LEONARDