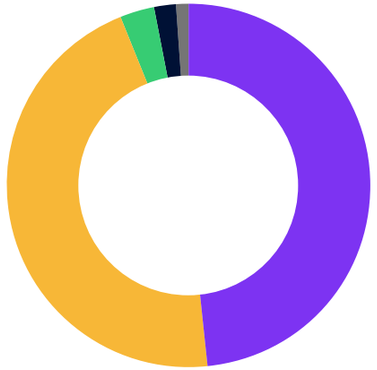
In 2023, we launched the new NokiaME tool, not only to simplify HR’s key global process and tool landscape but also to indicate a first step towards a modernized digital experience suitable for a global workforce.

Our customers and employees require new and diverse skills and competencies to thrive in today’s environment. To address these needs, we offer a full spectrum of technical training both internally and externally via multiple delivery methods including web-based, instructor-led, virtual instructor-led and blended learning.

Our industry-recognized certification programs, including the Nokia Bell Labs 5G Certification, are targeted at building technical expertise and improving professional standing

As part of our ESG enablement, we have launched an ESG Community of Interest that provides regular training sessions, best practice sharing and awareness building to key regional and business group representatives.

Employee learning hours by type of learning in 2023



Technical & product training	49%
Non-technical training	46%
Leadership training	3%
Health, safety & security training	2%
Sales & marketing training	1%

Fair workplace and our policies

We uphold high standards of ethics and human rights in our own activities and aim to treat all our employees and other stakeholders in accordance with internationally recognized ethical and responsible business practices and relevant legislation.

We follow and, where possible, strive to exceed the standards set out by local labor laws and regulations. We publish our employment policies and guidelines on our intranet.

Our Code of Conduct, our Global People Framework, our Human Rights Policy and local employment laws, policies and practices are the basis for our labor conditions. We are committed to the principles laid out in the United Nations Universal Declaration of Human Rights, the United Nations Global Compact and the International Labor Organization's Declaration of Fundamental Principles and Rights at Work. We follow and, where possible, strive to exceed the standards set out by local labor laws and regulations.

Our policies, Standard Operating Procedures (SOPs) and Code of Conduct apply to our employees and suppliers. Our policies cover zero tolerance for child and forced labor, freedom of association and collective bargaining, non-discrimination, humane treatment, working time, disciplinary practices, compensation, and occupational health and safety.

Zero tolerance for child and forced labor

We have zero tolerance and strictly forbid any form of child labor and all forms of forced, bonded or imprisoned labor in both our own operations and our supply chain. The identity and age of candidates are checked at hiring to ensure that the terms and conditions of employment are in accordance with local legislation as well as with internationally accepted labor standards. Proof of identity and age are part of minimum vetting standards.

Freedom of association and collective bargaining

We respect the right to collective bargaining and freedom of association. Collective bargaining agreements are local, and in most countries where we have collective bargaining agreements, employees who have chosen not to be members of a union are also covered by similar terms. Employees can choose freely to join, not join or leave unions and associations and select their representatives based on local and international practices. We encourage active and open communication with employees and/or their representatives.

In countries and regions where works councils operate, we work with them as needed. We communicate regularly with employees directly as well as with their representatives in meetings such as the European Works Councils (EWCs).

Employee representatives are entitled to participate in training necessary to carrying out employee representative duties and to increasing their awareness of trade union rights and obligations. Additionally, employee representatives can use company infrastructure during the workday.

Non-discrimination and humane treatment

Integrity and respect are integral to our essentials of being Open, Fearless and Empowered. We respect all individuals regardless of age, disability, gender identity, characteristics or expression, marital or civil partnership status, pregnancy or parental status, race, religion or belief, sex, sexual orientation or any other characteristic protected by law. Bullying, harassment, discrimination and retaliation, in any form, are prohibited.

Working time

We do not permit our people to work more than is legally allowed. We define regular working hours in accordance with local laws. Young workers from 15 to 18 years old (or as specified by local legislation) are not permitted to carry out work that may be hazardous, unsafe or unhealthy. Such workers are not allowed to work night shifts and have a maximum daily working time of eight hours. We provide guidance through our Worktime SOP and guarantee a minimum one day off in every seven days in our production operations.

Disciplinary practices

Our global Disciplinary SOP helps ensure consistent and fair treatment for all employees. Where local law or collective agreements differ from the SOP, we deviate from the global SOP only as far as necessary to ensure compliance with the same.

Compensation and benefits

Our compensation and benefits programs contribute to our business success by balancing market

competitiveness and affordability based on a total compensation approach. These are performance-driven (both on an individual and company basis), flexible and fair. The key elements of our compensation structures are annual base salaries, incentive/bonus programs, recognition programs and equity-based long-term incentives.

Pay practices are regularly reviewed to align pay with performance, experience, and the skills required for every position. We pay at least the minimum wage, comply with all legal requirements for wages and at minimum provide any legally or contractually required benefits. Nokia policy is that part-time or temporary employees have access to employee benefit plans. We have an employee reward and recognition program, Recognize Excellence, which allows employees and managers to recognize individual performance and acknowledge the contribution of colleagues.

In 2019, we analyzed the gender equality of our compensation practices and funded additional, focused salary increases to remediate unexplained gender pay gaps. After the first investment to close the pay gap in 2019, we have annually repeated this analysis to ensure any reopening of that pay gap is identified and remediated.

We consistently investigate our policies and practices to discover and address decisions, practices and processes that might threaten a segment of our population unfairly.

While we do not disclose global salary ratios, we are committed to equal pay for work that is of equal value (skill, responsibility, etc.). This is applied without regard for an individual's personal characteristics such as gender, race, age, national origin, ethnicity, color, religion, sexual orientation, gender identity, gender characteristics or expression, disability, or entitlement to family leave.

Occupational health and safety

We are passionate about making sure that everyone who works for or on behalf of Nokia goes home safely at the end of the day. We earn the respect of each other, our contractors, our partners, our customers and members of the public by providing a safe, healthy and fair working environment. We do this through the robust and consistent implementation of our internal processes – processes that meet or exceed applicable regulatory requirements. We also expect the same from our contractors and suppliers.

Share in Success

We continued our voluntary employee share purchase program called Share in Success in 2023. Participating employees are given one free Nokia share for every two shares they purchase and continue to hold for 12 months. We aim to invite as many employees as possible to participate in our Share in Success program, subject to local laws and regulations. In 2023, employees in 74 jurisdictions were invited to enroll in the program and the overall participation rate was 36%.

Recruitment

We treat all candidates fairly and with respect through a consistent recruitment process globally. As part of this approach, we encourage and support personal development for every employee, as evident by the more than 6 000 internal people who have moved into new roles. This means that out of all our open positions, 40% were filled by internal candidates.

In 2023, we maintained our strong rating of 4.1 on Glassdoor on a scale from 1 to 5. This rating positions us as an employer of choice in the market. Glassdoor is a global website where current and former employees can anonymously review companies. For Nokia, 84% of the reviews indicated that our employees would recommend us to their friends. Culture and values, diversity and inclusion, and work-life balance were evaluated as our three main strengths, with scores between 4.2 and 4.3. Learn more here.

More information on recruitment and careers can be found at www.nokia.com/careers. Or visit us on LinkedIn, Instagram, YouTube and Facebook.

Early careers

We support youth employment through our global traineeship programs, and in 2023, we hired just under 3 500 trainees. We participate in special programs around the globe with a focus on diversity. Under such programs, Nokia experts and academic scholars work together to prepare students for employment in the industry, improving their technical skills and giving them hands-on learning opportunities.

For example, Girls for Girls is a cyclical project created in Wrocław for women interested in the IT industry. It encourages women to learn programming, new technologies and telecommunications.

In India, we hosted University Day at Nokia and engaged students and faculty members from various colleges through leadership talks and skills- and career-development sessions that included hands-on project-based learning and lab and factory visits.

Retaining our early career talent is also very important to Nokia. In 2023, we expanded our very successful New Professionals Program, which all our new graduate hires are automatically enrolled in upon hire for the first year of employment, from the North America region to all regions globally. This program acts as a community for them to professionally grow together, connect, engage, interact and learn more about Nokia in the hope that they choose to stay with the company long term.

Providing support during transformation

The business environment in which we operate is highly competitive. To reach our strategic goals and deliver against our commitment means we have needed to reduce the number of Nokia employees. These reductions are never easy. Throughout the process, we have made it a priority to provide support for those impacted employees and treat them with the utmost dignity and respect.

We have put in place extensive measures to limit the impact of transformation plans such as:

- We offer affected employees continued training opportunities to maintain and develop their skills and competencies to meet the anticipated changes in business, markets and the technology environment in which we operate
- We support and encourage redeployment activities for affected employees to find new job opportunities in the company, including retraining as necessary and as appropriate
- We offer severance packages to exited employees that are often packages of greater value than what is available under local laws
- We offer career counseling and job search support outside the company.

Inclusion and diversity

Inclusion and diversity are a source of value creation and sit at the core of the way we do business. Diversity encompasses the full range of differences and similarities represented by Nokia people. Inclusion unlocks the power of diversity. As a company we take both a structural and a behavioral approach to inclusion and diversity.

Our inclusion and diversity strategy

All Nokia business groups and functions have their own agendas to ensure Nokia is advancing inclusion and diversity. We have set our ambitions for the next three years focusing on three specific areas:

- Diversifying Nokia's talent pool. We re-established our female-hiring target in March 2023, aspiring to a minimum of 27% female hires in global external recruits by the end of 2023. We achieved 28% of women in external hiring including the conversion of female trainees into permanent employees.
- Creating a culture of high inclusion. We achieve this by logging year-on-year improvements in employee inclusion experiences in business groups and functions, based on the annual employee survey results.
- Being the preferred choice for customers and investors by role modeling best inclusion and diversity practices. The aim here is to score above the industry average in external benchmarks that are visible and accessible for our customers and investors, and to continuously improve on their feedback.

In line with our essentials and in the spirit of openness, we publish and update the Nokia Inclusion and Diversity Dashboard on a quarterly basis, which provides transparent insights into key demographics such as age group, years of service, job grade, work location and gender.

Tracking behaviors and leadership

Our annual employee survey, "Checking Nokia's Heartbeat," shows that the overall inclusion experience in the company is improving year-on-year.

The activities of our business groups' inclusion and diversity teams have focused on creating a positive experience for all and continue to train managers and leaders in recognizing their bias.

Since 2022, we have worked closely with Disability:IN, a global NGO that helps to bridge business and the disability communities across the world. The collaboration has focused on disability-related education for our employees, people managers, talent attraction, partners and leaders; benchmarking of

other companies' inclusion practices and policies; and assessing Nokia using the Disability Equality Index (DEI), a benchmarking tool for disability inclusion. In 2023, we also celebrated the International Day of Persons with Disabilities, with a special focus on neurodiversity.

While we focus on young graduates and students through our Early Careers Program, we also work toward supporting our aging workforce. We published the Leading an Aging Workforce e-book as a toolkit for people managers, HR representatives and multi-generational teams, with the aim of improving multi-generational inclusion. The e-book was also made available to our external stakeholders and customers through our website.

With strong support from our leadership, our LGBT+ employee resource group EQUAL! delivered the third OUT Leader Program, inviting participants across Nokia, our partners and our customers to self-nominate. This unique program was recognized by the Global Parity Alliance's (GPA) Diversity, Equity and Inclusion Lighthouses 2023 report as a highlight and best practice resulting in a sustainable impact. The GPA is a cross-industry group led by the World Economic Forum, committed to advancing diversity, equity and inclusion around the world.

In 2023, we also ran a Psychological Safety pilot for formal and informal leaders as well as Nokia's leadership teams. These three-hour workshops were led by trained internal business facilitators and took place at the main locations in Finland (Espoo, Tampere and Oulu) in hybrid mode. Approximately 800 Nokia leaders including the Global Leadership Team participated.

Our vibrant community of about 1 200 inclusion and diversity ambassadors and volunteers has been provided 40 learning and sharing sessions across a wide range of inclusion and diversity topics. We have continued to grow the number of allies who currently number about 680 across Nokia.

We systematically ensure that our technology, customer documentation and training content use inclusive language. We have also moved to use inclusive pronouns throughout Nokia's internal communications and brand.

Inclusive workplace design

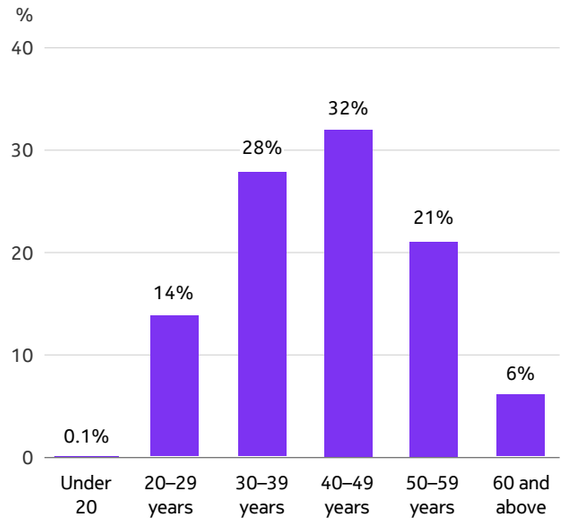
At Nokia, we create workplaces that are a pleasure to work in and speak to who we are and what we value. There is an enhanced emphasis on the importance of creating an inclusive work environment. The starting point has been on creating a workplace that brings together people with diverse backgrounds where everyone feels safe and valued.

To get everyone aligned, Nokia's people organization launched an inclusive workplace scorecard that focuses on accessibility and the well-being of all employees. The scorecard sets out our ambitious standards for our physical places, from general access areas to restrooms or cafes and canteens.

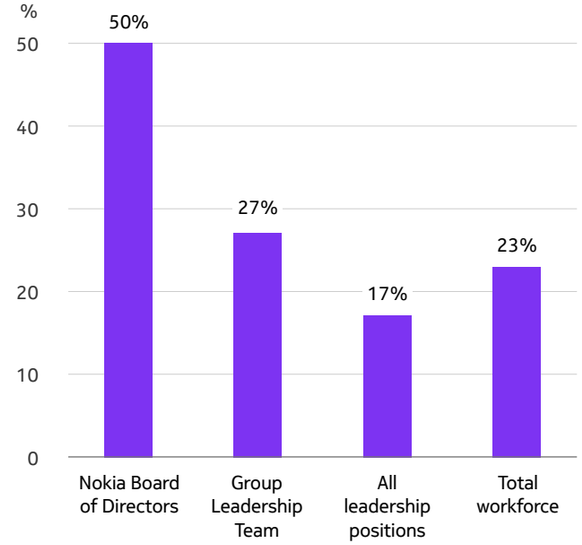
We want to show that we value people's working preferences by:

- Giving our employees options to select where they work
- Designing spaces that allow people to move freely
- Enabling access to natural colors, elements, views and daylight
- Providing access to quiet spaces and places
- Providing options and enabling some control over lighting and acoustics
- Providing adjustable, ergonomic furniture.

Average age range of Nokia employees in 2023



Share of women in our workforce in 2023



Gender and age diversity

In 2023, women accounted for 23% of our workforce, and 17% of our leadership positions were held by women. In our Board of Directors, 50% of the members were women. The diversity of our Board is considered from a number of aspects, including but not limited to skills and experience, tenure, age, nationality, ethnicity, cultural and educational background, gender identity, sexual orientation, and other individual qualities. We aim to have at least 40% of Director positions held by members of the underrepresented genders on each Nokia Board composition.

Nokia has worked with UN Women over the past two years to empower women and girls across the world. At the end of 2023, we extended the collaboration with a new contact. Through our collaboration, we have harnessed the power of technology to improve lives and increase gender equality. Now, we are renewing our partnership and scaling up our ambitions so we can act together in more countries across five different regions to benefit more people. More than 100 Nokia volunteers have already taken part in community projects in the

Middle East and Africa, giving their time to mentor, coach and teach women and girls. One of our actions at Nokia has been to create an "Action for Leadership" program together with UN Women and partners including AT&T, Deutsche Telekom, e&, Saudi Telecom and Zain Group. The program is shaped by the view that each woman and every workplace is different, but there are measures we can all take to ensure all women have the opportunity to fulfill their potential. Our focus has been on enhancing leadership skills, encouraging more active roles in technology creation, and a commitment to business outcomes and team building.

Broad-Based Black Economic Empowerment

In South Africa, we are committed to good governance practices, transparency and compliance with all Broad-Based Black Economic Empowerment (BBBEE) codes of good practice. We promote Black Economic Empowerment (BEE) programs and ensure alignment with our group diversity programs. Through our BEE plan we always commit to achieving specific BEE deliverables and actual target percentages for each deliverable.

Nokia will, as part of our 2023/2024 BBBEE plan, welcome a new enterprise development partner. Cultivation Point, trading as Lokshin Wi-Fi, was chosen as the successful candidate from 25 participants. Nokia will mentor and guide Cultivation Point toward becoming a successful supplier to Nokia and the market over the next 12 months, and if it achieves its development plan, the contract can be extended. Ozone Connect, our enterprise development partner in 2022/2023, will be promoted to supplier status, and Forge Academy will remain to provide services to Nokia as a skills development partner. Forge Academy was developed into a very successful digital academy, the only one of its kind in Africa, to provide 5G-accredited training based on the Nokia Bell Labs curriculum. Forge Academy also implemented the highly recognized Nokia 5G NDAC Lab, the second of its kind in the world.

Thus, in this virtuous circle, companies in this scheme who become suppliers in return develop students who can establish their own companies. We are not just ticking boxes to get our BBBEE certificate – we are truly driving transformation beyond South Africa and adding value to the African youth and economy.

Collaboration through Nokia's employee resource groups

Employee resource groups (ERGs) keep us in tune with underrepresented groups of employees. In 2023, we had 13 active ERGs within the company.

In 2023, we renewed the governance guidance of our ERGs, stressing the importance of Nokia's inclusion and diversity strategy as well as intersectional collaboration across other ERGs, and giving everyone in the group an equal chance to participate in decision making and to get their voice heard.

In 2023, the All Kinds of Minds ERG was established. It is dedicated to awareness and education about neurodiversity. It welcomes people to openly share their personal experiences, seek peer-to-peer support, help find the right type of workplace adjustments and collaboratively contribute to changing the way neurodiversity is perceived.

The intersectional partnership across all ERGs continued in 2023, contributing to Nokia's inclusion and diversity strategy in many ways. The following are some highlights:

ABLE (Advancing Black Leadership and Excellence) continues its ongoing partnership with Talent Attraction and Early Careers to increase African American diversity at Nokia (US) by creating a pipeline of technically skilled interns, co-ops and graduate hires. One of ABLE's signature events is Black History Month, celebrated during February in the US and Canada. The month consists of events that educate and increase awareness on topics impacting African American and African Descent communities.

EQUAL! is our LGBT+ resource group, which provides education and support for employees who are lesbian, gay, bisexual or transgender or who have family, friends or colleagues who are LGBT+. Nokia's Pride Month agenda in 2023 featured members of the Group Leadership Team to raise awareness on issues faced by LGBT+ people and highlighted actions that Nokia can lead to make the workplace more inclusive.

StrongHer is our global network open to all genders and standing up for equal opportunity with a focus on challenges faced by women in the workplace. StrongHer now has sponsorship from one of Nokia's Global Leadership Team members. This network is represented on Nokia's Employee Advisory Board as a key stakeholder of Nokia's ERG community. In 2023 StrongHer grew by seven new "Antennas" to become 42 in total, with members in 61 countries. The network launched a new emblematic program called StrongHer Women in Tech and a video podcast series aimed at featuring women role models at Nokia; increased its presence on external social media; and organized more than 227 local and virtual events around the world.

Mission Handicap, **@talentEgal, IDEAL** and volunteers from across Nokia supported the creation of neurodiversity training and the Supporter of People with Disabilities learning path as part of Nokia's allyship program. @talentEgal, founded in 2010, supports students with disabilities all the way from high school to college graduation and on to the successful completion of a trial period at their very first job. @talentEgal has supported over 200 students in their next step and works today with eight different partner schools and four companies – Nokia being one of the founding members of the association. Our No Limits to Opportunity e-book is updated and available for people managers to better hire, onboard and engage team members with disabilities. This e-book is also made available to our customers and partners and was included in the Gartner Inc. library of best practices.

External recognitions for Nokia's inclusion and diversity programs

In 2023, Bloomberg included Nokia for the fifth time in a row in its Gender Equality Index. The index includes metrics on the female leadership and talent pipeline, equal pay and gender pay parity, inclusive culture, sexual harassment policies, and pro-women brands.

In 2023, for the fourth consecutive year, we were awarded ambassador status by the Workplace Pride Global Benchmark. Workplace Pride is a non-profit foundation dedicated to improving the lives of LGBT+ people in workplaces worldwide through the provision of feedback and evaluation of companies' LGBT+ policies and practices.

Health and well-being

In 2023, we continued to provide opportunities for employees to develop their capabilities in a wide range of well-being topics, from self-care and mindfulness to mental health and burnout, with a special focus on financial well-being and coping with change. Over 14 000 employees engaged in the content delivered during the global training series, complemented by regional training in local languages.

In response to this year's restructuring announcements, we made available a series of guides, tools and training dedicated to supporting employees and managers to navigate this period of change.

The Personal Support Service, our global employee assistance program, is available to all employees and their family members, providing access to 24/7 professional support in their local language. These confidential resources play an important role in providing counselling and guidance during times of uncertainty and ongoing geopolitical conflict.

In 2023, we launched a new guide, "Having Open Conversations," to support open dialogs about mental health within teams. And our ShareToCare ERG continues to grow, bringing people together to have open conversations about mental health by sharing personal experiences and making early emotional support more accessible.

All employees now also have access to an exercise app to encourage them to take breaks and remain active during their workday, providing short exercises to support both the mind and body.

In addition to our global well-being programs and support resources, we work closely with our business groups to support the well-being needs of their employees. As an example, this year we delivered 25 sessions as part of the "Thrive with Well-Being" series and the "Be Well, Lead Well" leadership development program to targeted groups of employees and people managers across Nokia.

Sustainable supply chain

Our supply chain is a critical component of our own reputation and extended impact. We work with both customers and suppliers to drive transparency, sustainability and good ethical business practices in our long and often complex supply chain.

Responsible sourcing

We drive active engagement across our value chain, working with our suppliers to raise the standards in our ecosystem in key ESG areas like the environment (climate and circularity), labor rights and ethical behavior. We have designed our sustainable sourcing program around four core pillars based on materiality assessments and group sustainability priorities: supplier due diligence, climate, circularity and responsible minerals sourcing, complemented by supplier development and learning and industry collaboration as key enablers for success.

We work with our suppliers to develop, innovate and build capability to enable a more sustainable and transparent ecosystem. We engage with our customers to drive improvements and share best practices in our common supply chain and collaborate across the ICT industry for greater impact. We are members of the Responsible Business Alliance (RBA) and the Joint Alliance for CSR (JAC), comprising some of the world's largest telecom operators dedicated to developing and assessing corporate social responsibility standards across the industry's supply chain. We engage in supply chain efficacy audits that encompass labor rights issues, inclusion and diversity, energy efficiency, circular economy practices, and health and safety improvements, as well as auditing best practices.

In 2023, we conducted business with around 10 000 suppliers, and 80% of our total supplier spend was distributed across around 300 suppliers. Our suppliers fall into six broad categories:

- Final assembly suppliers
- Hardware suppliers for product materials (such as standard components, optical components, semiconductors and electromechanics)
- Market services suppliers who support the provision of services to our customers such as in installation and construction
- Managed services for the networks we sell
- IT suppliers
- Indirect sourcing suppliers for everyday goods and services we need to run our business such as consulting, legal and marketing

Our manufacturing suppliers are mainly based in Asia and our services suppliers are based around the world. Our final assembly suppliers during the year, in addition to our own factories in Finland, India and Poland, included Flex, Foxconn, Jabil, Sanmina and Karel supplier sites in Canada, China, Hungary, India, Italy, Malaysia, Mexico, Romania, Thailand, Turkey, the US and Vietnam. A list of our largest strategic original design manufacturers (ODMs), original equipment manufacturers (OEMs) and component suppliers is published on our website to further increase stakeholder transparency.

Nokia's supplier sustainability programs

Our key supplier sustainability programs and the share of suppliers covered by them are shown in the following table. Sustainability is one of the six pillars of our Supplier Performance Evaluation (SPE). The

supplier's sustainability score in our SPE is composed of assessment results from the CDP Supply Chain Climate Change and Supply Chain Water Security assessments, EcoVadis sustainability assessments, the Nokia Responsible Minerals Sourcing program, the Nokia health and safety Supplier Maturity Assessment (SMA) and our own on-site corporate responsibility audit program. We aim for 80% of our suppliers to have satisfactory SPE scores by 2025. In 2023, 80% of our suppliers had satisfactory scores across these sustainability programs, so we are on track, and we continue our work to grow the percentage.

We have detailed KPIs and public-sourcing global targets, including supply chain climate targets as part of our 1.5°C climate commitment. All our supplier-related sustainability targets are listed in the "Our ESG targets and performance" section.

In addition to our own programs and assessments, we are part of industry coalitions, and work to improve the corporate responsibility of global supply chains. We have been a member of the Responsible Business Alliance (RBA) since 2021 and join its key workstreams. The RBA is the world's largest industry coalition dedicated to corporate social responsibility in global supply chains. We are also one of the founding members of the First Movers Coalition – which is tasked with creating the market for lower emission alternatives and spurring growth by leveraging collective demand and committing to buying zero-emission goods and services across eight critical industry sectors by 2030. More information about our supplier management and related sustainability activities can be found online.

Our supplier requirements

We expect our suppliers to adhere to our Third-Party Code of Conduct and we provide them with our supplier requirements, including the Responsible Business Alliance (RBA) Code of Conduct and additional, Nokia-specific sustainability requirements. The requirements cover topics such as the environment, health, safety and security, privacy, risk management, labor and human rights management, ethics, and anti-corruption. They are communicated to our suppliers and integrated into our contractual requirements. An overview of these requirements can be found here.

We expect our Tier 1 suppliers (including our final assembly, materials and services suppliers) to apply and cascade the same requirements to their own suppliers and to conduct due diligence. We check this through audits and EcoVadis documentation audits. Transparency and compliance requirements are firmly applied to all supplier relationships, and gifts or entertainment are neither given nor received beyond nominal value items. We investigate and qualify all suppliers, requiring them to comply with all applicable laws and regulations, and to show that show they share the values stated in our Code of Conduct. Ethics and anti-corruption-related requirements for our suppliers are detailed in our Third-Party Code of Conduct.

Monitoring, assessment and auditing

Our key supplier-related monitoring, assessment and auditing activities include an on-site corporate responsibility audit program, EcoVadis sustainability assessments, our in-house health and safety Supplier Maturity Assessment (SMA), and the CDP Supply Chain Climate Change and Supply Chain Water Security assessments.

Supplier coverage in Nokia's sustainability programs

Program	Coverage
Request for Information process (anti-corruption, health & safety and overall sustainability)	100% of supplier spend
Health & safety Supplier Maturity Assessment	100% of relevant supplier base
Responsible Minerals program	99% of relevant supplier spend
EcoVadis sustainability assessments	62% of supplier spend
CDP Supply Chain Climate Change program	65% of supplier spend
CDP Supply Chain Water Security program	53% of supplier spend

We do not measure coverage for onsite audits as they are risk-based.

On-site corporate responsibility audit program

Our on-site corporate responsibility audit program is aligned with SA8000 methodology and includes document reviews, interviews with managers and employees, site visits and inspections of facilities, production lines and warehouses. This audit is often used with new high-risk suppliers or suppliers where there has been significant change in the scope of the business or location.

In addition, we conduct specific in-depth corporate responsibility audits on our existing suppliers. In 2023, we conducted 635 supplier audits and EcoVadis assessments in total . These are shown in the graph on the next page. The number of audits significantly increased as COVID-related restrictions were removed.

During the year we conducted 141 in-depth corporate responsibility audits at 71 supplier sites. There were 18 countries covered by these audits, such as China, Hungary, India, Malaysia, Mexico, Morocco, Taiwan, the Philippines, and Vietnam. The number of findings per category in these audits and examples of some findings and corrective actions taken are shown in table on the next page. As a result of the audits, 647 improvement recommendations were made, which were addressed through corrective action plans. All non-conformities identified were analyzed by our experts in the sustainable supply chain team, and corrective actions were included in our training materials as a mechanism for systematic improvement.

We aim to close these audit findings within six months of the audit completion date. In 2023, 55% of our corporate responsibility audit findings were closed within this time.

External assessment programs

In 2023, we completed 446 online assessments with EcoVadis on labor, safety and environmental

elements. In 2023, 80% of suppliers had a satisfactory score on EcoVadis. All the suppliers whose scores were below expectations were addressed with improvement requests. We also continued to engage our suppliers through the CDP Supply Chain Climate Change and CDP Supply Chain Water Security programs. Information on these supplier environmental assessment programs can be found in the "Decarbonizing our value chain" section.

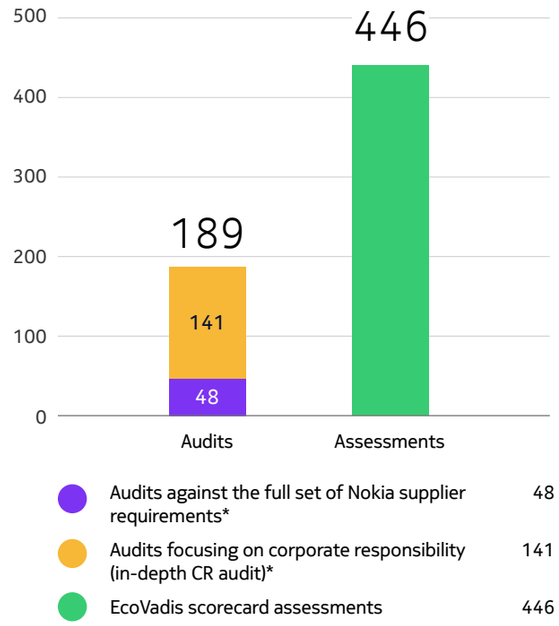
Health and safety Supplier Maturity Assessment

We also emphasize the importance of health and safety (H&S) in our supply chain, as many of our subcontractors work at height, with electricity, and they need to drive long distances as part of their work on our behalf.

We have set stringent KPIs related to our health and safety Supplier Maturity Assessment (SMA), which is our in-house-developed assessment. This assessment helps to ensure that contractors know Nokia's health and safety requirements and have the capabilities to deliver work safely on our behalf. It also helps ensure that projects have risk-mitigation procedures and controls in place. We also conduct supplier training to provide awareness of potential dangers related to their work and to ensure that the correct safety equipment is used as required.

By the end of 2023, 99% of suppliers delivering high-risk activity had been assessed using our H&S Supplier Maturity Assessment process and 99% of the assessed suppliers met H&S "Compliant" supplier status (score of 3 or more out of 5), and 18% of the suppliers met H&S "Preferred" supplier status (score of 4 or more out of 5).

Supply chain audits and assessments conducted in 2023



*127 of our supplier audits were conducted through our customers' Joint Audit Cooperation (JAC) framework or through Responsible Business Alliance (RBA) Validated Assessment Program (VAP) audits

Any supplier not meeting our health and safety requirements was, in the case of a new supplier, blocked from qualification, and in the case of an existing supplier was to be phased out or required a thorough improvement where we had no alternative supplier.

Findings from our in-depth corporate responsibility supplier audits

Category of findings	Instances of non-compliance	Number of potential risk areas identified	Total number of recommendations for improvement
Child and juvenile labor	5	1	6
Forced labor (contract agreement issues/ fine/deduction, etc.)	43	5	48
Health and safety	233	24	257
Freedom of association and right to collective bargaining	4	2	6
Discrimination	1	1	2
Disciplinary practices	1	2	3
Working hours	124	16	140
Remuneration	73	3	76
Management systems	54	11	65
Environmental management system	31	13	44
Total	**569**	**78**	**647**

These findings are based on 141 Corporate Responsibility audits conducted to our suppliers in 2023.

Building supplier capabilities through training and workshops

In 2023, we continued developing supplier capabilities around issues found in audits through supplier workshops. In total we ran 12 supplier training workshops and webinars on subjects such as modern slavery, labor migration and ethical recruitment, inclusion and diversity, responsible minerals sourcing, climate change, circular practices and health and safety. Examples of identified non-compliance and actions taken can be viewed online.

Managing risk in our supply chain

Our materiality analysis and enterprise risk management help identify potential supply chain risks. We carry out more in-depth analyses to determine all supply chain risks via our dedicated Supplier Sustainability Risk Dashboard, where we look at various sustainability risks, commodity risks and more, on a supplier location level. The outcomes are included in our category strategies. We review category strategies annually with our purchasing category leads. Failing to meet established sustainability requirements will block a supplier from

being promoted, for example, from "Restricted" to "Allowed" or to "Preferred" status.

Our supplier health and safety consequence management process

In 2023, we had in total 41 supplier-related fatal, critical or high potential incidents. As part of our consequence management related to those incidents, we issued 26 warning notes (yellow cards) to our suppliers and terminated (red cards) 4 business relationships with suppliers. 34 of the incidents were designated high potential where no one was critically or fatally injured. In 2023, we also introduced a green card category to recognize supplier positive safety behavior. The green card would be applicable when, for example proactive reporting is shared with Nokia thus enabling learning, and for the joint identification of corrective actions or further needed controls to avoid future potential incidents. In 2023, we issued 2 green cards.

Combating modern slavery, forced labor and labor migration risks

Modern slavery and forced labor of all kinds remain a challenge for all countries and supply chains. In 2023, we took an in-depth look into child and young labor risks and revised our internal Child Labor, Prohibited Labor by Young Workers and Forced Labor Remediation Guidelines. This followed our earlier conducted analysis of labor migration and its impact on our supply chain.

We have robust audit and assessment processes and procedures in place. We continue to raise awareness of modern slavery, forced labor and labor migration through workshops and training with suppliers to ensure good labor practices and inclusion and diversity in their operations.

We do not tolerate slavery, servitude, human trafficking nor forced or compulsory labor in our own operations or in our supply chain. In June 2023, we published our annual Modern Slavery Statement. The statement can be found here.

Audit outcomes

While the number of audits more than doubled over the past year, in 2023 our audits uncovered 48 cases related to non-compliance or potential risk of forced labor.

A few cases concerned missing or inadequate documentation, such as missing contracts or appointment letters or content in the contract such as salary, working hours, leave and benefit entitlements, and termination conditions. Most of these findings were addressed and closed, but a few were still to be addressed and closed in early 2024.

Fifteen (or one-third) of the cases concerned the recruitment process and recruitment costs, such as the cost of medical examinations, employee uniforms or travel tickets. These costs were initially borne by the migrant laborer in their home countries and compensated only upon arrival in the destination country or as part of the first salary, or not compensated at all. This delay increases the potential risk of bonding (bonded labor). In a few of the cases, companies had related recruitment and no-fees policies in place but did not execute any controls to ensure such activities didn't occur in their recruitment supply chains. These findings were addressed by setting up a process where fees were to be paid directly by the supplier or the labor agency and not by the worker. Nokia also highlighted the lessons learned from such cases in our ethical recruitment webinar conducted for suppliers.

Six of the cases concerned deductions that were withheld from the base salaries, such as for worn-out PPE (personal protective equipment), for training provided by a third party or for personal loan facilities provided. Suppliers are implementing corrective actions as we have no tolerance for such deductions from basic wages.

Another five cases concerned excessive employment of dispatched workers while the legal cap in the country remains at 10%.

There was also an instance of non-coercive restrictive systems or procedures where an off-position card was required to be used if employees wanted to leave their post to drink water or use the bathroom during working time and the allowed time was under 10 minutes.

We also uncovered six instances of non-conformity or potential risk related to child labor avoidance in 2023. Three of the cases were related to missing evidence of a copy of the proof of age at the time of the audit, although all the workers were of the legal minimum employment age. Two of the cases were about internship policies and procedures. In one case the percentage of student workers exceeded the allowed limit of 10%, and in the other case, the company internship policy did not state the minimum requirements to protect interns from being exploited and used to fill a labor shortage rather than complementing their studies. And in the last case there was no special protection provided to a young worker (restriction on overtime and night shift work or no health examination conducted).

The suppliers took the required corrective actions by developing missing policies and procedures for internships and young-worker protection as well as providing and including proof-of-age checks in their worker documentation.

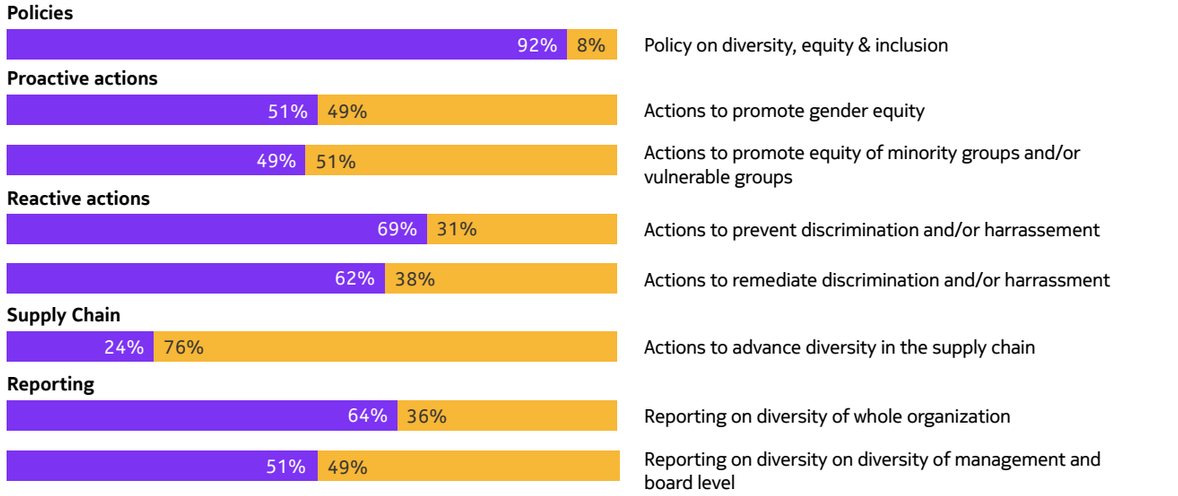
Reducing the risk of discrimination

We continue to see concerns related to the potential mistreatment of ethnic and other minorities or to the lack of proactive actions from suppliers on inclusion and diversity topics. While many of our suppliers have policies in place on inclusion and diversity, only around half of the suppliers covered by EcoVadis assessments have actions to promote gender equity and equity of minority groups.

Supplier diversity purchasing program

We have a Supplier Diversity Purchasing Program that is currently concentrated in North America and South Africa. It focuses on the inclusion of suppliers whose ownership or control is 51% or greater by persons of diverse classification – primarily ethnic minorities, women and military veterans. Currently, we participate in diversity-related events and industry networks, and we actively track our diversity spend in those countries. We include validated diverse suppliers in procurement requests and provide them with opportunities to participate in our business. We also conduct training for procurement category managers.

Our suppliers performance on I&D



Material traceability and responsible sourcing of minerals

Military conflict, human and labor rights, and environmental impact remain key risks in the mining, extraction and trade of the metals that provide essential minerals for electronic components. Tracing the materials used in our products and using our best efforts to ensure they are conflict-free is key.

We aim to contribute to a long-term solution to the issue of minerals sourcing that ensures responsible and conflict-free sourcing via legitimate trade that brings sustainable improvements in those countries where the risks are greatest. We demand that our suppliers commit to sourcing these key materials from environmentally and socially responsible sources. Our Responsible Minerals Policy can be found here.

In 2023, we continued our work with the Responsible Minerals Initiative to improve the traceability of minerals and ensure responsible sourcing. Our due diligence approach is aligned with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals.

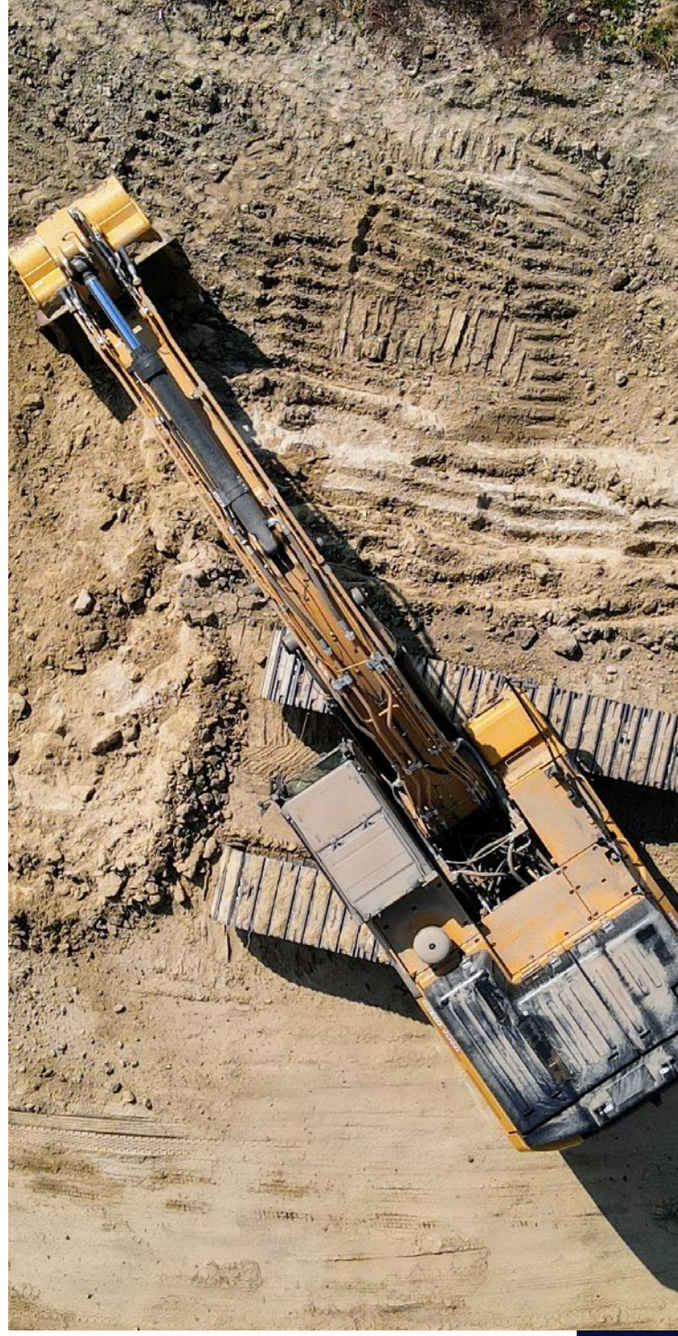
In 2023, 94% of our suppliers achieved full visibility into the 3TG (tungsten, tin, tantalum and gold) smelters in our supply chain. We achieved 81% traceability and conflict-free status for tin, tantalum, tungsten, and gold. The figure was 98% in 2022. The drop in achievement in the traceability is due to the decision prompted by the trade sanctions applied to Russia by the EU and the US and taken at the Sustainability Council in 2023 to remove Russia-based smelters from our supplier base. We have also extended and conducted due diligence for cobalt and mica.

Out of all the smelters and refiners identified as part of our supply chain, 68% have been validated as conflict-free or are active in the validation process under the Responsible Minerals Assurance Process (RMAP). A further 12% of smelters can be reasonably considered as conflict-free based on our due diligence efforts. Those smelters that were not part of the industry assurance program nor evaluated as low-risk were asked to be phased out by our suppliers, since direct engagement with these smelters over previous years has not motivated them to cooperate and we therefore feel there is a high likelihood that they are engaged in potentially non-compliant practices.

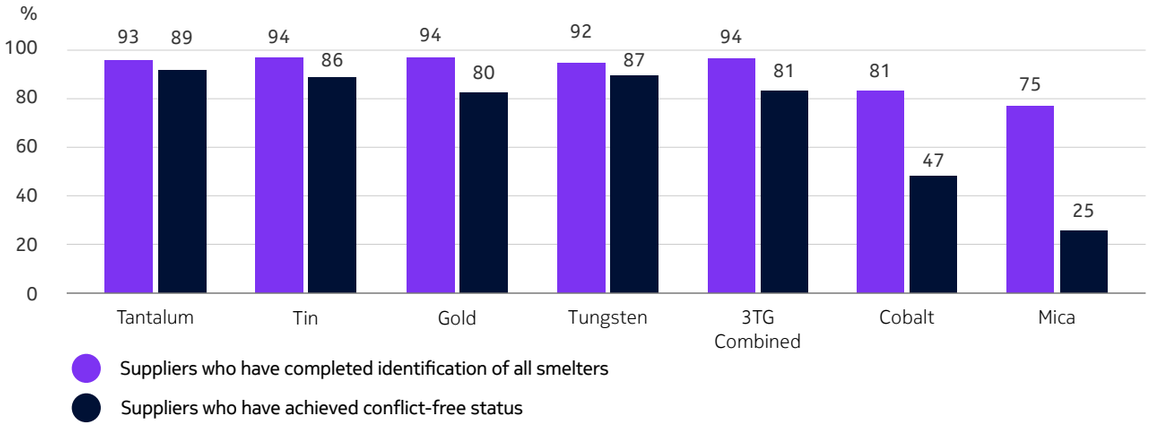
The following graph shows the conflict-free status of our suppliers for each mineral separately and combined for all 3TG smelters. We also processed stakeholder grievances about the smelter and refinery practices in our supply chain that we received either directly or indirectly through the industry grievance mechanism. In 2023, we received one case directly and four indirectly via the industry grievance channel.

In 2023, most of the Russia-based smelters in our supply chain (19) got suspended in the London Bullion Market Association's (LBMA) Good Delivery and RMI Conformant Smelter lists. Although we consider Russia-based smelters as low-risk for sourcing minerals from conflict-affected and high-risk areas, we asked suppliers to help us phase out such smelters from our supply chain.

Beyond 3TG, we also undertook due diligence for cobalt and mica in our components based on extended minerals material declarations for product parts. We addressed 65 relevant suppliers about our requirements regarding cobalt and requested them



Share of suppliers who have completed identification of all smelters and have achieved conflict-free status



to exercise due diligence over the cobalt supply chain, and 17 suppliers for mica. 81% of suppliers for cobalt and 75% for mica have completed mapping their cobalt and mica supply chains, and as a result, we have been able to identify 78 cobalt and 11 mica smelters in our cobalt supply chain, out of which 59% and 27% respectively have gone through the Responsible Minerals Assurance Program and have either “Conformant” or “Active” status.

For upstream engagement, we have continued our work with the Public–Private Alliance for Responsible Minerals Trade (PPA), contributing to the development of in-region programs and renewing our commitment for the next five years.

For more information on our responsible minerals due diligence results, please refer to our Conflict Minerals Report available from our website at the end of May each year.

Strengthening our health and safety performance

Health and safety remains a key priority for Nokia. Group leadership representatives set the strategic direction and policies for health and safety at Nokia. They demonstrate their strong commitment to excellence in health and safety by participating in and leading various risk and opportunity reviews held throughout our global markets.

Nokia has a broad range of programs targeting continuous improvement to address job-related health and safety risks when installing and maintaining equipment and providing services and solutions to our customers. We deliver training, conduct analyses and assessments, and implement consequence management. Our Health, Safety and Labor Conditions Policy can be found here.

Health and safety management systems

Our health and safety management system is globally certified and based on the internationally recognized ISO 45001 standard. Coverage within the scope is comprehensive across all business groups, network services and installations, and customer operations and supporting corporate functions. Our framework was audited in numerous locations and certified by a third party – Bureau Veritas. With our global health and safety management system, audits and certifications, and having demonstrated continuous improvement year-over-year, we are positioned as an effective leader in global health and safety management systems and programs worldwide.

Key standards and programs

Our key standards Working at Height, Rigging & Lifting, and Driving and Electrical are implemented with Non-Negotiable Requirements for effective controls to manage risk on a global scale in all markets. Incident management and reporting and investigation programs encourage all employees and contractors working on our behalf to report all incidents including near misses and high potential incidents.

Our assurance and governance programs have built-in checkpoints to measure effectiveness. We have agreed metrics and KPIs designed into all levels of our programs and business processes to assure and manage risk in critical areas such as supplier qualification and project management where high-risk activities are delivered. Country operational reviews and internal and external audits provide the visibility and accountability needed to improve performance and reduce risk. In addition, regular reporting, communication of recovery plans and action management are in place to ensure effective program management.

We see the highest risk in the health and safety of our contractors who, for example, work at height, drive, or work with electricity. Therefore, we have set stringent KPIs related specifically to supplier health and safety Maturity Assessment and High-Risk Project Assessment qualification to ensure contractors are capable of delivering work safety on our behalf and projects have risk procedures and controls in place.

Our health and safety performance

In 2023, there were no (zero) work-related fatal incidents involving employees. However, we regret the 3 (three) work-related fatal incidents resulting in the death of 1 (one) contractor/subcontractor and 2 (two) third parties.[1] Any such serious incidents while carrying out work on behalf of Nokia are unacceptable and each incident is thoroughly investigated to establish root causes and corrective actions are implemented to reduce the likelihood of future occurrences.

In 2023, Nokia ensured 100% of our suppliers formally pledged to follow the Nokia Life Saving Rules. In 2023, Nokia set a target of 40 (forty) senior leaders[2] conduct a Senior Leader Safety Tour[3]. Nokia recorded 144 (one hundred and forty four) such tours in 2023.

By the end of 2023, 99% of suppliers delivering high-risk activities had been assessed using our health and safety Supplier Maturity Assessment process and 99% of the assessed suppliers met health and safety "Compliant" supplier status (score of 3 or more out of 5), while 18% of the suppliers met health and safety "Preferred" supplier status (score of 4 or more out of 5). We also carried out implementation assessments on 99% of all high-risk projects. 98% of those projects were found to meet our minimum Non-Negotiable Requirements. Going forward Nokia will continue to focus on increasing our monitoring of our suppliers' high-risk activities and the quality of our suppliers' onsite safety supervision.

> We design, deploy and support products that transmit and receive radio frequency (RF) energy. Our Nokia RF Exposure Position Statement can be found here.

[1] Nokia has revised its fatality reporting criteria in 2023 to include third parties such as members of the Public who are assessed as being impacted by an incident that is deemed within Nokia's control. This more clearly aligns Nokia's reporting with some of its closest industry stakeholders and competitors.

[2] A Senior Leader is a person accountable and in a key position with responsibility for the delivery of our business in a safe way, influencing safety behaviours of Nokia employees and of those working on Nokia's behalf. This person is empowered to strengthen the health and safety culture in our company and has the authority and control over resources to ensure the implementation of Nokia safety standards.

[3] Creating a safer work environment starts with good leadership. Our leaders are in key position to strengthen the health and safety culture in our company. Conducting a Senior Leader Safety Tour is a targeted, direct and strategic way to engage with local teams in order to influence safety behaviours.

Bridging the digital divide

Connectivity and digitalization enable us to collaborate and innovate, can make our work more productive and efficient, and allow us to engage with our communities and families. Our solutions can bring more inclusive access to opportunities and contribute to resolving many of the social and economic challenges the world faces today.

We aim to bridge the digital divide and connect the unconnected through our broadband and innovative connectivity solutions. We further drive the uptake and knowledge of digital technologies and skills.

Connecting people and things

An estimated 2.6 billion people globally remained unconnected to the internet in 2023 according to data from the International Telecommunications Union (ITU). Nokia's products and solutions can help provide more equal access to healthcare, education and employment, and enable small businesses to participate in the digital economy.

We use our digital connectivity solutions to increase digital inclusion and provide support and technology knowledge to encourage digital skills development in communities. We have a broad product portfolio and employ focused strategies with non-terrestrial providers and other partners to enable broadband connectivity in both fixed and wireless domains.

We support digital skills building and help prepare individuals and enterprises for the digital future of work and life. We use our technology training assets, certifications such as offered for 5G learning, and social initiatives to improve digital skills and knowledge globally.

5G and gigabit fiber combined with other technologies such as IoT and IIoT, AI/ML, big data and cloud are the technologies of the future workforce and digital living.

Technology and sustainable development

5G, when combined with other technologies and smarter planning, can provide a wide range of benefits and new use cases. We expect to see new, possibly unimagined types of services and greatly improved existing ones that contribute to a more sustainable living and working environment.

The combination of 5G's low latency, which provides real-time connectivity and massive amounts of data with sensors and analytics, can help enable many smart services that can improve responses to environmental and social challenges as well as healthcare and public safety.

Connecting the unconnected

We have customers in most countries. The rollout of 5G continued around the world in 2023, as we continued to improve connectivity and coverage in many emerging markets.

With our partners and customers, we connect school districts and local communities through best-in-breed broadband communications solutions that are fast and easy to deploy and manage.

Nokia set a target at the end of 2021 to provide broadband based digital services with 2 billion subscriptions by 2030. In line with Nokia's long-term goal, we work with our customers to provide broadband-based digital services on more subscriptions. The number of mobile broadband subscriptions in Nokia radio customers' networks has increased from 2022 to end of 2023 by 372 million (2022–2023: 772 million).

We were the first telecommunications equipment vendor to announce the fiber-optic broadband network electronics products and optical modules in the US. for use in the Broadband Equity, Access and Deployment (BEAD) program. Nokia will be able to supply its products and services to critical projects like BEAD, which are focused on narrowing the digital divide.

Nokia's private wireless solution – Nokia Digital Automation Cloud (DAC) with our FastMile end-user home device – can help cities, communities and educational institutions access online learning for students. The same solution can enable broadband connectivity and business continuity for city services, such as community centers, hospitals and libraries. It can also help improve choice for public employees as they can work from home when necessary.

The majority of our 2023 social donations, 53%, were classified under the theme of digital inclusion through connecting the unconnected and building digital skills.

> "5G, when combined with other technologies and smarter planning, can provide a wide range of benefits and new use cases.

Digital skills-building solutions

Enterprise

Despite the acceleration of digitalization, there remains the risk that SMEs may face challenges in preparing their employees for future digital skills and knowledge. Our knowledge and expertise in digital technologies and potential for collaboration with industry and other ecosystem partners allow us to offer digital skills solutions to support SMEs in benefitting fully from digitalization.

Our work with NGOs to increase digital inclusion helps connect the unconnected and improve digital skills.

Education

It is important that mandatory education develops digital skills and competence, but it is equally important to ensure life-long learning and skills development to adapt to workplace demand. With our partners, we serve the specific needs of school districts and local communities through best-in-breed broadband communications solutions that are fast and easy to deploy and manage.

Nokia's private wireless solution – Nokia Digital Automation Cloud (DAC) with our FastMile end user home device — can help cities, counties and educational entities ensure students' access to online learning from the comfort and safety of their homes.

Nokia also offers its passive optical LAN (POL) solution to connect schools and school districts to high-speed broadband internet that enables students and teachers to collaborate and develop skills in a digital learning environment. For example, in 2023, Nokia with its partners deployed its high-speed optical network solution at 100 schools in Korea to create a digital-based educational environment.

Our social responsibility programs

Our approach to corporate social responsibility

Our corporate social responsibility activities are divided into corporate, key regional and local programs. Our corporate-level programs are centrally managed, and in 2023 focused on four key themes: Increasing Digital Inclusion; Climate and Environment; Inclusion, Equity and Diversity; and Disaster Relief. Key regional programs cover programs in India and China, and local community programs are initiated and run by Nokia offices around the world.

In 2023, we invested around EUR 8 million in communities around the world. 85% of the contributions were provided as cash, 1% as employee time and 1% as in-kind non-cash resources. In total, our programs reached 131 041 direct beneficiaries in 2023, as shown in the following graph. A large share of total donations, 53%, was classified under the theme of "digital inclusion through connecting the unconnected and building digital skills."

One of our key digital inclusion targets in 2023 was to harness our technology, capabilities and funds to improve the lives of 1.5 million people through social digitalization projects, digital skills building, and connecting the unconnected and underserved by 2025.

In 2023, we reached 130 832 reported direct beneficiaries spesifically through social digitalization projects, building digital skills, connecting the unconnected or underserved, and improving inclusion, equity and diversity. This year, we saw the finalization of some programs and the initial launch of new programs, which both led to the total number of reported direct beneficiaries being lower than in 2022. The total reported direct beneficiaries for 2022 and 2023 is 691 534, which provides the status of our target to harness Nokia technology, capabilities and funds to improve the lives of 1 500 000 by 2025. Women, students and minority groups were the largest beneficiary groups.

Our corporate social responsibility programs

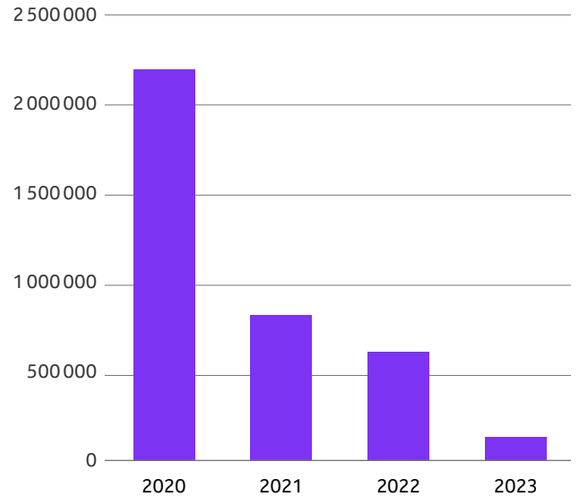
We support programs that have a long-term impact and create a sustainable future platform in target communities while being aligned with the UN SDGs.

In 2023, Nokia and UNICEF announced a new program in Senegal that aims to help bridge the digital divide and provide a dedicated digital education in selected parts of Senegal. The work also includes upgrading equipment and connectivity in the target schools, and the expected beneficiaries are both teachers and middle school children in underserved areas. The program was launched in October 2023 at an event with UNICEF Senegal, Senegal's Ministry of Education and the Embassy of Finland in Senegal.

In the Philippines, we launched a new two-year program that aims to support the Department of Education in strengthening alternative learning for out-of-school adolescents and youth. The program will directly benefit around 4 500 Filipino adolescents and young people (16–24 years). It aims to improve the learners' opportunities to get employment or enter training by creating a new competence-based assessment and micro-certification to demonstrate the learners' skills and knowledge while improving and enhancing teaching and learning through ICT. This includes making online learning material available offline, providing communication devices and teacher training, and developing monitoring and evaluation mechanisms and tools.

At the same time, we continued our program with UNICEF in Morocco. The objective of this social innovation and entrepreneurship program is to empower less advantaged young people (15–24 years), particularly girls, to become resilient and increasingly productive through (self)employment and active engagement with their own communities. The program's environmental skills sessions, and social innovation bootcamps equip young people with life and employment skills, as well as provide resources to help them identify problems and design solutions for the local community. In 2023, the program reached 3 928 people with activities like mentor training, awareness-raising sessions, regional and national social innovation bootcamps, mentoring, project or business incubations and digital skills training. The program supports young people's own business ideas.

Direct beneficiaries reached by our corporate social responsibility programs



In 2023, we also renewed our collaboration with UN Women with a private sector contract. The scope addresses communities in five Nokia regions with employment initiatives focusing on the economic empowerment of women.

During the year we executed our collaborative women in leadership program "Action for Leadership" in collaboration with three of our customers: Zain Group, AT&T and Deutsche Telekom.

Selected regional and community programs

India

Our corporate social responsibility initiatives in India are developed and implemented through meaningful partnerships with key stakeholders including national, state and local governments, NGOs and, most significantly, communities across nine states, by engaging with them and prioritizing their needs.

Our flagship initiative, Smartpur, was developed to revolutionize access to livelihood opportunities, healthcare, financial inclusion, education and governance for rural communities by utilizing the transformative power of technology.

Smartpur is a digital village ecosystem project aimed at integrating technology into the daily lives of people living in remote villages. Using digital connectivity technology, the project intends to empower local entrepreneurs and provide them with facilities to make services accessible at the village level through Smartpur centers.

In 2023, we supported Smartpur centers in 350 villages across India and the number of direct beneficiaries reached in 2023 is 119 795. Additionally, in our effort to support the productive employment, capacity development and skilling of India's youth, we have partnered with the Telecom Sector Skill Council (TSSC) to establish a center of excellence that offers certified training in futuristic and in-demand job roles in 5G and IoT. This builds awareness and boosts the availability of skilled manpower for the telecommunications industry.

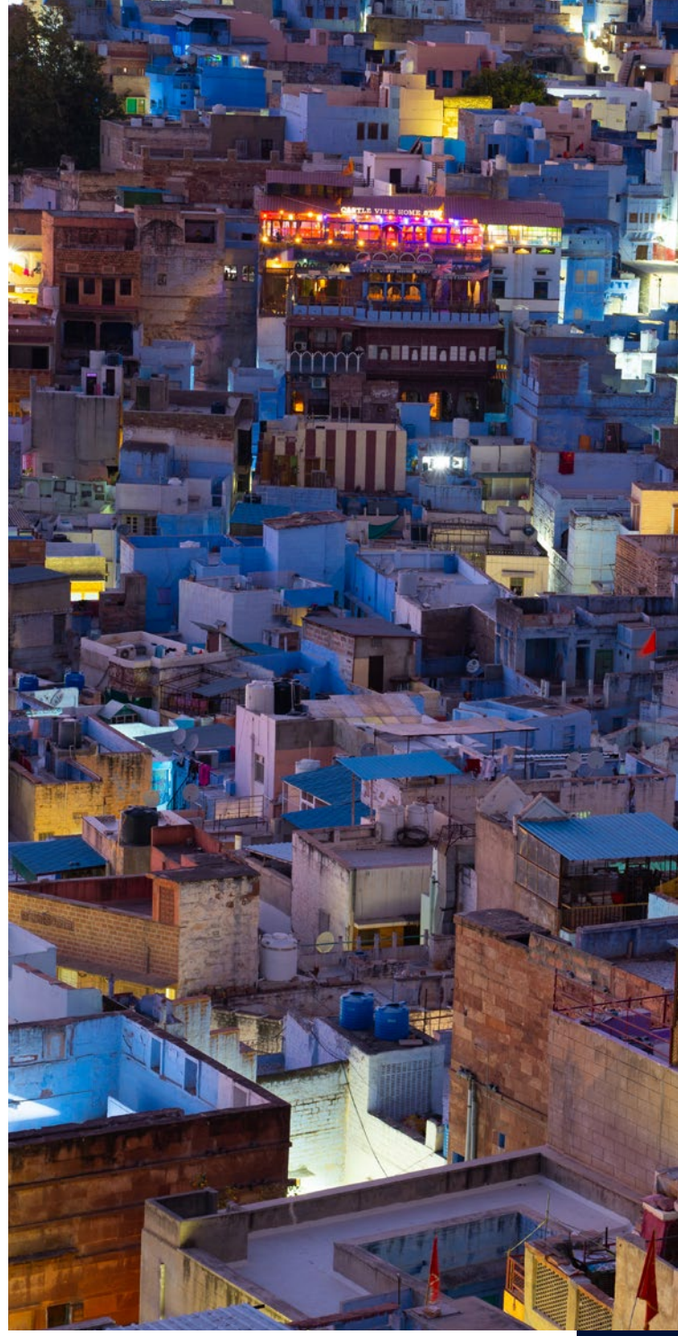
China

In China our employees launched 13 volunteering/charity programs across the country. In total, 207 Nokia employee volunteers in China contributed over 1 000 hours of volunteer service, benefiting over 5 890 people. The programs focused on, for example, coaching girl students in ICT to improve future job prospects, a kids tech summer camp with Nokia experts, and regular online courses for children in remote mountain regions. Nokia also continued the Ninglang Partnership Program – our flagship social impact program in China. The program includes developing smart classrooms, student scholarships and teacher skills as part of the Partner-Up sponsorship program to support the education of children from poorer backgrounds. Read more about our regional programs online.

Community-based programs and volunteering

Our volunteering guidelines and supplemental Standard Operating Procedures guide our employees on charitable sponsorships and donations and volunteering activities. All employees are permitted two days per year from their paid working time to engage in volunteer work.

Our employees across our sites are active in organizing activities to support and engage with the communities around them. They carry out projects throughout the year – for example humanitarian and crisis aid, donating medical supplies and used IT equipment, and collecting and donating toys, clothes and essential goods.



University collaborations

Through its Distinguished Academic Partnership program, Nokia Bell Labs fosters intensive collaboration with a global network of world-leading experts from the world's top universities and academic organizations to develop disruptive innovation in technologies such as 6G and network fundamentals, AI and software systems, and industrial automation. In addition to delivering breakthrough technologies, this network also provides access to cutting-edge expertise to build our talent pipeline.

Some 2023 program highlights include:

- The continuation of strategic research partnerships on 6G technologies with Aalto University, the University of Oulu and New York University
- Training robots to see the world like humans with the Technical University of Munich
- The creation of cutting-edge research on how people interact with a new generation of wearable devices with the Centre for Mobile, Wearable Systems and Augmented Intelligence at Cambridge University.

Our University Donations Program aims to sponsor high-risk and high-impact topics with future relevance to Nokia. The donations strengthen our relationship with top universities in Europe, the US and Asia, and we get access to top talent. This year we funded several projects with a sustainability focus.

For example, we support the professorship on biodiversity at the Jyväskylä University School of Business and Economics, and a project that is working on low-power sensing and 6G communication technologies for precision agriculture. We also fund an industrial PhD program in quantum computing at Aalto University in Finland; research into quantum computing and quantum-era security; and several 6G research projects including the National Science Foundation (NSF) RINGS program leading 6G research in the US.

We also continue to support the Forge Academy in South Africa, a fully-inclusive AI laboratory that aims to train students from various backgrounds with the skills needed in 4IR and the global digital economy of today (see the "Inclusion and diversity" section).

Human rights

We fundamentally believe that connectivity and the technology we provide are a social good that can support human rights, and we acknowledge the responsibility that comes with this. Upholding human rights is a complex issue that covers not only the technology we provide but also our partners, our suppliers and our own operations. We therefore strive to continuously learn and improve, and we believe that engaging with the broader stakeholder community is the best way forward.

Addressing human rights

Our Human Rights Policy addresses our most salient risks related to the potential misuse of the technology we provide. Policies related to other areas of human rights, for example rights relating to fair labor practices, modern slavery and human trafficking, and environmental stewardship, are covered by other company policies (see the human rights framework table).

We are committed to the human rights principles and values laid out in the International Bill of Human Rights (consisting of the Universal Declaration of Human Rights and its related covenants), the International Labor Organization's Declaration on Fundamental Principles and Rights at Work, the OECD's Guidelines for Multinational Enterprises, and the United Nations' Guiding Principles on Business and Human Rights.

We have a Human Rights Due Diligence (HRDD) process that targets the potential misuse of the technology we provide. It is a pre-emptive process applied before any sale is made and is used to identify the possible risk level to human rights through potential misuse of our technology. The process examines a country's long-term commitment to upholding human rights, the intended use of the technology in question and the customer type, to identify potential risks early in the process and trigger the required HRDD investigation and senior-level approval/denial review where needed.

For country risk ratings, we use an external assessment provider. The HRDD process triggers are a mandatory part of the sales approval process. Training, results tracking, the communication of findings, checkpoints and triggers for the process are reviewed and, where needed, improved by the Head of Human Rights on an ongoing basis.

To ensure best-in-class human rights mitigations, the HRDD process also went through an internal audit which began in 2022 and was completed in 2023, providing findings that led to increased digitalization of the process.

Nokia is a board member of the Global Network Initiative (GNI) and we work with other key industry stakeholders to increase transparency and learning. The GNI is a unique multi-stakeholder group involving leading ICT companies, investors, academics and civil society groups. Companies participating in the GNI are independently assessed every two to three years on their progress in implementing the GNI Principles.

We successfully completed our second independent assessment for the GNI, with the public report made available in 2023. In particular, the assessors highlighted Nokia's strong human rights culture, noting that many issues are flagged and addressed informally even prior to surfacing during the formal process. They also praised our robust HRDD process, which encompasses relevant functions across the company with strong escalation mechanisms.

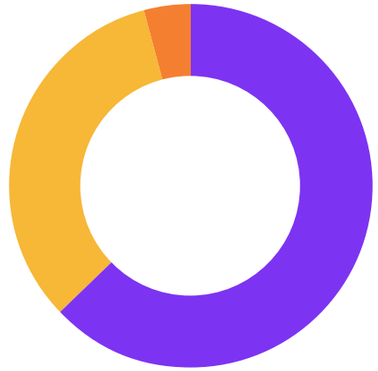
Increasing transparency on the overall narrative

Of the HRDD cases investigated in 2023, 96% of total cases were resolved as "Go" or "Go with conditions" (63% and 33% respectively) and 4% as "No go". We have again published anonymized case examples online from our HRDD work in 2023 to provide insight and examples on the robustness of this process. We also embedded the HRDD process into our sales tools during 2023.

Our Human Rights framework

	Nokia employees	Technology misuse	Nokia supply chain
Human rights impact	Labor rights, health, safety, well-being, decent working conditions, compensation	Freedom of expression and privacy Impact - Materiality - Risk	Labor conditions, freedom of expression, compensation, health and safety, corruption
Potential risk mitigation	Ensuring decent working conditions Health and well-being	Code of Conduct Human rights due diligence	Code of conduct for suppliers Audits, assessments and training Health & safety maturity assessments
Grievance mechanisms	Ethics Helpline 1 in 90 Dialogs	Ethics Helpline	Ethics Helpline Audits and assessments
Measurement	Our culture Inclusion and diversity Related targets	Reported and investigated concerns Related targets	Strengthening health and safety performance Related targets

Cases handled by Human Rights Due Diligence process and how they were resolved



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Go with conditions	33%
No go	4%

Responsible business innovation

Responsible AI

There is no question that AI has delivered numerous benefits to our everyday lives. Like all new technology, AI carries benefits and risks, and must be used responsibly. For AI to be beneficial to Nokia as a corporation, and to the society we operate in, we need to make AI ethical. We have the important opportunity to promote ethical AI standards in our own research and through collaboration with external partners whose AI tools we use. AI must be fair and reliable. AI systems must be environmentally and socially sustainable, and they must protect our information, assets, and privacy, as well as that of others. Consequently, Nokia has developed a set of internal rules and processes to ensure our use of AI is subject to proper oversight and fulfills these requirements. This is what Nokia calls Responsible AI.

Nokia has defined six principles that should guide all AI research and development in the future. We believe these principles should be applied throughout the AI system's life cycle – from the moment any new AI system or any solution incorporating AI is conceived, throughout its development, implementation, and operation, all the way to its retirement. These principles not only reflect the future of AI standards and how we want to see them implemented, but also comprehensively account for our industry's renewed focus on environmental sustainability, social responsibility and good governance, as well as compliance with applicable laws.

Responsible AI, however, is as much a business imperative as a compliance imperative. We are not looking to impose rules and guidelines that limit innovation – instead, through our Responsible AI pillars we aim to cultivate vigilant curiosity towards AI among Nokians, while further harnessing this opportunity for Nokia to be a leader in ethical business practices in our industry. By embracing responsible AI, Nokia effectively leverages and applies the AI opportunities that offer a true competitive advantage.

Nokia participates in global and regional standardization activities to ensure that these principles are included in the ground rules for developing and using AI systems in a responsible manner. These standards set the basis for the responsible development and use of AI.

These responsible AI practices are in line with upcoming regulations that are concerned with the ESG implications of the use and development of AI systems.

We call these principles the 6 pillars of Responsible AI:

1. Fairness
2. Reliability, safety and security
3. Privacy
4. Transparency
5. Sustainability
6. Accountability

Security and privacy

Security and privacy are the cornerstones of our product proposition. We work to ensure that we have a common security baseline enforced for all our products and services. We emphasize sustainable design and underscore the importance of end-to-end product security testing.

Security and privacy are part of everything we do. From design through to delivery, we aim to ensure that customer networks are seamlessly secure.

Security

Nokia has well-established cybersecurity processes built into its overall security risk management framework. This integration is achieved through the implementation of a robust Security Program governing various processes, such as cybersecurity risk management, third-party security risk management, security incident management and disaster recovery.

In 2023, Nokia conducted a security training program that included annual mandatory training, quarterly awareness campaigns, monthly phishing simulations, and expanded initiatives to safeguard key data such as our Zero-Trust and Critical Information Protection Program and our dedicated Application Security Program.

We have developed and maintain an actionable Cyber Resilience service, built on an assessment of the cyber risks Nokia is most likely to experience. This includes investments in our Cyber Defense Center and our Computer Emergency Response team, as well as the execution of regular incident simulations and tabletop exercises to ensure resilience in case of a cyber event.

We have also strengthened our third-party security process through improved supplier selection procedures, ensuring that security governance and compliance are embedded in our supplier selection processes and contracts.

Product and services security

At Nokia, we recognize the paramount importance of product and services security in the rapidly evolving landscape of telecommunications and technology. In an era marked by digital transformation and interconnected ecosystems, the security of our offerings is crucial to our operations. We understand that our customers rely on Nokia for solutions that not only elevate performance but also guarantee the integrity and confidentiality of their critical data.

We are dedicated to achieving a common security baseline enforced for all products and services. To accelerate our security ambitions, we are reinforcing the Nokia Design for Security framework, driving end-to-end product security testing initiatives like our Advanced Security Testing and Research (ASTaR) lab, and leveraging our own security innovations.

Secure products are our priority, supported by initiatives such as our Product Security Transformation Program, the pursuit of certifications for essential 5G products, and the evolution of our product security platforms. We have set up Service Security as a separate domain to cover the full-service lifecycle with a properly- defined Service Security framework, and we remain focused on the continuous certification of services teams in the ISO 27001 standard. We also have a program dedicated to enhancing the security of Nokia service companies and joint ventures.

1. We protect customer information as rigorously as we protect our own
2. We are transparent in our security practices
3. We embed security into all our products and services
4. We will inform customers promptly of any serious product or service issues that affect them
5. We independently validate our security practices.

Our commitment to privacy spans every facet of our decision making and product design. We also ensure that privacy is interwoven into the core of our operations and processes, and we do everything to ensure that our customers, vendors, collaborators and employees can exercise their privacy rights.

Data privacy

With the growing complexities posed by today's technology and business environment, enabling the strategic and consistent management of privacy helps to ensure we can make the most of the opportunities ahead. With new technologies coming online every day and everyone and everything being increasingly connected, getting privacy right remains a necessity. We are rolling out a comprehensive Privacy Framework across Nokia to improve awareness and understanding of privacy requirements throughout the company. In 2023, we rolled out mandatory privacy training for all employees.

Given the rapidly changing privacy regulatory landscape, we apply a comprehensive company-wide Privacy Program to ensure accountability for privacy at all levels of Nokia. We use our Three Lines of Defense risk model, with business groups and corporate functions forming the first line of defense, a multi-skilled central team of privacy experts forming the second line, and an independent audit team forming the third line, to provide assurance with oversight by the Audit Committee.

We have established the practice of having a Privacy Steering Committee with relevant senior executives representing business groups and central functions, who all have privacy responsibilities and accountability as part of their role for the organization they represent. Privacy updates are also regularly provided to Nokia's Board of Directors and to the Audit Committee.

The Privacy Program builds privacy into our processes, products and services. We have established core principles based on relevant laws and best practices to enable us to exercise the highest standards of integrity in dealing with and protecting personal data. We assess new privacy laws to ensure that we implement the requirements into our program and related processes. In 2023, we matured our central solution for documentation and reporting to catalog how we use data, and we conducted numerous privacy assessments that aim to mitigate privacy risks.

We are transparent about how we use personal data and how individuals can contact us with questions about their data that we hold in our systems or to share any concerns. We observe the concept of data minimization, meaning we endeavor to collect only personal data that is necessary for the purposes for which it is collected and to retain such data for no longer than is necessary.

We implement appropriate controls to ensure that only persons with a clear and justifiable "need to know" can access personal data. We also have formal processes and procedures in place to manage and mitigate any risk related to data subjects in the event of a personal data breach. These processes also include mechanisms to communicate in a timely fashion with supervisory authorities, should that be required.

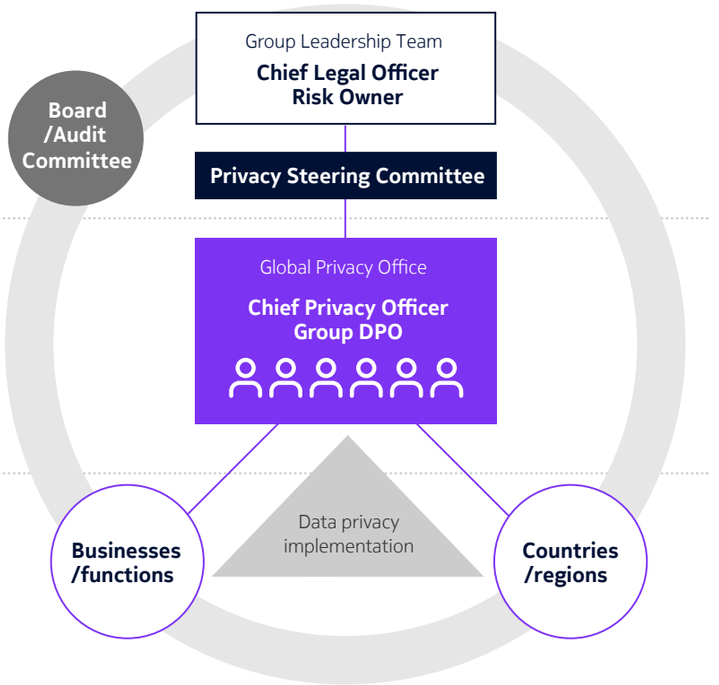
In 2023, we initiated a review dedicated to ensuring that privacy by design is built into our products and services.

Three lines of defence

Third line
Oversight and independent monitoring of first and second lines

Second line
Compliance experts that guide and advise the teams that make part of the first line

First line
Teams that carry out operations that may impact personal data



We also launched a new central privacy hub on nokia.com to ensure we are transparent and to share our privacy principles and privacy notices with individuals. And we updated our process for receiving data subject access requests.

A continuous program of privacy awareness, training and enablement ensures we effectively address areas of the highest privacy impact. This includes targeted role-based training and a network of certified privacy professionals that regularly provide coaching on privacy topics.

In 2023, there were no substantiated complaints regarding breaches of customer data. For the latest information on security and privacy please visit our website.

Business conduct

Managing sustainability

Sustainability issues are reviewed regularly at all levels of the company. We will continue to strengthen our governance structures and the processes we have established to manage ethical business practices and corporate responsibility.

Our Code of Conduct provides our requirements and guidance for all employees. Our suppliers and partners are also expected to adhere to the principles laid down in the code, which is approved by Nokia Board of Directors and supported by policies and management systems related to responsibility issues. Our key corporate responsibility policies are regularly updated and can be found online. Our overall sustainability governance framework and responsibilities are shown in the table on the next page and further described below. More information about our corporate governance practices is available in our annual reports and on our website.

Board of Directors

The Board of Directors evaluates Nokia's ESG practices, related risks and target setting, as well as their implementation and effectiveness across the company. In 2023, the Board reviewed our sustainability strategy and targets, evolving ESG requirements and expectations, investor feedback, our disclosure approach and Nokia's net zero strategy and roadmap.

In addition, the Board committees monitor environmental and social developments and activities in the company in their respective areas of responsibility. During 2023, the Audit Committee's responsibilities included the continued implementation planning of new climate and other sustainability reporting requirements, preparing the proposal for election of the assurer of the sustainability reporting, and oversight of the Ethics and Compliance Program, as well as cybersecurity risks and maturity. The Audit Committee also reviews sustainability disclosures annually, as well as the information on the use of conflict minerals in Nokia's products, presented in the annual reports and related regulatory filings.

The Personnel Committee assists the Board in the incorporation of ESG-related metrics in incentive structures and oversees human capital management, including personnel policies and practices related to Nokia's culture, employee well-being, diversity, recruiting, development and retention. In 2023, the Personnel Committee focused, among other things, on a people risk review, including physical safety and succession planning, as well as on preparing Nokia's Long-Term Incentive Plan 2024–2026 and sustainability targets to be included in the long-term incentives. The committee recommended to the Board to include carbon emission reduction in the metrics of the 2024 Long-Term Incentive Plan. This demonstrates our commitment to deliver our long-term emission reduction goal and address climate change. Our other ESG-related focus and commitment is reflected in the introduction of the health and safety metric with a fatality modifier and the continued use of the diversity metric in our 2024 Short-Term Incentive Plan.

The Corporate Governance and Nomination Committee assesses and advises the Board on ESG-related activities and practices, aiming to enhance the governance structure supporting them. In 2023, the committee discussed, among other things, the evolving ESG-related regulatory landscape and investor feedback.

The Technology Committee regularly reviews how sustainability is embedded in our technology strategy and roadmaps. For more information on Board committees, please refer to our Corporate Governance Statement.

Risk management

Sustainability risks and opportunities are part of our Enterprise Risk Management framework with multi-disciplinary company-wide risk identification, assessment and management processes.

We recognize and aim to mitigate the potential risks and negative impacts associated with our business, whether related to technology, supply chains, the climate or people, while also driving opportunities within and beyond our business in order to contribute to achieving the UN Sustainable Development Goals. Our Code of Conduct defines our way of working and we have clear policies and processes for each identified material sustainability risk.

The main features of our risk management systems and the roles of the Board of Directors and the Group Leadership Team within those systems are described as part of our corporate governance statement **(see Risk management)**. The most important risk factors and the principal factors and trends affecting our operations are discussed in our Form 20-F filing for the year 2022 **here**. For more information on Nokia Enterprise Risk Management, please go to our **website**.

Group Leadership Team

Nokia's Group Leadership Team is chaired by the President and CEO. In 2023, the Chief Corporate Affairs Officer had overall responsibility for ESG in the Group Leadership Team. In line with our mode of operation, the Group Leadership Team approves our ESG-related strategy, targets and operational frameworks, within which corporate functions and business groups can operate. This enables the accountability and empowerment of each business group while maintaining appropriate strategic and operative oversight. Independent councils and committees, such as the Sustainability Council, are used to steer, align and ensure the implementation of these strategies, targets and frameworks, and review recommendations to the Group Leadership Team.

Publicly disclosed ESG targets include increasing the use of recycled materials in products by 2030, achieving 95% mandatory training completion related to privacy, and industry verticals adopting private wireless customers as a proof point for industrial digitalization.

Nokia governance meetings and committees where Group Leadership Team members participate and where sustainability-related topics are frequently reviewed include, for example, the Compliance Meeting, the Security Meeting, the Donations and Sponsorships Committee, and the Human Rights Due Diligence Council.

Nokia Board of Directors

- Approves ESG strategy and evaluates ESG practices, related risks and target setting as well as their implementation and effectiveness.
- Specific sustainability topics are reviewed by Board Committees based on their responsibilities, including ESG reporting, materiality assessment, ethics and compliance, cybersecurity, privacy, culture, human capital management, and embedding sustainability in our technologies.

Group Leadership Team

- Reviews and approves implementation of and changes to sustainability-related policies, management and operational frameworks, strategy, targets and performance, annual sustainability report, and links to rewarding.
- Conducts sustainability review and provides feedback minimum 2 times per year and as topic-specific areas require.
- CEO, CFO and business group presidents review additional sustainability topics minimum two times per year as part of Nokia business reviews.

Sustainability Council

- Steers the alignment of sustainability strategy, priorities, and the implementation of sustainability activities across Nokia
- Contributes to the sustainability strategy and materiality assessment, and reviews sustainability targets and performance
- Provides additional insight to sustainability-related risks and opportunities.

Members
Senior leaders from units representing all Business Groups, Customer Experience, Corporate Affairs, People, Finance, Strategy and Technology and Legal and Compliance.
Convened ten times in 2023.

Donations and Sponsorships Committee

- Sets principles for allocation of corporate donations and investments for universities and communities
- Approves funds for donation allocation and reviews major sponsorships
- Assesses the impact of all donation programs.

Members
Chief Financial Officer, Chief Corporate Affairs Officer, Chief People Officer, VP Technology Leadership, Chief Compliance Officer, Head of Customer Experience Finance.
Convened once in 2023.

Inclusion and Diversity Steering Committee

- Reviews annual Inclusion and Diversity (I&D) plans
- Sets Nokia-level I&D ambitions and measures impact and targets
- Evaluates business group level I&D actions and provides feedback to business groups.

Members
Chief Legal Officer, Head of Inclusion & Diversity, other senior leaders from business groups, Human Resources, ESG and legal, and representatives from employee resource groups.
Did not convene in 2023[1].

Human Rights Due Diligence Council

- Governs high-level alignment on Nokia's Human Rights Policy and implementing procedures
- Steers decisions on Nokia businesses from a human rights point of view.
- Ensures alignment between all business groups and functions and appropriate mitigations are put in place.

Members
Chief Legal Officer, Chief Corporate Affairs Officer, Chief Compliance Officer, VP of Sustainability , VP Technology Leadership, other senior leaders per need. Head of Human Rights, and Legal Counsel.
Convened twice in 2023.

ESG function

The corporate ESG function drives the implementation of the ESG strategy and actions needed to achieve targets at the operational level. Subject matter experts contribute fact-based input to the different functions and business groups. Ensures corporate sustainability reporting is in line with requirements and regulations.

Ethics and compliance function

Supports employees with training and guidance, fostering ethical decision making and choices that are consistent with our values, policies, and laws. Promotes an open reporting culture and oversees robust and impartial concern reporting, investigation, and remediation processes.

[1]Due to reorganization, the Inclusion and Diversity Steering Committee did not meet during 2023 and the sustainability governance model will be reviewed and updated in 2024.

ESG function

At the operational level, sustainability is managed by the ESG function, the Legal & Compliance team and subject matter experts in other functions and business units. The alignment of Nokia's sustainability strategy and priorities and the implementation of sustainability activities across the company are steered by our Sustainability Council.

The council consists of senior leaders from units representing product development, sales, real estate, strategy and technology, and HR and procurement. The council also contributes to the sustainability strategy, materiality assessments and reviews of sustainability targets and performance. These responsibilities also include the assessment and monitoring of climate-related topics. In 2023, the council was managed by the Vice President of Sustainability, who reported to the Chief Corporate Affairs Officer. During the year the council convened 10 times.

Ethics and Compliance

Our long-standing reputation for high ethical standards drives our success and helps us maintain trust with our employees and stakeholders. Nokia's strong culture of integrity relies on effective controls, transparent and clear expectations, and employee empowerment to raise concerns without fear of retaliation.

We expect our employees to follow laws, policies and processes and to speak up about suspected breaches. By partnering closely with our business teams, we proactively evaluate and mitigate risks and set the foundation for compliance at all levels of our organization.

Code of Conduct

Our Code of Conduct, which is available in 20 languages, defines the principles of ethical and compliant business practices and provides clear guidance to all employees and managers. It is now available via microsite - a web-based format, that allows for easy navigation and an interactive user experience. We require everyone in the company to review and acknowledge the Code each year as part of mandatory compliance training. The Code of Conduct has 14 key compliance policy statements.

Each compliance policy area referenced and summarized in the Code of Conduct is the responsibility of one or more subject matter experts. These experts consider new and emerging trends to ensure that our policies and procedures remain up to date and in accordance with applicable laws and regulations in all countries where we operate. The full set of supporting policies and related procedures for the Code's risk areas are available online to our employees.

A separate Code of Ethics is in place for our President and CEO, our Chief Financial Officer and our Corporate Controller to highlight the additional responsibilities of those functions.

Our Third-Party Code of Conduct requires our third-party business partners to follow similar ethical practices to those included in our Code of Conduct.

Leadership engagement, accountability and compliance oversight

Our Chief Compliance Officer reports to the Chief Legal Officer. The Chief Compliance Officer presents separately and independently to the full Board of Directors at least once per year, to the Audit Committee at least four times per year and to the Group Leadership Team at least once per year and as needed. The Chief Compliance Officer also regularly meets with the Audit Committee in executive sessions without other members of senior management present.

We have dedicated compliance leaders for each of the company's markets and business groups, including Nokia Shanghai Bell. These leaders design and implement

Our Code of Conduct and the 14 main policy areas

We do business the right way

- Conflict of interest
- Dealing with government officials
- Fair competition
- Improper payments (anti-corruption)
- Trade compliance
- Working with third parties

We respect our people and community

- Environment
- Fair employment
- Health, safety & labor conditions
- Human rights
- Privacy

We safeguard our assets

- Controllership
- Intellectual property & confidential information
- Insider trading

4 defining principles

the compliance program within their respective areas, proactively identify risks, and collaborate with the teams they support to implement necessary mitigation actions and controls. This helps ensure that compliance risks are identified and managed both horizontally and vertically. Our commitment to integrity applies to everyone in the company, regardless of function or level.

Reporting concerns without fear of retaliation

We emphasize and ensure that all employees are empowered to raise concerns and speak up about suspected violations of applicable law, our Code of Conduct, Nokia policies and our values. We do not permit retaliation of any kind. We take all reported concerns seriously and thoroughly investigate suspected misconduct and allegations of retaliation.

How to report a suspected violation of the Nokia Code of Conduct

We offer multiple channels to report compliance concerns, including Legal and Compliance, Ombuds leaders, the People organization, a dedicated email address, and an Ethics Helpline with multiple options to report, including an online portal and country-specific options. Ombuds leaders sit outside of the Legal and Compliance and HR/People organizations and provide a supplemental, neutral and confidential option to raise concerns and seek guidance. Our Ethics Helpline allows for anonymous reporting and is open to employees and external stakeholders. We aim to respond to and investigate all concerns promptly and establish remediation plans as needed.

> Nokia was recognized as the Compliance Department of the Year at the 2023 American Lawyer Industry Awards. The achievement highlights the important role that everyone in the company plays with fostering our culture of integrity.

In 2023, the Business Integrity Group, our investigations team in the Ethics and Compliance organization, received a total of 1 056 concerns, of which 483 were integrity concerns and investigated by the Business Integrity Group as suspected violations of our Code of Conduct. In 2023, the Business Integrity Group closed 370 investigations into alleged violations of our Code of Conduct, of which 159 were substantiated with cause found after investigation.

We implemented corrective actions including 22 dismissals and 37 written warnings. Beyond individual discipline, detailed root cause analysis was conducted for substantiated cases, and unsubstantiated cases as appropriate, to identify, implement and monitor remedial measures and improvements. Anonymized examples of our concern investigations case be viewed on our website.

Concerns reported in 2023 by category

Category	Number of concerns
Conflict of interest	54
Controllership	100
Dealing with government officials	1
Fair competition	4
Fair employment (all HR-related concerns)	505
Guidance	108
Human rights	0
Improper payments	8
Insider trading	1
Intellectual property and confidential information	49
Privacy	27
Trade compliance	24
Well-being, health, safety and environment	21
Working with suppliers	71
Other	83
Total number of concerns reported	**1 056**

How to report a suspected violation of the Nokia Code of Conduct

All stakeholders play a vital part in helping to keep Nokia safe and compliant. One of the most critical contributions is to report suspected unethical behavior. Our Ethics Helpline tool (i-Sight) makes it easy to report suspected compliance breaches. The tool offers a more agile and user-friendly interface, enhanced reporting and data analytics capabilities for investigators and enhanced case management features, leading to increased efficiency in investigations.

Reporting channels:

Email: **ethics@nokia.com**

Online web form

Country-specific phone numbers

Compliance as a business group enabler

Our approach to compliance emphasizes the mitigation of risks in real time and in partnership with the business groups, with enhanced oversight where required. The Ethics & Compliance team provides guidance and counsel on a range of issues, enabling the compliant and sustainable growth of our business groups.

In 2023, we took the following measures to fortify our commitment to ethical business practices:

- We deployed a web-based version of our Code of Conduct (microsite) that offers mobile device compatibility, a more user-friendly and interactive experience with videos and graphics, and site usage analytics.
- We evaluated our current risk assessment processes, implemented improvements and adjusted existing processes to focus resources on the highest-risk areas.
- Partnered more closely with Internal Audit and the ESG team to identify areas for increased coverage and compliance risk mitigation.
- We leveraged innovative and automated techniques to streamline processes in support of our Enterprise growth strategy, including just-in-time training modules, bespoke job aids and live compliance benchmarking sessions for channel partners.
- We enhanced our use of data analytics as part of our digitalization journey to test the efficacy of our controls and create effective, real-time triggers to proactively manage risk. We also created a team to leverage data collection and create visual deliverables to assist in identifying risks and mitigants.
- We supported business groups and functions to ensure that compliance considerations are included in business models as they adjust to the continually changing business landscape and increasingly diversified customer base.

Open reporting – Global Ombuds Program

Our Global Ombuds Program fosters and strengthens our speak-up culture and reinforces our strict anti-retaliation policy. Our local Ombuds leaders actively promote the program and serve as confidential and neutral resources for employees with compliance questions, concerns and requests for guidance. The global Ombuds network is a critical pillar in Nokia's speak-up culture and plays an important role in encouraging our employees to voice their concerns.

Compliance risk assessment and mitigation

We employ a holistic approach to compliance risk assessment, utilizing both quantifiable information (including metrics that feed into risk algorithms) and qualitative information (such as trending compliance laws, geopolitical issues and other exposure factors that cannot be assigned a metric but impact risk and require consideration). This information is gathered through automated data feeds and interviews with business teams as well as quarterly meetings of our Compliance Risk Committee.

We also use other mechanisms to analyze and mitigate risks such as Compliance Control Framework Reviews, Site Acquisition Project Reviews and Compliance Operational Reviews.

In 2023, our Ethics & Compliance team conducted a total of 13 Compliance Control Framework Reviews that were supplemented by four Compliance Operational Reviews and three Site Acquisition Project Reviews. Additionally, we partnered with Internal Audit, allocating resources to conduct multiple compliance-related audits and inquiries throughout the year, including five anti-corruption audits.

Gauging effectiveness

Our 2023 Nokia Annual Employee Survey, "Checking Nokia's Heartbeat," included compliance-related questions and produced overall positive survey results. For example, 85% said that their line manager talks to the team about the importance of ethics and compliance.

Beyond this employee-wide survey, we also use other means to gauge the effectiveness of our Compliance Program. As an example, our 2023 mandatory Ethical Business Training course included anonymous survey questions related to fear of retaliation and usage of our Code of Conduct.

The Global Ombuds Program plays an important role in encouraging our employees to voice their concerns

Achievements in 2023:

1. Assisted employees with roughly 470 questions and concerns
2. Held 130 awareness sessions, with over 12 500 participants total, to reinforce Nokia's speak-up culture and zero tolerance for retaliation
3. Continued rolling out soft skills training specifically tailored for Ombuds leaders
4. Cascaded a global anti-retaliation campaign at local level

Employee and other stakeholder inputs are actively and routinely sought to further develop our compliance program. We use multiple feedback channels, discussions and training to drive and enhance the culture of continuous improvement in our compliance program. Survey results and other collected inputs are shared with relevant business/regional teams, managed through mitigation plans and integrated into the annual risk assessment and communications process for ongoing management.

Our Internal Audit team collaborates closely with the Compliance team in conducting audits and with other inquiries including financial-focused investigations that assess the effectiveness of our compliance processes and controls. The Internal Audit team receives all Compliance Control Framework reports and takes steps to collaboratively mitigate risks identified during compliance reviews and investigations.

Similarly, Internal Audit attends Ethics and Compliance regional reviews when audit issues are presented and discussed. Internal Audit also engages Ethics and Compliance when ethics-related issues are identified during audits and follow-up is required, and incorporates Ethics and Compliance's input when creating its yearly audit plan.

Compliance training program

We employ a long-term, strategic approach to training by maintaining a three-year training roadmap. Our training plans remain flexible to accommodate emerging risks, new legal requirements and business priorities.

Our Ethical Business Training module was one of three mandatory, web-based training courses deployed in 2023, along with modules devoted to the important topics of information security and privacy. The Ethical Business Training included a review and acknowledgment of our Code of Conduct and the related 14 policy areas; a requirement to declare potential conflicts of interest; and short reviews of key topics including confidential information, hospitality, securing permits and licenses (site permitting) to execute customer projects, and working with third parties. In 2023, 98% of our employees completed the Ethical Business Training module. When new employees join the company, they are assigned a new-hire training curriculum that includes annual mandatory training.

In 2023, we provided training (online and in-person) and communications to keep the business abreast of emerging risks, as well as to provide important reminders about roles and responsibilities.

We deployed:

- "Just-in-time" training videos to provide information at the time most needed, triggered by specific employee requests or actions
- Risk-specific training on privacy, anti-corruption, competition law, site permitting, working with third parties, and our Third-Party Code of Conduct. For example, the competition law training included a robust offering of communications, live training, online modules, polls and videos
- A comprehensive, global anti-retaliation awareness campaign to heighten awareness of potential retaliatory behaviors and available support channels
- Communications on the Ethics Helpline and investigation process and videos to explain new reporting tools and investigation processes.

These resources were supplemented by numerous live and recorded training sessions delivered to smaller target audiences on various compliance topics throughout the year. These included about 75 sessions with over 23 600 total attendees.

Compliance communications program

Compliance communications help employees understand the laws, regulations and policies that apply to their everyday work. In addition to formal training, we annually refresh and deploy global and region-specific communications to strengthen understanding and to ensure adherence to our Code of Conduct, policies and core values.

Introducing new employees to Nokia's culture of integrity begins on day one of joining the company, with a personal welcome letter from our Chief Compliance Officer that includes information about our compliance program, compliance resources and the Code of Conduct.

In 2023, our compliance communications program included a quarterly newsletter to keep employees informed about compliance activities, policies, resources and training, as well as trends and risks, including real case updates about actual company investigations and the resulting disciplinary actions.

We introduced a Chief Compliance Officer "bi-annual real case round-up" to spread more awareness about the Ethics Helpline investigation process, the importance of speaking up, and the consequences of misconduct. We used various forms of media to communicate on trending compliance topics, such as anti-retaliation, bullying, privacy, cybersecurity, fair competition and concern reporting. We continued our emphasis on "tone at the middle" communications by refreshing resources aimed at helping managers facilitate compliance discussions with their team members.

Our annual global Integrity Day event reinforced our commitment to high ethical standards with various activities, including a global panel discussion with senior leaders, interactive discussions with employees at a local level, and engaging local initiatives. The event included the announcement of compliance award winners in two categories: 13 compliance heroes and 12 ombuds leaders for their stellar work in promoting a compliance culture.

Anti-Corruption Center of Excellence and Third-Party Program

Nokia's Anti-Corruption Center of Excellence (CoE) focuses on identifying and mitigating compliance risks associated with third parties and multi-layer transactions as well as geopolitical events that may pose a risk under applicable laws, including anti-corruption.

The CoE manages various policies that set integrity expectations for third parties. It also partners with the Communications and Training teams to create and deliver training and messaging to third parties to ensure that they understand the company's expectations for ethical behavior.

Processes to identify and mitigate third-party and transactional risk are in place and are monitored regularly to identify possible gaps. These processes include due diligence vetting of third parties, multi-layer transactions, pre-approval requirements for certain hospitality and gifts, and sponsorships and donations. Transaction or third-party requirements are often leveraged to mitigate risks, and these are assigned to specific employees as owners and are tracked to ensure completion.

We work closely with third parties, including commercial third parties, licensees and suppliers, to encourage adherence to the same high standards of ethical business across all interactions and to help ensure responsible sourcing and globally acceptable labor practices. This work includes benchmarking sessions with key third parties; robust compliance-related contractual terms; the required review and acceptance of our Third-Party Code of Conduct, available in eight languages; and mandatory training that includes anti-corruption training.

The CoE's comprehensive, multi-faceted, risk-based approach helps to identify and mitigate risks to the company while empowering our business teams to engage in transactions around the globe.

Competition laws

Nokia is committed to complying with competition laws everywhere we do business. This commitment starts with our Code of Conduct, which emphasizes Nokia's expectation that we comply with all applicable

competition laws, and is furthered by our detailed policies, guidelines, training materials and communications.

We maintain a centralized online repository for our competition law resources, and we closely monitor legislative, regulatory and enforcement activity to ensure we remain current with our policies and training.

Responsible advertising

Nokia's advertising must be built on a clear and accurate messaging framework, as set out in our visual and verbal guidelines, with pragmatic statements grounded in fact, real proof points, and provide genuine reasons to believe in Nokia. The use of false or deceptive messages, ambiguity or aggressive sales techniques is strictly forbidden and is against our Code of Conduct and our brand guidance

World's Most Ethical Award

We have been honored by Ethisphere once again as one of the World's Most Ethical Companies®. Nokia is one of three companies in the telecommunications sector and the only Finnish company to be recognized in 2024.

This award is a testament to our strong ethical business activities in 2023 and our commitment to a culture of integrity, which includes among other things our commitment to human rights, diversity, social and environmental impact, and risk management.

Nokia Ethics & Compliance corruption training

Topic	Format	Audience	Target Frequency
Code of Conduct (part of EBT) Code overview and acknowledgement Conflict of interest disclosure	Online	All employees	Annually
Conflict of interest	Online	All employees	Every 3 years
Anti-bribery/anti-corruption/improper payments (part of EBT)	Online	All employees	Every 3 years
Anti-corruption training for third parties	Online	Third parties	Every 3 years
Anti-bribery/controllership - advanced course	Online	Role-based	As needed
Corporate hospitality "Just in time" video	Online video	Employee requests hospitality approval	At time of approval request
Bribery video/animation	Short video	All employees	As needed
Third-party Code of Conduct	Microlearning and video	Third parties	Every 2 years
Site acquisition, site-permitting compliance	Online	Role-based - sales and deployment	Every 3 years
Travel & expense approvals	Online	People managers	Every 2-3 years

Our economic impact

As a global company, we have a significant direct and indirect economic impact on our stakeholders. The direct economic impact includes our purchasing of goods from suppliers, dividends paid to shareholders, and wages and benefits paid to our employees, as well as financial expenses paid to creditors, income taxes paid to the public sector and community investments.

The key figures related to our direct economic impact are listed in the following table. We also contribute indirectly to the economy in a variety of ways, though our greatest indirect impact comes from the benefits of technology.

Our tax payments

In 2023, we paid a total of EUR 576 million in direct income taxes, of which EUR 173 million was paid in Asia-Pacific and EUR 111 million in Europe, the Middle East and Africa. In the Americas region, we paid EUR 291 million in taxes.

Besides paying direct income tax, we contribute to society in the form of pension contributions, social security contributions, payroll taxes, value-added taxes, sales taxes, customs duties, excise taxes, environmental taxes and other similar duties and fees.

Our tax policy

The foundation of our tax policy is to pay the right amount of tax that is legally due in the correct jurisdiction. As a major taxpayer and collector of indirect taxes and payroll-related taxes, we pay and collect these taxes in accordance with the applicable rules and regulations in every country where we operate, and we follow the rules set by the relevant authorities.

We also follow a global transfer-pricing policy that is based on the OECD's Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations. The guidelines outline the arm's length principle as an internationally accepted valuation standard for intercompany dealings, and we comply with that principle in all our intercompany dealings. We also follow the development of local transfer-pricing rules and regulations in all territories and adopt localized transfer-pricing policies if necessary.

Large multinationals are obliged to disclose country-specific information to the tax authorities (so-called country-by-country reporting within the framework of OECD BEPS Action 13). We are compliant with these reporting requirements.

We may also seek advance pricing agreements – for example, agreements between taxpayers and tax authorities, to the extent feasible to gain mutual understanding and acceptance on the tax treatment of intercompany arrangements. The benefit of such agreements is to remove uncertainty regarding tax treatment, especially in complex business arrangements.

Nokia conducts business in many countries, and in every one of these countries our policy is to operate in an open and cooperative relationship with the tax authorities. Our tax planning is aligned with our business models, and taxes are considered in business decision making but only as one of many elements. Our business and location planning is driven by sound commercial needs.

We are subject to income taxes in multiple jurisdictions. Our businesses and investments globally, particularly in emerging markets, are subject to uncertainties, including unfavorable or unpredictable changes in tax laws, taxation treatment and regulatory proceedings, including tax audits. We are compliant with reporting requirements to disclose country-specific information to tax authorities according to country-by-country reporting requirements. We also actively monitor and comply with other regulations in this area.

Indirect economic impact

Nokia and its activities also indirectly impact economic development in other ways. We generate business opportunities and employment within our supply chain and enable competence development for our employees. Connectivity is beneficial in many ways and has been shown to increase productivity and economic growth.

The technology we provide helps to connect the unconnected, allowing access to information and potentially to financial and commercial services for underserved areas. 5G can enable new ways of doing business based on new use cases, some of which are yet to be discovered. Digitalization can transform public service delivery and help bring the benefits of innovation to a much broader audience.

The ICT industry can play an important role in technology transfer and human capital development globally. Our long-term Smartpur project is a good example of that role in action, as the program digitalizes and connects villages in India to create smart hubs. See more in the section "Selected regional and community programs".

Economic impact

Stakeholder group	Impact (EUR million)	2021	2022	2023
Direct economic value generated				
Customers	Net sales	22 202	24 911	22 258
Economic value distributed				
Suppliers	Total purchases of goods and services	13 368	14 689	13 571
Shareholders	Dividends paid	9	353	621
Employees	Wages and benefits	7 541	7 903	7 470
Creditors	Net financial expenses	241	108	150
Public sector	Income taxes paid, net	314	381	576
Communities	Community investments	7	13	8

Numbers include continuing operations. For more information, please see "Nokia in 2023" annual report.

Key data and reporting principles

Data-reporting principles

Scope and boundaries

The data reporting principles provide explanation for each key data table that is listed below. The sustainability data presented in this report comprises Nokia Group, including Mobile Networks, Network Infrastructure, Cloud and Network Services, Nokia Technologies, and Group Common and Other. The report also contains limited information on our antenna systems business, Radio Frequency Systems (RFS). This report covers the calendar year 2023 and, where available, trend data from the year 2019. Information dating back to 2003 is available on our website.

Newly acquired companies will be included in the reporting scope when they have been legally consolidated and integrated into Nokia systems. Exceptions to the reporting scope for certain indicators are specified in the notes to the data tables. When adjustments have been made compared to earlier reports, they are also specified in the notes.

Assurance

Our selected indicators have been assured by an independent auditor of Nokia, Deloitte Oy. The indicator selection is done based on our materiality analysis, target setting and specific stakeholder needs. Please see more information on the Independent practitioner's assurance report on pages 108-109.

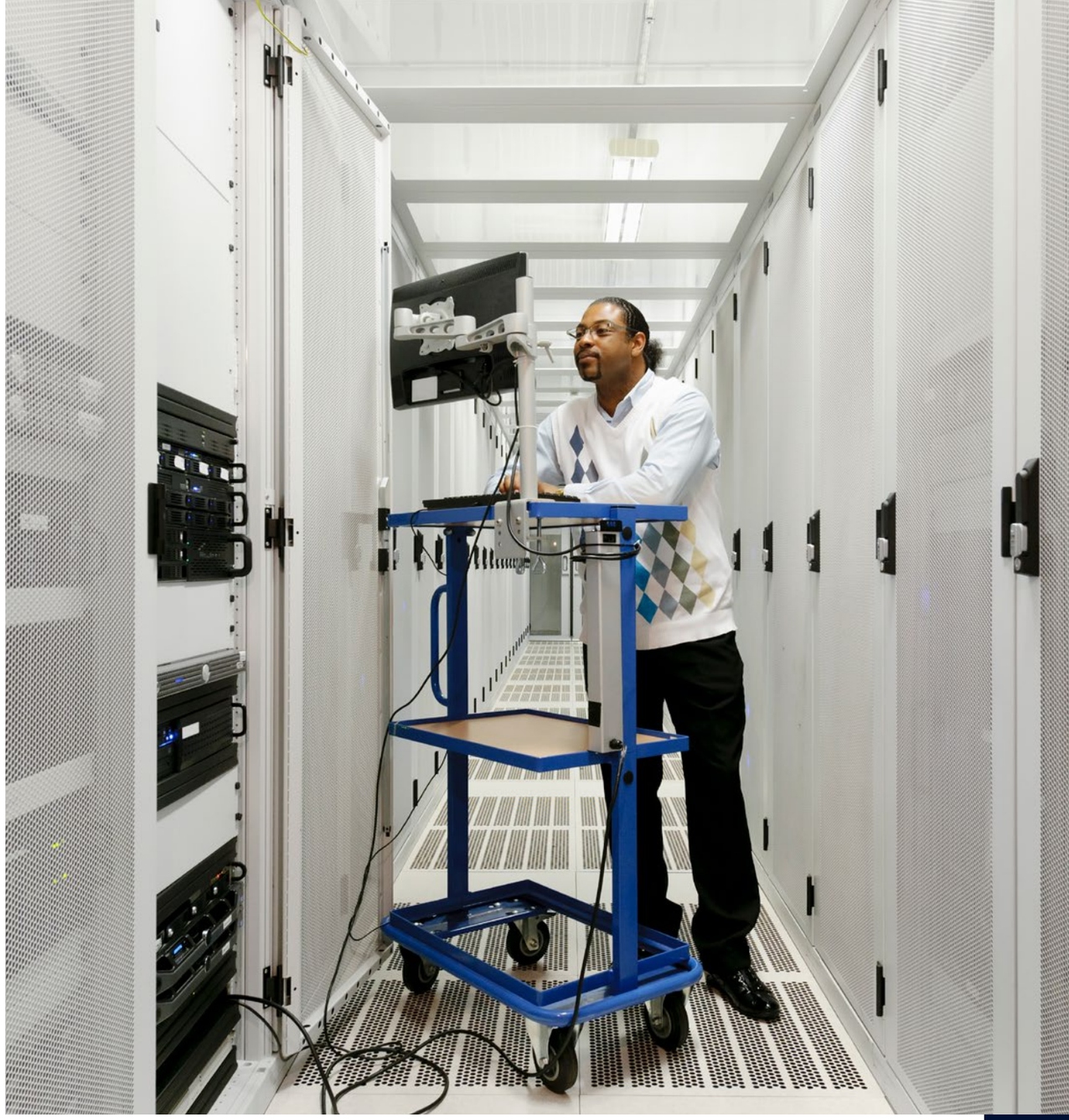
Environmental data

We have an internal document - the Environmental data handbook - where we record, for example, data boundaries, data collection methodologies, used tools, and emission factors. Below we explain key information from the Handbook.

All environmental key data is presented in rounded numbers. The totals are calculated from exact data, and we ensure the totals are rounded correctly. Year-on-year comparison for all environmental key data is calculated with non-rounded values.

Resource utilization

Energy data covers stationary and mobile sources' combustion of fuels and consumption of electricity, heat, and cooling in facility operations, as well as combustion of fuels in the marine fleet. Water data covers withdrawal of water from municipal sources in facility operations and the share of recycled water, which is recycled both for sanitary purposes and for irrigation. Waste generation covers hazardous and non-hazardous waste generated in facility operations.



In addition, we separately report packaging waste, which is reused in our distribution hubs operated by service providers, and the amount of equipment collected at end of life.

Energy, water, and waste consumption data is typically collected from facility-level responders, obtained from invoices or metered data. For facilities with no data availability, usage of 2023 data is estimated with data gap corrections or employing annual intensity factors based on kWh/m2 (electricity and natural gas), m3/m2 (water) and kg/m2 (waste), as calculated from the reporting sites, thereby accounting for 100% (2022: 100%) of Nokia facilities. In 2023, these estimation procedures accounted for 12% (2022 9%) of electricity and 16% (2022 5%) natural gas usage, 7% (2022 4%) of operational facility waste generation, 15% (2022 15%) of water withdrawal, when compared to total withdrawal, respectively. Subleased areas, covering 6% (2022 6%) of the total site area in 2023, are not covered in the key data table. Water and waste estimations are done based on facility area (m^2).

Waste generated at our facilities is handled directly by vendors, by landlord vendors and local authorities. The level of accuracy varies, and we aim to report the most accurate data. Where specific weights are not available, to ensure maximum coverage we employ estimation and extrapolation methods. Utilized waste includes waste that has been either reused, recycled, or the energy from it has been utilized. Non-utilized waste has been either sent to a landfill or incinerated without energy recovery. The composting of biowaste is recorded under recycling. The definitions for what are reported under hazardous and non-hazardous waste have been made on a global level to keep corporate reporting simple. For example, all discarded batteries and electric and electronical waste (WEEE) are reported globally under hazardous waste, although only different sub-categories of WEEE are defined hazardous in different countries. Hazardous waste also contains data from our Nokia product repair operations. The actual waste treatment is always done according to local legal requirements. Reported waste data is rounded to hundreds of metrics tons and for 2022-2023 data tens of metrics tons for values below 100. Until 2021 data below 100 is marked with <100 or <50. We ensure the total waste amount rounds correctly.

Our carbon footprint

Our approach to measuring greenhouse gas emissions follows the Greenhouse Gas (GHG) Protocol (www.ghgprotocol.org) developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). We use the following three standards:

- The Greenhouse Gas Protocol, A Corporate accounting and reporting standard
- GHG Protocol, Scope 2 guidance, An Amendment to the GHG Protocol corporate standard
- Corporate value chain (Scope 3), Accounting and reporting standard, Supplement to the GHG Protocol corporate accounting and reporting standard.

The GHG Protocol defines three scopes of CO_2e emissions:

- Scope 1 – direct emissions, from sources owned or controlled by the company
- Scope 2 – indirect emissions, from the consumption of purchased electricity, heat, and/or steam (location-based and market-based)
- Scope 3 – indirect emissions, as a consequence of the activities of the company, but from sources not owned or controlled by the company.

Greenhouse gases

We report the emissions as CO_2 equivalents (CO_2e) as per GHG Protocol's guidance. CO_2e is the universal unit of measurement to indicate the global warming potential (GWP) of the greenhouse gases in the Kyoto protocol, expressed in terms of the GWP of one unit of CO_2e.

Operational boundaries and emission calculation

We use the operational control approach for setting organizational boundaries for our GHG emissions inventory. We use emission factors available in the beginning of the reporting year for scope 1, 2 and 3 calculations. We follow the GHG Protocol recommendation to use IPCC 5th Assessment Report (AR5) GWP100 values. These values do not include climate-carbon feedback. Some emission factor data sources still use GWP100 values from AR4 as a data source of their emission factors. The expectation is that all data sources will start to use AR5 values in the coming years. Where we use emission factors developed by the International Energy Agency, OECD/IEA, the emission calculations have been prepared by Nokia and do not necessarily reflect the views of the International Energy Agency.

Scope 1 emissions

Direct CO_2e emissions from Nokia facilities include GHG emissions resulting from the combustion of oil and gas within Nokia facilities, along with minor direct releases of GHGs associated with refrigerant leakage from facilities' cooling systems and firefighting equipment. AR5 GWP100 values are used to calculate emissions from refrigerant and firefighting equipment, emissions from employing fuel cell technology are provided by the supplier, while all other emissions from the combustion of oil and gas are calculated using emission factors published by United States Environmental Protection Agency (EPA).

Direct CO_2e emissions from our car fleet are tracked by obtaining information from country-specific leasing suppliers, which are consolidated into one system. Emissions calculation is based on actual driven mileage and official CO_2e emission value per km of each car make and model. Applicable emission factors are sourced from car manufacturers. In the case that the distance travelled is not available from the leasing supplier, the budgeted annual mileage in the leasing contract is used for calculation.

Direct CO_2e emissions from our marine fleet are calculated based on the fuel type and fuel usage of marine vessels. Our Alcatel Submarine Networks maintains a listing of all owned and leased marine fleet vessels with associated fuel consumption. Marine fleet reporting principles were updated during 2023 and data was recalculated for 2019-2022. Scope 1 contains now vessels owned by Nokia. Chartered vessels are reported under scope 3, category 1. Despite of reallocating marine fleet CO_2e reporting between own and chartered vessels, both vessel categories are still included in Nokia's SBT reporting. Marine fleet emissions are calculated with EPA emission factors.

Scope 2 emissions

Indirect CO_2e emissions include emissions from purchased electricity, heating, and cooling. As per GHG

Protocol definitions, the location-based accounting method quantifies scope 2 GHG emissions based on average energy generation emission factors for defined locations, including local, subnational, or national boundaries. In our case, location-based emission factors are obtained from EPA eGrid for the USA and for all the other countries we use IEA Emission factors developed by the International Energy Agency, OECD/IEA.

The market-based accounting method quantifies scope 2 GHG emissions based on the emissions emitted by the generators from which the reporter contractually purchases electricity bundled with instruments, or unbundled instruments on their own. In our case, applicable market-based residual emission factors are employed for sites located in Europe (obtained from the Association of Issuing Bodies (AIB)), the USA and Canada (obtained from Green-e). Those sites that purchase certified renewable electricity are assigned an emission factor of zero based on the quantity of green energy employed. If supplier-specific emission factors are not available, location-based emission factors are applied.

GHG emissions associated with purchased steam and heat are calculated employing the applicable EPA emission factor, which is based on the assumption that natural gas was used to fuel a boiler exhibiting an efficiency of 80%. GHG emissions associated with purchased chilled water and cooling are calculated employing the same country emissions factors as electricity, based on an assumed efficiency of 100%. Emissions avoided due to the purchase of renewable energy are verified utilizing Guarantees of Origin (GOs) and Green Tariffs in Europe, as well as International Renewable Energy Certificates (I-REC) in China.

Scope 3 emissions

For relevant scope 3 categories, the calculation methodology for estimating emissions is described. For non-relevant scope 3 categories, an explanation is provided.

1. Purchased goods and services: chartered marine fleet for installations, final assembly suppliers, and other suppliers. Data was recalculated for 2019-2022 due to reporting method changes for marine fleet. Chartered marine fleet CO_2e emissions are calculated based on the fuel type and fuel usage of marine vessels with EPA emission factors. Final assembly supplier data is collected directly from those suppliers. Other suppliers CO_2e emissions are reported based on data collected with CDP Climate Survey from Nokia's biggest suppliers. 2023 disclosure is based on the latest CDP data representing suppliers' year 2022 emissions. We use a hybrid method, using emissions allocated for Nokia by the suppliers and also intensity based (GHG/€) allocation, where allocated emissions were not available, or allocation was not reliable based on different internal quality measures. To avoid double counting, the following data is excluded from this category: scope 1 (from car fleet and marine fleet), scope 3 category 4 (upstream transportation and distribution), and scope 3 category 6 (business air travel). 2023 disclosure is based on the latest CDP data representing suppliers' year 2022 emissions. 63% (2022 63%) of total purchase spend in 2023. We recognize that this emission category includes a lot of uncertainty, as suppliers have variable quality in their own reporting and in allocating emissions to Nokia. We have also recognized data gaps of ancillaries and survey marine fleet and embodied emissions.
2. Capital goods: Earlier capital goods CO_2e emissions were based on financial data on property, plant, and equipment additions during the reporting year and estimated by using the GHG Protocol Scope 3 Evaluator tool. Used tool was discontinued during 2023. New calculation method is under development and 2023 is not reported.
3. Fuel and energy related activities not included in scope 1 and 2: not presently being reported, because emissions are by calculation less than 0.1% of total scope 3 emissions.
4. Upstream transportation and distribution: Data includes emissions from inbound and outbound logistics paid by Nokia. Data is based on the top 23 (2022 19) logistics supply partners delivery data (ton-km) and transportation mode. Reporting is done in real weight, by using EPA's CO_2e emission factors or logistics supplier own factors. Earlier heading of this data point was referring also to category 9, downstream transportation and distribution. It was noted, that GHG protocol had updated their Technical guidance for calculating scope 3 emissions (new version 1.0). Naming of this data follows new version but calculation method has stayed the same. Hence there was no need for recalculations. We have recognized data gap from marine fleet cable transportation.
5. Waste generated in operations: not assessed for 2023. In our earlier scope 3 category 5 screening, these emissions were calculated to represent less than 0.1% of our total scope 3 emissions.
6. Business travel: emissions are reported for business air travel, which has the biggest impact out of all business travel modes. Travel information is obtained from our assigned Travel Agencies. Supplied data includes distance traveled, delineated by flight distance ranges and cabin class. Data from travel agencies is consolidated in a system which is used to calculate emissions from air travel. Emissions factors are obtained from EPA.
7. Employee commuting: We conducted an employee commuting survey in 2018. Survey results are a representative sample from several countries. Those results are extrapolated with the updated headcount, flexible working data, and EPA emission factors to represent commuting of all employees for 2019–2023 emissions. We have recognized partial double counting as some employee commuting is reported both in scope 1 car fleet and this scope 3 category 7.
8. Upstream leased assets: not presently being assessed as leased vehicles and facilities are presently assessed in scope 1 and 2 emissions.
9. Downstream transportation and distribution: not assessed, Nokia reports transportation paid by Nokia, see scope 3 category 4.
10. Processing of sold products: not considered relevant because processing is not required for sold Nokia products.
11. Use of sold products: The calculation formula is following: Σ [total lifetime expected uses of products (hours) x number of products sold in reporting period x product power consumption (kW) x emission factor for electricity (kg CO_2e/kWh)]. Data covers hardware products from Nokia's Network business groups. Software only products are not included. Product use time varies between 6 and 15 years, depending on the products. Energy use calculations are based on product group specific standards, for example, by ETSI, wherever standards have been published. The objective is to have a

product energy coverage above 80%; in 2023, coverage is 98% (2022 98%). Calculations are based on the assumption that all products are powered by grid electricity. Data is rounded to thousands until 2021 and hundreds from 2022. We use the IEA's latest world average CO_2e emission factor available in the beginning of the reporting year. For 2023 we calculated also GHG emissions with usage specific emission factor, which is combination of customer specific, country average, and global average emission factors. Country and world average emission factors are from IEA, while customer specific emission factors are from customers.

12. End-of-life treatment of sold products: not considered relevant. Based on our life cycle analysis, the use-phase accounts for 89–95% of global warming potential, production (supply chain and own operations) for 2022 5–10%, logistics for 1–2% and end-of-life treatment less than 1%. Therefore, this category is not considered relevant for reporting in scope 3 GHG inventory assessments.
13. Downstream leased assets: not presently being assessed because emissions are by calculation less than 0.1% of total scope 3 emissions.
14. Franchises: not applicable, as Nokia does not have franchises.
15. Investments: This category is not applicable for Nokia in 2023, as category 15 is designed primarily for financial institutions and investors with investments not included in scope 1 and scope 2. GHG emissions reporting follows the financial reporting practices of consolidation.

People data

Year-end headcount is as published in financial reporting. Some personal and transactional job-related detail data is, however, not included in Nokia's central Human Resources databases. In 2023, the number of employees whose individual detail data was not tracked centrally was 3 486 (4 408 in 2022, 5 685 in 2021, and 5 071 in 2020). We use external temporary labor (ETL) for certain non-core activities and/or subcontractors to meet customer needs or volume demands. Activities performed by ETL, or subcontractors, include for example, consultants supporting different tasks in our business groups and support functions, facility service providers, security guards and IT support. Externals are not covered in any of Nokia employee data; they are included in the "Responsible sourcing" section. At end of 2023, the number of external temporary workers used was in the region of 2 260 people (around 3 590 in 2022).

Hiring and attrition rates are calculated against the average at month-end permanent headcounts. Number of new employee hires includes "Hire, Rehire & Convert from Contractor/External transactions activity" and excludes merger and acquisition activity. Employees with permanent contracts include internal employees not having data indicating the employee is on a fixed-term contract or a trainee. The definition of Line Manager is a manager with one or more subordinates. Nokia's executive management board is the Group Leadership team. Senior management is defined to have job grade 13+, and leadership has job grade 12+.

Training and education

Training provided for externals is not included in the employee-related numbers but reported separately. The average number of training hours per employee also includes training arranged by business groups or external parties, and training records approved by a Line Manager.

Occupational health and safety

The indicator name defines whether the data covers Nokia employees and or contractors and sub-contractors. The cut-off day of incident reporting is in early January. There can be some cases, especially from contractors, reported after the cut-off day.

Community investments

Community investments include contributions such as cash, value of time and value of in-kind. Cash has represented 85% of the total contributions in 2023 (92% in 2022, 98% in 2021, and 98% in 2020). The number of beneficiaries includes beneficiaries from corporate and key regional programs. We also track a part of local programs in addition to global and regional ones.

Ethics and compliance data

Data on reported concerns and investigations are obtained from the Business Integrity Group as recorded in the Case Management Tools and included to the best of the team's knowledge.

Management systems data

Reported information about our management systems coverage is status as of year-end. From 2021 the scope of the data is Nokia Group, and in 2018–2020 the scope was our Networks segment so 2018–2020 numbers are not entirely comparable to 2022 numbers. From 2023 in order to better align with Nokia headcount calculation approach, management system coverage includes ServCo data and excludes "In Headcount External – ETL" individuals. Multiple sites on the same location are counted as certified, when such sites are considered as part of campus for certification purposes. Buildings classified as car parks, restaurants and warehouses are excluded from the calculation. Exceptions are sites with regular headcount associated with them. In addition to large offices, a portion of our headcount is distributed at multiple locations such as small sales, project, and field offices in customer premises, and in many of these facilities we have very little to no control over the building or space.

Supply chain management data

Data on audits and supplier assessments are maintained by our Sustainable Supply Chain team. The EcoVadis platform is utilized in metrics related to EcoVadis assessments and the CDP platform related to climate change management. RBA platform is utilized in onsite audits related metrics. Conflict-free smelter information is reported through the Conflict Minerals Reporting Template (CMRT), consolidated to the Master Template and compared against Responsible Mineral Initiative's audit program lists.

Financial data

Financial indicators covered by this report are as published in the Group's Annual accounts for 2023 and included in Nokia's audited financial statements. Please see Auditor's Report from page 208 onwards in our "Nokia in 2023" annual report.

Environmental data

	2019	2020	2021	2022	2023	Year-on-year change (1) 2022–2023	2023 data assured	Notes
Greenhouse Gas Emissions (metric tons CO_2e)								2
Total GHG Scope 1 (Direct emissions from facilities and mobile sources)	**117 300**	**96 500**	**101 100**	**103 500**	**111 100**	**7%**	●	3, 17
GHGs from fuel combustion in facilities (stationary and mobile sources)	20 800	19 500	18 400	23 700	21 600	-9%	●	
Hydro-Fluoro-Carbon (HFC) refrigerants in facilities	300	600	400	600	400	-42%	●	
Car fleet	29 600	21 000	24 400	22 400	19 300	-14%	●	
Marine fleet, own vessels	66 600	55 300	57 900	56 800	69 900	23%	●	18
GHG Scope 2 (Indirect emissions from purchased electricity, cooling and heating), Market-based	**327 200**	**263 600**	**224 500**	**135 300**	**84 800**	**-37%**	●	3
Purchased electricity	311 300	245 900	207 900	122 100	71 800	-41%	●	
Purchased cooling	8 200	10 900	8 900	8 600	8 400	-2%	●	
Purchased heating	7 700	6 800	7 600	4 700	4 600	-1%	●	
GHG Scope 2 (Indirect emissions from purchased electricity, cooling and heating), Location-based	**421 900**	**380 200**	**377 300**	**354 800**	**322 300**	**-9%**	●	3
Purchased electricity	406 000	362 500	360 800	339 800	307 700	-9%	●	
Purchased cooling	8 200	10 900	8 900	8 600	8 400	-2%	●	
Purchased heating	7 700	6 800	7 600	6 400	6 300	-2%	●	
Total Scope 1 and 2 GHG emissions, Market-based	**444 500**	**360 100**	**325 500**	**238 900**	**195 900**	**-18%**	●	3, 17
Total Scope 1 and 2 GHG emissions, Location-based	**539 200**	**476 700**	**478 400**	**485 300**	**433 500**	**-5%**	●	3, 17
GHG Scope 3, Indirect emissions	**39 279 800**	**35 614 900**	**40 659 700**	**39 476 400**	**35 213 600**	**-11%**		17, 23
Category 1, Purchased goods and services	3 070 700	2 507 300	1 596 600	705 900	560 000	-21%	●	4, 18
Category 2, Capital goods	417 000	380 300	455 200	444 800	Not reported	Not applicable		19
Category 4, Upstream transportation and distribution	303 600	255 200	326 100	329 800	140 900	-57%	●	4
Category 6, Business air travel	71 700	13 300	5 600	26 700	30 700	15%		
Category 7, Employee commuting	110 900	39 000	17 200	50 100	54 100	8%		6
Category 11, Use of sold products (with global average factor)	35 310 000	32 420 000	38 259 000	37 919 200	34 427 800	-9%	●	4
Category 11, Use of sold products (with usage specific factors)	Not reported	Not reported	Not reported	Not reported	33 691 400	Not applicable	●	

	2019	2020	2021	2022	2023	Year-on-year change (1) 2022–2023	2023 data assured	Notes
Total Scope 1, 2 and 3 GHG emissions, Market-based	**39 724 300**	**35 975 000**	**40 985 200**	**39 715 300**	**35 409 500**	**-11%**		3, 17, 23
Total Scope 1, 2 and 3 GHG emissions, Location-based	**39 819 000**	**36 091 600**	**41 138 100**	**39 934 700**	**35 647 000**	**-11%**		3, 17, 23
GHG intensities and miscellaneous GHG information								
Nokia SBT (metric tons CO_2e)	34 960 700	32 619 900	37 600 100	37 628 500	34 319 800	-9%	●	17
Total Scope 1 and 2 GHG emissions per net sales (metric tons CO_2e / € million), Market-based	19	17	16	10	9	-8%		
Car fleet (gCO_2e/vehicle-km)	129	114	92	96	91	-5%		20
Emissions avoided due to purchased renewable electricity (metric tons CO_2e)	145 900	169 500	192 100	262 600	294 600	12%		7
Biologically sequestered carbon (metric tons CO_2e)	0	0	0	0	0	0%		5
Other air emissions (metric tons)								
Ozone Depleting Substances (ODS), as ODP	<0.01	<0.01	0.45	0.24	0.00	-100%		
Criteria air pollutants	36.1	31.1	31.4	31.0	27.4	-12%		
Volatile Organic Compounds (VOC) emissions	1.0	0.9	0.9	0.8	0.7	-11%		8
NOx	18.1	15.5	15.8	15.4	13.5	-13%		
SOx	0.8	<0.5	<0.5	0.9	1.0	6%		
Total Particulate Matter (PM) emissions	1.4	1.2	1.2	1.2	1.0	-15%		
Other criteria air contaminants	14.8	13.0	13.1	12.6	11.1	-11%		
CO_2e portion of the biofuel combustion related to district heating	Not applicable	Not applicable	Not applicable	3 200	2 900	-8%		14
Energy consumption (GWh), (1 GWh = 3 600 GJ)								
Energy consumption in Nokia facilities, total								
Electricity	961	893	892	897	869	-3%	●	15
Heating	34	30	34	28	28	-2%	●	
Cooling	27	34	34	39	50	28%	●	
Fossil gas	111	101	99	127	117	-8%	●	
Fossil oil	2	1	1	3	1	-58%	●	
Biofuel	0	0	0	0	0	0%	●	

	2019	2020	2021	2022	2023	Year-on-year change (1) 2022–2023	2023 data assured	Notes
Facilities' energy, total	**1 135**	**1 059**	**1 059**	**1 094**	**1 065**	**-3%**	●	
Direct energy	113	102	101	130	118	-9%	●	
Indirect energy	1 021	957	958	964	947	-2%	●	
Renewable energy	302	351	470	581	674	16%	●	7
Renewable electricity	302	351	470	573	666	16%	●	7
Renewable electricity share of total electricity (%)	31%	39%	53%	63%	75%	13	●	16
Renewable district heating	Not applicable	Not applicable	Not applicable	8	8	-4%	●	
Renewable district heating share of total district heating (%)	Not applicable	Not applicable	Not applicable	28%	27%	-0.5	●	
Total energy per net sales (MWh/€ million)	49	48	48	44	48	9%		
Energy consumption in Nokia fleet								9
Marine fleet (Fossil oil use)	285	289	314	299	343	14%	●	21
Marine fleet (Biofuel use)	Not applicable	Not applicable	Not applicable	Not applicable	0.004	Not applicable	●	21
Energy consumption outside of Nokia								
Energy consumption of the sold products	71 790	66 500	79 560	79 500	74 650	-6%	●	4
Water								
Total water withdrawal (thousands m³)	**1 737**	**1 285**	**1 020**	**885**	**943**	**7%**	●	10, 13
Total water withdrawal per employee (m³)	18	14	12	10	11	10%		6
Water withdrawal by source (%)								
Municipal water supply (%)	100%	100%	100%	100%	100%	-2		
Recycled/reused water (thousands m³)	**17**	**14**	**18**	**22**	**25**	**12%**		
Recycling/reuse of total withdrawal (%)	**0.9%**	**1.1%**	**1.7%**	**2.4%**	**2.6%**	**0.1**		22
Total water use (thousands m³)	**1 753**	**1 299**	**1 038**	**907**	**967**	**7%**		13
Circular economy								
Waste within Nokia operations (metric tons)								11
Total waste	**8 000**	**7 900**	**8 400**	**17 200**	**13 000**	**-25%**	●	
Reuse	<50	<100	<100	200	100	-49%	●	

	2019	2020	2021	2022	2023	Year-on-year change (1) 2022–2023	2023 data assured	Notes
Recycle	3 400	5 300	6 300	12 500	9 900	-21%	●	
Energy recovery	500	1 000	400	1 100	2 100	93%	●	
Landfill	4 100	1 500	1 700	3 500	900	-73%	●	
Incineration without energy recovery	0	0	0	0	0	0%	●	
Total non-hazardous waste	**7 500**	**7 200**	**7 900**	**13 500**	**11 500**	**-15%**	●	
Reuse	0	0	<50	100	100	-50%	●	
Recycle	3 000	4 900	5 800	9 800	8 700	-11%	●	
Energy recovery	500	900	400	800	1 900	149%	●	
Landfill	4 000	1 400	1 600	2 800	900	-69%	●	
Incineration without energy recovery	0	0	0	0	0	0%	●	
Total hazardous waste	**500**	**700**	**600**	**3 700**	**1 400**	**-61%**	●	
Reuse	<50	<100	<50	40	20	-49%	●	
Recycle	400	400	500	2 700	1 200	-56%	●	
Energy recovery	<50	<100	<50	300	200	-37%	●	
Landfill	<50	100	100	700	100	-91%	●	
Incineration without energy recovery	0	0	0	0	0	0%	●	
Hazardous waste by types								
Electronic waste from facilities	400	400	400	3 400	1 200	-64%	●	
Other hazardous waste	<100	200	<50	200	200	-12%	●	
Waste utilization rate (%)	**49%**	**81%**	**80%**	**80%**	**93%**	**13**	●	
Equipment returned from customers (number, metric tons)								4
Reuse (no. of items)	56 300	79 400	55 400	88 900	49 300	-44%	●	12
Total equipment returned from customers (metric tons)	**Not reported**	**5 900**	**4 000**	**3 400**	**2 900**	**-14%**	●	
Reuse	Not reported	570	350	350	290	-17%	●	12
Recycle	4 000	4 700	3 270	2 900	2 610	-10%	●	12

	2019	2020	2021	2022	2023	Year-on-year change (1) 2022–2023	2023 data assured	Notes
Energy recovery	330	550	240	60	7	-88%	●	12
Landfill	30	50	120	90	6	-94%	●	12
Incineration without energy recovery	Not reported	Not reported	Not reported	0	0	0%	●	
Product packaging in hubs (metric tons)								
Reuse	3 200	1 600	2 600	2 500	2 100	-17%		4

Notes

"Not reported" means we do not have data available for that particular year or scope. "Not applicable" means activity did not occur.

1. Year-on-year change is expressed as percentage change (%) when the indicator value is in general number format. When the indicator value is in percentage format, the change is expressed as percentage points (pp).
2. Includes CO_2e from following GHGs: CO_2, CH_4 and N_2O.
3. Nokia uses internally market-based (not location-based) values for example in target setting and if only one value is given without further definitions, it's the market-based.
4. Data covers Nokia's Business Groups (Mobile Networks, Network Infrastructure, Cloud and Network Services).
5. Biologically sequestered carbon (i.e. carbon dioxide emission from burning biomass/biofuels) and emissions from fermentation are not relevant for Nokia as we do not burn or fermentate biomass or biofuels on-site.
6. Based on total headcount reported in Nokia's annual reports.
7. Renewable electricity calculations that are associated to green attributes, e.g. Guarantees of Origin (GO), Renewable Energy Certificates (REC), power purchase agreements (PPAs).
8. VOC source is from fuel combustion. No significant quantities from solvents and halogenated hydrocarbon, so these emissions are not relevant and not consolidated.
9. Energy consumption is presented only for marine fleet, as energy consumption data from Nokia's car fleet is not available.
10. No significant quantities of heavy metals discharges into water, indicator not relevant and not consolidated.
11. Waste within Nokia operations contains waste from Nokia facilities (e.g. offices, laboratories, factories) and Nokia product repair operations.
12. 2022-2023 data is not comparable to previous years as 2019-2021 data contains also packaging materials.
13. Data for 2021 corrected for 2022 report due to calculation error with estimated water use.
14. Calculated based on method as advised in GHG Protocol, Scope 2 Guidance.
15. 2022-2023: To avoid double counting of energy consumption within an organization as outlined in GRI standard 302-1, Total Electricity consumption includes purchased electricity and self generated solar electricity however excludes electricity produced by fuel cells (2022, 2023: 17GWh) as this is reported under fossil gas consumption (2022: 32GWh, 2023: 34GWh).
16. 2022-2023: In accordance with RE100 and CDP Technical criteria, to calculate the Renewable Electricity share of Total Electricity (%), total electricity consumption includes all purchased electricity and self-generated solar electricity (2022: 897GWh, 2023: 869GWh) and electricity produced by gas fuel cells (2022, 2023: 17GWh), see also note 17. Using electricity data as shown in the table to calculate this proportion would result in a higher percentage (2022: 64%, 2023: 77%), however Nokia have decided to follow the RE100 methodology.
17. 2019-2022: Recalculated due to recalculations of the source data.
18. 2019-2022: Recalculated. Scope 1 contains own vessels. Chartered vessels owned by third party reported as part of scope 3 category 1.
19. 2023: Not reported due to discontinuation of GHG protocol Scope 3 Evaluator tool. New method is under development.
20. 2022: Updated with final data.
21. Contains both own and third party vessels.
22. 2019–2022: Calculation corrected.
23. 2023: Data doesn't include scope 3 category 2 data.

People data

	2020	2021	2022	2023	Year-on-year change 2022–2023	2023 data assured	Notes
Employment							
Number of employees, year-end situation	89 978	86 370	87 005	84 549	-3%		
Share of employees with full-time contract	99%	99%	98%	98%	0		
Share of employees with permanent contracts	97%	97%	97%	97%	0		
Number of new employee hires	4 961	6 443	8 856	4 678	-47%		
Rate of new employee hires, %	6%	8%	11%	6%	-5		
Female share of new hires	25%	25%	27%	28%	+1	●	1
Total number of leavers	9 572	9 008	8 035	6 543	-19%		
Total attrition rate	12%	11%	10%	8%	-2		
Attrition rate of voluntary leavers	5%	7%	6%	4%	-2		
Average length of service (in years)	11	12	11	12	9%		
Number of long-term expatriates worldwide	137	97	89	87	-2%		
Diversity & Equal Opportunity							
Share of women within workforce	22%	22%	23%	23%	0		
Share of female line managers	16%	16%	17%	17%	0		
Share of women within senior management	14%	14%	15%	16%	+1		
Share of women within leadership	15%	16%	17%	17%	0		
Share of women on the executive management board	24%	27%	30%	27%	-3		
Share of women in the Board of Directors	44% (4 of 9)	38% (3 of 8)	40% (4 of 10)	50% (5 of 10)	+10		
Number of nationalities in the executive management board	9 (of 17)	7 (of 11)	6 (of 10)	6 (of 11)			
Share of non-Finnish in the executive management board	76%	64%	60%	55%	-5		
Average age of employees at year-end	41	42	42	42	1%		
Number of nationalities within workforce	164	163	163	157	-4%		2

	2020	2021	2022	2023	Year-on-year change 2022–2023	2023 data assured	Notes
Training & Education							
Average number of all training hours per employee	33	30	29	26	-10%		
Number of attendees in corporate leadership programs	1 129	647	2 006	2 256	12%		
Occupational health & safety							
Near miss incidents reported (including contractors)	237	211	255	183	-28%		
Lost-time incidents of employees	11	20	21	16	-24%		
Work-related fatal incidents involving employees	0	0	0	0	0%	●	
Work-related fatal incidents involving contractors or subcontractors	2	4	8	3	-63%	●	3
Safety tours executed and reported with senior leaders	Not reported	Not reported	Not reported	144	Not applicable	●	4, 5
Community investments							
Total value of contributions (EUR million)	6.50	6.99	13.44	7.30	-46%		
Total number of direct beneficiaries	2 183 300	862 900	614 149	131 041	-79%		6
Number of reported direct beneficiaries reached through social digitalization projects, digital skills building, and connecting the unconnected or underserved	Not reported	Not reported	560 702	130 832	-77%	●	
Human rights							
Share of cases resolved through Human Rights Due Diligence (HRDD) process						●	
resolved as “Go”	70%	73%	55%	63%	+8		
resolved as “Go with conditions"	30%	26%	31%	33%	+2		
resolved as "No go"	0%	1%	11%	4%	-7		

Notes

1. Calculation includes trainees that are converted to permanent employees as of 2022.
2. Nationalities data cover 90% of the headcount in 2023.
3. Nokia has revised its fatality reporting criteria in 2023 to include third parties such as members of the public who are assessed as being impacted by an incident that is deemed within Nokia’s control. This more closely aligns Nokia’s reporting with some of its closest industry stakeholders and competitors.
4. Creating a safer work environment starts with good leadership. Our leaders are in key position to strengthen the health and safety culture in our company. Conducting a Senior Leader Safety Tour is a targeted, direct and strategic way to engage with local teams in order to influence safety behaviours.
5. A Senior Leader is a person accountable and in a key position with responsibility for the delivery of our business in a safe way, influencing safety behaviours of Nokia employees and of those working on Nokia’s behalf. This person is empowered to strengthen the health and safety culture in our company and has the authority and control over resources to ensure the implementation of Nokia safety standards.
6. Total number of direct beneficiaries across all Nokia's contributions and activities related to: Increasing digital inclusion that provides access to opportunity (education, health, employment); Inclusion, equity & diversity; not specified.

Information on Nokia employees by gender, 2023 [1]

Headcount	Female	Male	Blank[3]	Total
Number of employees	18 920	62 100	3 529	84 549
Number of permanent employees[2]	18 034	60 161	43	78 238
Number of temporary employees[2]	886	1 939	0	2 825
Number of full-time employees[2]	18 388	61 323	43	79 754
Number of part-time employees[2]	531	776	0	1 307

Information on Nokia employees by region, 2023 [1]

Headcount	Asia-Pacific (with India)	China	Europe (w/o Finland)	Finland	LAT	MEA	NAM	Grand Total
Number of employees	21 896	9 822	30 124	6 938	2 838	3 116	9 815	84 549
Number of permanent employees[2]	21 237	9 666	25 534	6 569	2 768	3 070	9 394	78 238
Number of temporary employees[2]	648	58	1 529	369	70	43	108	2 825
Number of full-time employees[2]	21 879	9 724	26 185	6 630	2 806	3 113	9 417	79 754
Number of part-time employees[2]	6	0	876	308	32	0	85	1 307

Notes

1. Data is externally assured in 2023.
2. Data covers 96% of the headcount in 2023.
3. Employees level detail not collected or is blank.

Ethics & compliance data

	2020	2021	2022	2023	Year-on-year change 2022–2023	2022 data assured	Notes
Total number of concerns reported	**776**	**853**	**1033**	**1056**	**2%**	●	1
Conflict of Interest	37	33	59	54	-8%		
Controllership	90	87	70	100	43%		
Dealing with Government Officials	8	1	3	1	-67%		
Fair Competition	9	6	5	4	-20%		
Fair Employment (all HR-related)	290	333	540	505	-6%		
Guidance	113	123	118	108	-8%		
Human Rights	1	5	1	0	-100%		
Improper Payments	9	16	5	8	60%		
Insider trading	3	1	1	1	0%		
Intellectual Property & Confidential Information	51	50	48	49	+2%		
Privacy	6	14	16	27	69%		
Trade Compliance	5	7	4	24	500%		
Wellbeing, Health, Safety and Environment	29	46	19	21	11%		
Working with Suppliers	67	52	79	71	-10%		
Other	58	79	65	83	28%		
Number of investigations closed by the Business Integrity Group	330	370	358	483	35%	●	1
Number of allegations substantiated with 'cause found' after investigation	106	72	131	159	21%	●	
Number of employees given a written warning on grounds of violation of Code of Conduct	20	15	23	37	61%		
Number of employees dismissed on grounds of a violation of the Code of Conduct	16	13	20	22	10%		
Share of employees who completed the annual training on ethical business practices	96%	97%	98%	98%	0	●	

Notes

1. Total reported concern and investigation figures may vary from what has been previously reported due to subsequent count reconciliations resulting from duplicate reported concerns and other similar minor reconciliations.

Supply chain management data

	2020	2021	2022	2023	Year-on-year change 2022–2023	2023 data assured	Notes
Supplier audits and assessments							
Number of Corporate responsibility (CR) on-site audits (focused on labor conditions and environment) against Nokia Supplier Requirements and SA8000	24	64	67	141	110%	●	1
Closure percentage of non-conformities identified at CR-audits, within audit closure target time	67%	67%	78%	55%	-23	●	
Number of on-site system audits against Nokia Supplier Requirements	27	36	33	48	45%	●	
Number of suppliers assessed on corporate responsibility in EcoVadis Sustainable Supply Management platform	340	339	379	446	18%		
Share of active suppliers rated “satisfactory” or above on their assessment of sustainability by EcoVadis	72%	75%	76%	61%	-15		
Share of relevant suppliers delivering high-risk activity covered by our H&S Maturity Assessment	97%	99%	99%	99%	0	●	
Share of suppliers assessed by our H&S Maturity Assessment process meeting ‘H&S compliant supplier’ status	99%	98%	98%	99%	+1	●	
Number of suppliers assessed on their climate change impact based on their CDP reporting for Nokia	430	441	481	458	-5%		
Number of suppliers that set GHG emission reduction targets in CDP	262	296	278	283	2%		
Materials traceability							
Share of suppliers that have achieved full visibility to the smelters in our supply chain	98%	99%	99%	94%	-5		
Share of suppliers that have achieved conflict free status, %	95%	97%	98%	81%	-17	●	2

Notes

1. 2023 number includes nine CR audits that relate to 2022, which have been reported to the company during 2023.
2. The indicator is based on two factors: 1) Supplier having completed smelter identification; 2) All smelters that are reported for suppliers are either conflict-free, active in the process as per industry’s assurance program or low risk for sourcing from conflict-affected or high-risk areas.

Management systems data

	2020	2021	2022	2023	Year-on-year change 2022–2023	Notes
ISO 14001 certified environmental management system, % of sites covered	53%	53%	54%	55%	+1	2, 3, 4, 5, 6, 7
ISO 45001 certified occupational health and safety management system, % of sites covered	52%	52%	53%	53%	0	2, 3, 4, 5, 6, 7
ISO 9001 certified quality management system, % of sites covered	60%	59%	62%	60%	-2	1, 3, 4, 5, 6, 7
ISO 14001 certified environmental management system, % of employees covered	90%	88%	86%	90%	+4	2, 8, 9, 11, 12, 14
ISO 45001 certified occupational health and safety management system, % of employees covered	85%	84%	84%	88%	+4	2, 8, 9, 11, 12, 14
ISO 9001 certified quality management system, % of employees covered	**94%**	**92%**	**89%**	**91%**	**+2**	1, 8, 9, 10, 11, 12 13, 14

Notes

1. The number of ISO 9001 certified sites is taken from BV site list: Nokia Certified Site List BVCER-NOKCSL Version: 12 - ISO9001:2015 for the certificate No.: UK012845 Version: 2 Issue date: 22/12/2023.
2. The number of ISO 14001 and ISO 45001 certified sites is taken from BV site list: Nokia Certified Site List BVCER-NOKCSL Version: 11 Last Updated: 09/12/2022, and the sites added based on 2023 extension to scope program (those new sites will be added to the certified site list after completion of Technical Review by BV in early 2024), plus sites from ASN ISO 14001 and ISO 45001 certificates (UK011667, UK011668) less sites closed.
3. Number of sites certified is reduced due to site closures / consolidations etc.
4. Multiple sites on the same location are counted as certified, when such sites are considered as part of campus for certification purposes.
5. A number of certified sites have 0 regular headcount associated with them. These are staffed from other Nokia sites on project basis.
6. Two certified sites: Brazil / Curitiba and Portugal / Amadora (Alfragide) were excluded from calculations as both are not on Real Estate Site - Summary View' report. Curitiba is a 3rd-party site, which is operating under Nokia QMS. Alfragide is considered part of Amadora site from Real Estate perspective.
7. Sites included are taken from download of Real Estate Power BI report 'Site - Summary View' showing December 2023 data - less:
   • sites with status closed, new, proposed and vacated were removed - just sites with status 'occupied' were included
   • sites with site type = car park, data center, hospitality, other, warehouse/storage were removed. Exceptions are sites with regular headcount associated with them, e.g. Adelaide, Brisbane, Ljubljana, Glendale, Mountain View
   • sites with ""Site Group Segment"" = ServCo are included. Those were excluded in previous reports
8. Total headcount figure (84549) is taken from HR P12 2023 report, less:
   • from 'HC Category' column only those described as 'In Headcount Regular' and 'In Headcount Trainee' were included. HC Category 'In Headcount External – ETL' were excluded in 2023 in order to align with Nokia approach to internal headcount calculation
   • from 'Nokia Vertical' - all verticals' headcounts are included into calculation, including IRIS, SAC, TECSS - their headcount was not included in previous reports
9. ISO 9001, ISO 14001 and ISO 45001 Certified Headcount is based on P12 2023 data for the certified sites (Nokia and ASN), less:
   • from 'Nokia Vertical' - the headcounts of IRIS, RFS, SAC, TECSS are excluded as these organizations are not covered by Nokia certifications
   • from 'HC OrgUnit N1' - the headcount of TECH Nokia Technologies is excluded (except for ISO 9001 data, where Nokia TECH Patent Portfolio headcount is included in selected sites covered by Nokia ISO 9001 certification)
   • employees, who are not mapped to the certified sites via 'Bldg Txt/ULI Street' are excluded from calculation
10. For TECH Patent Portfolio the ISO 9001 certified headcount numbers are those used for 2024 external audit planning reviewed with TECH PP representative.
11. For the sites in China the certified headcount has been collected the following way:
    • for the sites: Beijing, Chengdu, Hangzhou, Nanjing, Shanghai the certified headcount is limited to employees belonging to the following legal entities: CN66, CN77, CN80, CN91 and CN98
    • for the sites in Qingdao the certified headcount is limited to employees belonging to legal entity: CN27
    • for the sites: Changsha and Zhengzhou the certified headcount numbers are those used for 2024 external audit planning reviewed with NSB representative
12. Alcatel Submarine Networks (ASN) sites: Calais, Les Ulis (former Nozay) and Greenwich are covered by Nokia global 9K certificate and hold ASN ISO 14001 and ISO 45001 multisite certificates.
13. Additionally, due to the specificity of their certification scope ASN holds a standalone ISO 9001 certificate for Trondheim (Norway).
14. Where it appears that the site has now moved then headcount from new site is recorded against old site in certified list etc.

Financial data

	2020	2021	2022	2023	Year-on-year change 2022–2023	Notes
Net sales, EUR million	21 852	22 202	24 911	22 258	-11%	1
Operating profit (loss), EUR million	885	2 158	2 318	1 688	-27%	1
R&D expenses, EUR million	4 087	4 214	4 550	4 327	-5%	1

Notes

1. Numbers include Nokia Group continuing operations.
   Financial indicators are included in the audited financial statements. Please see Auditor's Report from page 208 onwards in "Nokia in 2023" annual report.

Independent practitioner's assurance report

To the Management of Nokia Corporation

We have been engaged by the management of Nokia Corporation (business identity code 0112038-9, hereinafter also "the Company" or "Nokia") to provide a limited assurance on the selected sustainability disclosures in the Nokia's People & Planet Report 2023 for the reporting period of January 1, 2023 to December 31, 2023. The assured information is indicated in the Key data and reporting principles section, pages 96–105, of the Nokia People & Planet Report 2023 (hereinafter "Selected sustainability information").

Selected sustainability information

The scope of our work was limited to assurance over the information summarized below. The information covers Nokia Group (continuing operations), as indicated in the People & Planet Report 2023. We have not been engaged to provide assurance on any information relating to prior reporting periods or any other information in the People & Planet Report 2023.

Environmental indicators

1. Progress against Science-based target (SBT)
2. Scope 1 greenhouse gas (GHG) emissions, by sources (metric tons CO_2e) and change to 2022 (%)
3. Scope 2 GHG emissions, market based, and location based (metric tons CO_2e) and change to 2022 (%)
4. Energy consumption within Nokia, by types of energy (GWh) and change to 2022 (%)
5. Renewable electricity amount (GWh) and portion of total electricity consumption (%) and change to 2022 (%)
6. Water withdrawal in facilities (m^3) and change to 2022 (%)
7. Scope 3 emissions from purchased goods and services and change to 2022 (%)
8. Scope 3 emissions from upstream and downstream transportation and distribution and change to 2022 (%)
9. Scope 3 GHG emissions: use of sold products (tons CO_2e) and change to 2022 (%)
10. Waste amounts by treatment type (metric tons) and utilization rate (%), within Nokia and change to 2022 (%)
11. Voluntary product takeback from customers: Weight by treatment type (metric tons) and number of returned equipment reused/ refurbished and change to 2022 (%)

Social indicators

1. Share of employees who have completed the annual training on ethical business practices (EBT) (%)
2. Number of concerns reported, number of investigations closed by the Business Integrity Group and number of allegations substantiated with 'cause found' after investigation
3. Share of all high-risk projects with implementation assessment completed and share of those projects meeting our non-negotiable requirements (%)
4. Number of work-related employee fatalities and critical incidents and number of work-related contractor and subcontractor fatalities and critical incidents
5. Share of cases coming to Human Rights Due Diligence (HRDD) process with "go", "no go" and "go with conditions" (%)
6. Safety tours executed and reported with senior leaders
7. Female share of new hires (%)
8. Number of Nokia employees by region and by gender
9. Number of direct beneficiaries reached by our corporate social responsibility programs.

Supplier indicators

1. Share of suppliers delivering high-risk activity assessed by using H&S Maturity Assessment Process and share of assessed suppliers meeting "H&S compliant supplier"-status (%)
2. Number of system audits against Nokia Supplier Requirements
3. Number of corporate responsibility on-site audits (focused on labor conditions and environment) against Nokia Supplier Requirements and SA8000 and closure percentage of non-conformities (%)
4. Number of forced labor non-compliance instances from supplier audits
5. Share of suppliers that have achieved conflict free status (%)
6. Aggregated weighted share (%) of suppliers that have achieved satisfactory scores in sustainability assessment programs of the supplier performance evaluation.

Management's responsibility

The Management of the Company is responsible for the preparation of the Selected sustainability information in accordance with the Reporting criteria as set out in the Company's own documented standards and GHG Protocol (hereinafter also "the Reporting criteria"). This responsibility includes: designing, implementing and maintaining internal control relevant to the preparation and fair presentation of the Selected sustainability information that are free from material misstatement, whether due to fraud or error, selecting and applying appropriate criteria and making estimates that are reasonable in the circumstances.

Assurance provider's responsibility

Our responsibility is to express a limited assurance conclusion on the Selected sustainability information based on our engagement. We conducted our assurance engagement in accordance with International Standard on Assurance Engagements (ISAE) 3000 (Revised), Assurance Engagements Other than Audits or Reviews of Historical Financial Information.

ISAE 3000 standard requires that we comply with ethical requirements and plan and perform the assurance engagement to obtain limited assurance whether any matters come to our attention that cause us to believe that the Selected sustainability information has not been prepared, in all material respects, in accordance with the Reporting criteria.

We did not perform any assurance procedures on the prospective information, such as targets, expectations and ambitions, disclosed in the Selected sustainability information. Consequently, we draw no conclusion on the prospective information. Our assurance report is made in accordance with the terms of our engagement with Nokia. We do not accept or assume responsibility to anyone other than Nokia for our work, for this assurance report, or for the conclusions we have reached.

Although we consider the effectiveness of internal controls when determining the nature and extent of our procedures, our assurance engagement is not designed to provide assurance on internal controls. Our procedures did not include testing controls or performing procedures related to data consolidation and calculation within IT systems. Our limited assurance engagement consists of inquiries of persons responsible for the preparation of the sustainability report and related information, and performing analytical and other procedures.

A limited assurance engagement with respect to responsibility related data involves performing procedures to obtain evidence about the Selected sustainability information. The procedures performed depend on the practitioner's judgment, but their nature is different from, and their extent is less than, a reasonable assurance engagement. They do not include detailed testing of source data or the operating effectiveness of processes and internal controls, and consequently they do not enable us to obtain the assurance necessary to become aware of all significant matters that might be identified in a reasonable assurance engagement.

Our procedures on this engagement included:

- Interviewing senior management of the Company;
- Conducting interviews with employees responsible for the collection and reporting of the Selected sustainability information and reviewing of the processes and systems for data gathering, including the aggregation of the data for the Selected sustainability information;
- Reviewing internal and external documentation to verify to what extent these documents and data support the information included in the Selected sustainability information and evaluating whether the information presented in the Selected sustainability information is in line with our overall knowledge of corporate sustainability at Nokia;
- Performing analytical review procedures and testing data on a sample basis to assess the reasonability of the presented Selected sustainability information;
- Conducting an interview with relevant employees located at Nokia's sites in Finland and India;
- Assessing that the Selected sustainability information has been prepared in accordance with the Reporting criteria.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.

Our independence, quality control, and competences

We have complied with Deloitte's independence policies which address and, in certain cases, exceed the requirements of the Code of Ethics for professional accountants issued by the International Ethics Standards Board for Accountants. We have maintained our independence and objectivity throughout the year, and there were no events or prohibited services provided which could impair our independence and objectivity.

Deloitte Oy applies International Standard on Quality Control 1 and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. This engagement was conducted by a multidisciplinary team including assurance and sustainability expertise with professional qualifications. Our team is experienced in providing sustainability reporting assurance.

Conclusion

Based on the procedures we have performed, nothing has come to our attention that causes us to believe that Nokia's Selected sustainability information for the reporting period ended December 31, 2023 is not properly prepared, in all material respects, in accordance with the Reporting criteria.

Our assurance statement should be read in conjunction with the inherent limitations of accuracy and completeness for sustainability information.

Helsinki, 5 March, 2024

Deloitte Oy

Marika Nevalainen, Partner
Authorized Public Accountant (KHT)

Johan Groop, Partner
Authorized Public Accountant (KHT)

Our Key ESG frameworks – GRI, SASB and UN SDGs

In our reporting, we take into account various sustainability reporting frameworks and are committed to expanding our transparency and our coverage.

We have prepared our 2023 People & Planet report in accordance with the GRI Standards.

Statement of use: Nokia Corporation has reported in accordance with the GRI Standards for the period 1.01.2023–31.12.2023. GRI 1: Foundation 2021 used, while no applicable GRI Sector Standards.

We have also evaluated how our business supports reaching the United Nations Sustainable Development Goals (SDGs) and mapped them with the GRI standards. This relation is shown in the GRI index on the following pages.

We have also utilized SASB Standards to report on industry-specific sustainability topics (see SASB index on p. 126). Nokia's primary SASB industry is considered to be Hardware but we have also included selected metrics from the Telecommunication Services standard to better align with our business.

Some discolures are covered only partly as not all information required within GRI and SASB disclosures is either relevant for our business and stakeholders or feasible to collect.

GRI content index

GRI standard and disclosure		Response	Additional information	Related SDGs
GRI 2: General Disclosures 2021				
The organization and its reporting practices				
2-1	Organizational details	a. Nokia Corporation b. Nokia Corporation, a public limited liability company incorporated and domiciled in Helsinki, Finland, is the parent company (Parent Company or Parent) for all its subsidiaries (Nokia or the Group). The Group is listed on the Nasdaq Helsinki Stock Exchange, the New York Stock Exchange and the Euronext Paris Stock Exchange c. Espoo, Finland d. People & Planet 2023: Nokia today p. 5		5, 8
2-2	Entities included in the organization's sustainability reporting	Nokia in 2023: Notes to the consolidated financial statements: Note 1.2. General accounting policies (Principles of consolidation) p. 135; Note 6.2. Group companies p. 189		5, 8, 10
2-3	Reporting period, frequency and contact point	a. January 1–December 31, 2023; Annual b. For the fiscal year ended 31 December 2023 c. March 7, 2024 d. sustainability.global@nokia.com		
2-4	Restatements of information	People & Planet 2023: Key data and reporting principles p. 91	In 2023, no significant restatements of information made from previous reporting period.	
2-5	External assurance	People & Planet 2023: Independent practitioner's assurance report p. 108		
Activities and workers				
2-6	Activities, value chain, and other business relationships	a. People & Planet 2023: Nokia today p. 5 b. People & Planet 2023: Sustainable supply chain pp. 57–66 c. We create technology that helps the world act together. As a trusted partner for critical networks, we are committed to innovation and technology leadership across mobile, fixed and cloud networks. We create value with intellectual property and long-term research, led by the award-winning Nokia Bell Labs. Adhering to the highest standards of integrity and security, we help build the capabilities needed for a more productive, sustainable and inclusive world. For more information, see Nokia in 2023: Business groups p. 23 d. Nokia in 2023: Significant subsequent events p. 124		
2-7	Employees	People & Planet 2023: Nokia today p. 5; People data p. 101	Due to legal restrictions at several locations Nokia does not monitor/ track any other gender besides male and female in Nokia global employee database.	

GRI standard and disclosure		Response	Additional information	Related SDGs
2-8	Workers who are not employees	People & Planet 2023: Data reporting principles pp. 92–95; People data p. 101 “Apprentices & Interns” are in Nokia's HRI (P24) and Nokia internal headcount reporting as employees under “Trainees”. Nokia tracks limited information on individual workers engaged as “External Temporary Labor” (ETL’s) through procurement process via individual contract.	Other workers that are engaged/procured via “service contract” (generally referred to as sub-contractors or agency workers) are not individually tracked or reported. Nokia contracts for a service regardless of number of individuals provided by the sub-contracted, external supplier company to support the contracted service.	
Governance				
2-9	Governance structure and composition	People & Planet 2023: Managing sustainability pp. 80–82 Nokia in 2023: Corporate governance statement pp. 34–55 nokia.com: Governance and materiality		
2-10	Nomination and selection of the highest governance body	Nokia in 2023: Corporate governance statement pp. 34–55		
2-11	Chair of the highest governance body	Nokia in 2023: Corporate governance statement pp. 34–55		
2-12	Role of the highest governance body in overseeing the management of impacts	People & Planet 2023: Our approach pp. 6–19; Managing sustainability pp. 80–82; Compliance as a business group enabler pp.85–86 Nokia in 2023: Corporate governance statement pp. 34–55 nokia.com: Enagaging with stakeholders; Governance and materiality		
2-13	Delegation of responsibility for managing impacts	People & Planet 2023: Managing sustainability pp. 80–82 Nokia in 2023: Corporate governance statement pp. 34–55 nokia.com: Governance and materiality		
2-14	Role of the highest governance body in sustainability reporting	People & Planet 2023: Managing sustainability pp. 80–82 nokia.com: Governance and materiality		
2-15	Conflict of interest	People & Planet 2023: Ethics and compliance pp. 83–84	Conflict of interest related to: cross-board membership; cross-shareholding with suppliers and other stakeholders	
2-16	Communication of critical concerns	People & Planet 2023: Managing sustainability pp. 80–82; Reporting concerns without fear of retaliation p. 84 nokia.com: Governance and materiality	Nokia includes all concerns including critical concerns raised through grievance mechanisms and other processes.	

GRI standard and disclosure		Response	Additional information	Related SDGs
2-17	Collective knowledge of the highest governance body	People & Planet 2023: Managing sustainability pp. 80–82 Nokia in 2023: Corporate governance statement pp. 34–55 nokia.com: Governance and materiality		
2-18	Evaluation of the performance of the highest governance body	Nokia in 2023: Corporate governance statement pp. 34–55		
2-19	Remuneration policies	Nokia in 2023: Compensation and benefits p. 149		
2-20	Process to determine remuneration	Nokia in 2023: Compensation and benefits p. 149		
2-21	Annual total compensation ratio	Nokia in 2023: Compensation and benefits p. 149		
Strategy, policies and practices				
2-22	Statement on sustainable development strategy	People & Planet 2023: Letter from the President and CEO pp. 3-4		
2-23	Policy commitments	a. Nokia is committed to the UN Global Compact's ten principles, including principle 7 on supporting a precautionary approach to environmental challenges. Nokia follows the precautionary principle, especially in areas involving environmental risks. b. People & Planet 2023: Fair workplace and our policies pp. 51-52; Human Rights pp. 73-74; Ethics and compliance pp. 83–84 nokia.com: Code of Conduct		
2-24	Embedding policy commitments	People & Planet 2023: Fair workplace and our policies pp. 51-52; Code of Conduct, p. 83; Anti-Corruption Center of Excellence and Third-Party Program pp. 87-88		
2-25	Processes to remediate negative impacts	People & Planet 2023: Reporting of critical concerns without fear of retaliation p. 84; Compliance as a business group enabler pp. 85–86; nokia.com: Code of Conduct		
2-26	Mechanisms for seeking advice and raising concerns	People & Planet 2023: Ethics and compliance pp. 83–84 nokia.com: Code of Conduct		
2-27	Compliance with laws and regulations	People & Planet 2023: Ethics and compliance pp. 83-84	There were no significant instances of non-compliance with laws and regulations or no fines were paid during the reporting period (January 1st – December 31st, 2023).	

GRI standard and disclosure		Response	Additional information	Related SDGs
2-28	Membership associations	Where the name of the association is bolded Nokia has cooperation specifically related to sustainability. Main industry cooperation: **Groupe Speciale Mobile Association (GSMA)**, Global Mobile Suppliers Association (GSA), DIGITALEUROPE, European Telecommunications Network Operators' Association (ETNO), European Round Table of Industrialists (ERT), Technology Industries of Finland, Cellular Telecom Industry Association (CTIA), Telecommunications Industry Association (TIA), **EU Code of Conduct on Energy Consumption of Broadband Equipment**, French Alliance of Digital Industries (AFNUM), Bitkom, International Institute of Communications (IIC), U.S. Chamber of Commerce, Competitive Carriers Association, Schools Libraries & Broadband Coalition, Australian Mobile Telecommunications Association, **Responsible Business Alliance, International Electronics Manufacturing Initiative (iNEMI), Energy Star**. Main standardization and technology cooperation: **3rd Generation Partnership Project (3GPP), European Telecommunications Standards Institute (ETSI), International Telecommunication Union (ITU)**, Internet Engineering Task Force (IETF), 5G Infrastructure Public Private Partnership (5G PPP), Linux Foundation, 5G Automotive Association (5GAA), 5G Alliance for Connected Industries and Automation (5G-ACIA), Broadband Forum (BBF), NextG Alliance, Communications Alliance, Alliance for Telecommunications Industry Solutions (ATIS), China Communications Standards Association (CCSA), Institute of Electrical and Electronics Engineers (IEEE), **Open RAN Alliance (O-RAN), International Organization for Standardization (ISO), European Committee for Standardization and Electrotechnical Standardization (CEN/CENELEC), Telecommunications Standards Development Society in India (TSDSI)**. Main memberships related specifically to sustainability: United Nations Broadband Commission for Sustainable Development, the United Nations Global Compact, Global Network Initiative, Finnish Business and Society FiBS, Public-Private Alliance for Responsible Minerals Trade (PPA), CDP Supply Chain, EcoVadis, @talentEgal (France), Responsible Business Alliance and Responsible Minerals Initiative, European Green Digital Coalition, First Movers Coalition.		

GRI standard and disclosure		Response	Additional information	Related SDGs
Stakeholder engagement				
2-29	Approach to stakeholder engagement	People & Planet 2023: Engaging with our stakeholders pp. 16–17; Our culture p. 48; Responsible sourcing pp. 58–62 nokia.com: Engaging with stakeholders		
2-30	Collective bargaining agreements	People & Planet 2023: Fair workplace and our policies pp. 51-52 nokia.com: More on collective bargaining		

GRI standard and disclosure		Response	Additional information	Related SDGs
GRI 3: Material Topics 2021				
3-1	Process to determine material topics	People & Planet 2023: Our approach pp. 6–19; From impact to double materiality p. 10 nokia.com: Governance and materiality		
3-2	List of material topics	In spring 2022, we completed materiality impact assessment resulting with the materiality matrix. The materiality matrix was reviewed by the Group Leadership Team and the Board of Directors and consists of 14 grouped topics: Climate impact through products and enabling transformation in other industries Ethical business practices and ethical use of new technologies Privacy and security Responsible sourcing Health and safety of employees Circularity Impact innovation Digital inclusion Human rights Diversity and inclusion Employees' skills Nokia's own environmental impact Community participation Biodiversity In order to provide in-depth disclosure of Nokia's sustainability impact, we set a threshold to prioritise the topics for reporting from the most material topics in the materiality assessment. Our threshold defines 13 topics of the material topics in the matrix for reporting with the highest significance and relevance to our business and to stakeholders, the economy and the environment. The research on Biodiversity topic and its business impact is ongoing and it is not reported for 2023. The terminology we use when communicating about material topics is slightly different from the GRI terminology.		

GRI standard and disclosure		Response	Additional information	Related SDGs
3-3	Management of material topics			
	a	People & Planet 2023: Our sustainability strategy p. 9; Key data and reporting principles pp. 91–107 nokia.com: Governance and materiality See also GRI 3–2 List of material topics within this index.		
	b	People & Planet 2023: Our sustainability strategy p. 9; Key data and reporting principles pp. 91–107 nokia.com: Governance and materiality See also GRI 3–2 List of material topics within this index.		
	c	Not all of our policies are available for the public, but for example following policies and statements can be accessed at nokia.com on our Policies and Sustainability downloads pages: Environmental policy Responsible minerals policy Human rights policy Human resources framework Health, safety and labor conditions policy Quality policy An overview of our supplier requirements on CSR Privacy statement Modern slavery statement	nokia.com: Code of Conduct nokia.com: Policies nokia.com: Sustainability downloads	

GRI standard and disclosure	Response	Additional information	Related SDGs
d	**ECONOMIC** Economic performance; Indirect economic impact: People & Planet 2023: Our economic impact pp. 89–90 Procurement practices: People & Planet 2023: Responsible sourcing pp. 58–62; Materials traceability and responsible sourcing of minerals pp. 63-64 Anti–corruption; Anti–competitive behavior: People & Planet 2023: Anti-Corruption Center of Excellence and Third-Party Program pp. 87-88 **ENVIRONMENTAL** Materials; Energy; Biodiversity; Emissions; Effluents and waste; Environmental compliance; Supplier environmental assessment: People & Planet 2023: Climate pp. 21–23; Decorbonizing our value chain pp. 24-30; Circularity pp. 31-35; Biodiversity pp. 36-37 **SOCIAL** Employment; Labor/management relation; Occupational health & safety; Training and education; Inclusion and diversity: People & Planet 2023: Our people pp. 46–56 Freedom of association and collective bargaining; Child labor; Forced or compulsory labor; Human rights assessment; Supplier social assessment: People & Planet 2023: Responsible sourcing pp. 58–62; Strengthening our health and safety performance pp. 65-66; Addressing human rights pp. 74; Fair work place and our policies pp. 51-52 Customer health and safety; Customer privacy: People & Planet 2023: Strengthening our health and safety performance pp. 65-66; Security and privacy pp. 76–78 Socioeconomic compliance: People & Planet 2023: Ethics and compliance pp. 83–88		
e	See 3-3-c and 3-3-d		
f	People & Planet 2023: Engaging with our stakeholders pp. 16–17; Responsible sourcing pp. 58–62; Our culture p. 48 nokia.com: Engaging with stakeholders		

GRI standard and disclosure		Response	Additional information	Related SDGs
GRI 201: Economic performance 2016				
201-1	Direct economic value generated and distributed	People & Planet 2023: Our economic impact pp. 89–90		2, 5, 7, 8, 9
201-2	Financial implications and other risks and opportunities for the organization's activities due to climate change	People & Planet 2023: Managing sustainability pp. 80–82 Nokia in 2023: Sustainability and corporate responsibility pp. 87–114; Risk factors pp. 121–123	See also Nokia's response to the CDP Climate Change survey for more details at nokia.com: **Sustainability downloads**.	
GRI 203: Indirect economic impacts 2016				
203-1	Infrastructure investments and services supported	People & Planet 2023: Decarbonizing our value chain pp. 24–30		2, 5, 7, 9
203-2	Significant indirect economic impacts	People & Planet 2023: Decarbonizing our value chain pp. 24–30; Our economic impact pp. 89–90		1, 2, 3, 8, 9, 10, 17
GRI 204: Procurement practices 2016				
Own metric	Procurement practices	People & Planet 2023: Responsible sourcing pp. 58–62; Materials traceability and responsible sourcing of minerals pp. 63-64		1, 8
GRI 205: Anti-corruption 2016				
205-2	Communication and training about anti-corruption policies and procedures	People & Planet 2023: Compliance as a business group enabler pp. 85-86		16
205-3	Confirmed incidents of corruption and actions taken	In general, disclosures about material litigations, enforcement actions, and investigations are made in quarterly and annual public filings of Nokia Corporation. There are no additional matters to be disclosed.		16

GRI standard and disclosure		Response	Additional information	Related SDGs
GRI 206: Anti-competitive Behavior 2016				
206-1	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes	Legal actions pending or completed in 2023 regarding anticompetitive behavior in which Nokia is identified as participant. 1) In June 2017, the Spanish competition authority (CNMC) found that Nokia had violated competition law by abusing a dominant position in the Spanish railway sector and fined Nokia EUR 1.7 million. The case resulted from a complaint by a competitor concerning a tender for the supply of railway communications equipment. Nokia disagrees with the CNMC's decision and has filed an appeal with the Spanish National Court that is currently pending. 2) In August 2018, the CNMC opened antitrust investigations against several companies and individuals, including Nokia Spain, alleging anticompetitive behaviour and cooperation among competitors between 2003 and 2016 in the Spanish railways sector. In September 2021, the CNMC charged Nokia with alleged participation in an illegal cartel (2007-2014) on railway signaling tenders and fined Nokia EUR 24 million. CNMC fined Alstom, Bombardier, Caf, Cobra, Nokia, Siemens Rail, Siemens S.A. and Thales, and 10 of their executives (none from Nokia) EUR 127 million for alleged participation from 2002-2017 in a cartel that fraudulently shared at least 82 tenders of the Ministry of Development, the Railway Infrastructure Manager and subsequently Adif for the construction, supply and installation of the Alta Velocidad Espanola high speed rail and conventional rail network. CNMC recommends exclusion from future tenders. Nokia disagrees with the assessment and has filed an appeal with the Spanish National Court that is currently pending.	In 2023, there were no other formal investigations of alleged violations of competition or antitrust laws by Nokia, or any other findings of violations of competition or antitrust laws by Nokia, as far as Nokia is aware.	16

GRI standard and disclosure		Response	Additional information	Related SDGs
GRI 301: Materials 2016				
301-1	Materials used by weight or volume	People & Planet 2023: Circularity pp. 31–35	Nokia recognizes the need to identify and control the materials and substances used in our products and sales packaging. Detailed material requirements specifications for parts and components delivered to Nokia by our suppliers can be found in the Nokia Substance List available at nokia.com: Sustainability downloads. Total volume and weight of materials is considered proprietary information.	8, 12
301-3	Reclaimed products and their packaging materials	People & Planet 2023: Circularity pp. 31-35		8, 12
GRI 302: Energy 2016				
302-1	Energy consumption within the organization	People & Planet 2023: Key data and reporting principles p. 91-95; Environmental data pp. 96–100		7, 8, 12, 13
302-2	Energy consumption outside of the organization	People & Planet 2023: Key data and reporting principles p. 91-95; Environmental data pp. 96–100		7, 8, 12, 13
302-3	Energy intensity	People & Planet 2023: Environmental data pp. 96–100		7, 8, 12, 13
302-4	Reduction of energy consumption	People & Planet 2023: Decarbonizing our value chain pp. 24–30; Environmental data pp. 96–100		7, 8, 12, 13
302-5	Reduction of energy requirements of products and services	People & Planet 2023: Decarbonizing our value chain pp. 24–30		7, 8, 12, 13
GRI 305: Emissions 2016				
305-1	Direct (Scope 1) greenhouse gas emissions	People & Planet 2023: Decarbonizing our value chain pp. 24–30; Environmental data pp. 96–100		3, 12, 13, 14, 15
305-2	Energy indirect (Scope 2) greenhouse gas emissions	People & Planet 2023: Environmental data pp. 96–100		3, 12, 13, 14, 15
305-3	Other indirect (Scope 3) greenhouse gas emissions	People & Planet 2023: Environmental data pp. 96–100		3, 12, 13, 14, 15
305-4	Greenhouse gas emissions intensity	People & Planet 2023: Environmental data pp. 96–100		13, 14, 15

GRI standard and disclosure		Response	Additional information	Related SDGs
305-5	Reduction of greenhouse gas emissions	People & Planet 2023: Decarbonizing our value chain pp. 24–30; Environmental data pp. 96–100		13, 14, 15
305-7	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	People & Planet 2023: Environmental data pp. 96–100		3, 12, 15
GRI 306: Waste 2020				
306-1	Waste generation and significant waste-related impacts	People & Planet 2023: Circularity pp. 31–35		
306-2	Management of significant waste-related impacts	People & Planet 2023: Circularity pp. 31–35		
306-3	Waste generated	People & Planet 2023: Circularity pp. 31–35; Environmental data pp. 96–100	Nokia reports waste data by treatment method, not by composition.	3, 12
306-4	Waste diverted from disposal	People & Planet 2023: Circularity pp. 31–35; Environmental data pp. 96–100	Nokia reports waste data by treatment method, not by composition. Waste is sorted onsite and waste treatment conducted offsite.	3, 12
306-5	Waste directed to disposal	People & Planet 2023: Circularity pp. 31–35; Environmental data pp. 96–100	Nokia reports waste data by treatment method, not by composition.	3, 12
GRI 308: Supplier Environmental Assessment 2016				
308-1	New suppliers that were screened using environmental criteria	People & Planet 2023: Responsible sourcing pp. 58–62; Materials traceability and responsible sourcing of minerals pp. 63-64	Nokia's SIQ (supplier information questionnaire) includes environmental criteria. Suppliers of strategic importance that are new to Nokia or have significant changes in their operations are subject to system audits to check compliance with our requirements.	
308-2	Negative environmental impacts in the supply chain and actions taken	People & Planet 2023: Responsible sourcing pp. 58–62; Materials traceability and responsible sourcing of minerals pp. 63-64		
GRI 401: Employment 2016				
401-1	New employee hires and employee turnover	People & Planet 2023: Our employees at the end of 2023 p. 47; Recruitment p. 52; People data pp. 101-103 nokia.com: Inclusion & diversity		5, 8, 10

GRI standard and disclosure		Response	Additional information	Related SDGs
GRI 402: Labor/management relations 2016				
402-1	Minimum notice periods regarding operational changes	People & Planet 2023: Providing support during transformation p. 52		8
GRI 403: Occupational Health and Safety 2018				
403-1	Occupational health and safety management system	People & Planet 2023: Health and well-being p. 56; Strengthening our health and safety performance pp. 65-66; Management systems data p. 106		
403-2	Hazard identification, risk assessment, and incident investigation	People & Planet 2023: Strengthening our health and safety performance pp. 65-66 nokia.com: Health & Safety		
403-3	Occupational health services	People & Planet 2023: Strengthening our health and safety performance pp. 65-66; Health and safety Supplier Maturity Assessment p. 60		
403-4	Worker participation, consultation, and communication on occupational health and safety	People & Planet 2023: Health and well-being p. 56; Strengthening our health and safety performance pp. 65-66 nokia.com: Health & Safety		
403-5	Worker training on occupational health and safety	People & Planet 2023: Strengthening our health and safety performance pp. 65-66 nokia.com: Health & Safety		
403-6	Promotion of worker health	People & Planet 2023: Strengthening our health and safety performance pp. 65-66; Health and safety Supplier Maturity Assessment p. 60 nokia.com: Health & Safety		
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	People & Planet 2023: Strengthening our health and safety performance pp. 65-66; Health and safety Supplier Maturity Assessment p. 60 nokia.com: Health & Safety		
403-8	Workers covered by an occupational health and safety management system	People & Planet 2023: Strengthening our health and safety performance pp. 65-66; Management systems data p. 106		
403-9	Work-related injuries	People & Planet 2023: Strengthening our health and safety performance pp. 65-66; People data pp. 101-102		3, 8

GRI standard and disclosure		Response	Additional information	Related SDGs
GRI 404: Training and Education 2016				
404-1	Average hours of training per year per employee	People & Planet 2023: People development pp. 49–50; People data pp. 101-103		4, 5, 8, 10
404-2	Programs for upgrading employee skills and transition assistance programs	People & Planet 2023: People development pp. 49–50; Providing support during transformation p. 52		8
404-3	Percentage of employees receiving regular performance and career development reviews	People & Planet 2023: Talent and performance management p. 49		8, 10
GRI 405: Diversity and Equal Opportunity 2016				
405-1	Diversity of governance bodies and employees	People & Planet 2023: Inclusion and diversity pp. 53–55; People data pp. 101–103 Nokia in 2023: Corporate governance statement pp. 34–55	Nokia does not track the employees by minority group memberships globally.	5, 8
405-2	Ratio of basic salary and remuneration of men to women	People & Planet 2023: Inclusion and diversity pp. 53–55		5, 8, 10
GRI 406: Non-discrimination 2016				
406-1	Incidents of discrimination and corrective actions taken	In 2023, we closed 82 allegations related to discrimination or sexual harassment through our Ethics helpline. Each case was investigated by either HR, BIG or other members of our Legal and Compliance team. Where the allegations were substantiated, appropriate disciplinary action was taken up to and including termination of employment.		5, 8, 16
GRI 407: Freedom of Association and Collective Bargaining 2016				
Own metric	Management of Freedom of association and collective bargaining in our supply chain	People & Planet 2023: Responsible sourcing pp. 58–62		8
GRI 408: Child Labor 2016				
408-1	Operations and suppliers at significant risk for incidents of child labor	People & Planet 2023: Fair workplace and our policies pp. 51–52; Responsible sourcing pp. 58–62	For more information, see the latest Modern Slavery Statement at nokia.com: Sustainability downloads	8, 16

GRI standard and disclosure		Response	Additional information	Related SDGs
GRI 409: Forced or Compulsory Labor 2016				
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	People & Planet 2023: Fair workplace and our policies pp. 51–52; Responsible sourcing pp. 58–62	For more information, see the latest Modern Slavery Statement at nokia.com: Sustainability downloads	8
GRI 414: Supplier Social Assessment 2016				
414-1	New suppliers that were screened using social criteria	People & Planet 2023: Responsible sourcing pp. 58–62	Nokia's Supplier Information questionnaire (SIQ) includes social criteria as well as Health and Safety Maturity Assessment (SMA) conducted for all newly created services' suppliers. Suppliers of strategic importance that are new to Nokia or have significant changes in their operations are subject to system audits to check compliance with our requirements.	5, 8, 16
414-2	Negative social impacts in the supply chain and actions taken	People & Planet 2023: Responsible sourcing pp. 58–62; Materials traceability and responsible sourcing of minerals pp. 63-64		5, 8, 16
GRI 416: Customer Health and Safety 2016				
416-1	Assessment of the health and safety impacts of product and service categories	People & Planet 2023: Strengthening our health and safety performance pp. 65-66	Nokia's position statement about exposure to radio waves and health is available at nokia.com: Sustainability downloads	
GRI 418: Customer Privacy 2016				
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	People & Planet 2023: Security and privacy pp. 76–78		16

SASB index

Disclosure topic	SASB code	Accounting metric	Response
Product Security	TC-HW-230a.1	Description of approach to identifying and addressing data security risks in products	People & Planet 2023: Security and privacy pp. 76-78 nokia.com: Security and privacy
Employee Diversity & Inclusion	TC-HW-330a.1	Percentage of (1) gender and (2) diversity group representation for (a) executive management, (b) non-executive management, (c) technical employees and (d) all other employees	People & Planet 2023: Gender and age diversity p. 54, People data pp. 101-103 We report the percentage of gender representation for the Board, Group Leadership Team (Executive management), all leadership positions and all employees but we do not report employee racial/ethnic group representation or breakdown for technical employees.
Product Lifecycle Management	TC-HW-410a.4	Weight of end-of-life products and e-waste recovered; percentage recycled	People & Planet 2023: Circular practices and our products p. 31; Sustainable product design pp. 32-33; Product materials breakdown pp. 34-35
	TC-TL-440a.1	(1) Materials recovered through take back programs, percentage of recovered materials that were (2) reused, (3) recycled and (4) landfilled	People & Planet 2023: Circular practices and our products p. 31; Ensuring appropriate recycling of e-waste p. 35
Supply chain management	TC-HW-430a.1	Percentage of Tier 1 supplier facilities audited in the RBA Validated Audit Process (VAP) or equivalent, by a) all facilities and b) high-risk facilities	People & Planet 2023: Monitoring, assessment and auditing p. 59, Health and safety Supplier Maturity Assessment p. 60 In 2023, we conducted 48 audits against our full set of supplier requirements and 141 in-depth Corporate Responsibility (CR) audits. 127 of these audits were conducted through our customers' Joint Audit Cooperation (JAC) framework and through RBA Validated Assessment Process (VAP) audits. In addition to audits, our H&S maturity assessment process is a crucial part of our supplier assessment program. The H&S maturity assessments covered 99% of relevant suppliers in 2023.
	TC-HW-420a.2	Tier 1 suppliers' 1) non-conformance rate with the RBA Validated Audit Process (VAP) or equivalent, and 2) associated corrective action rate for a) priority non-conformances and b) other non-conformances	People & Planet 2023: Monitoring, assessment and auditing p. 59 In 2023, our CR audits identified 569 instances of non-compliances. The corporate audit findings closure rate was 58% for all non-conformances within 2023.
Materials sourcing	TC-HW-440a.1	Description of the management of risks associated with the use of critical materials	People & Planet 2023: Materials traceability and responsible sourcing of minerals pp. 63-64

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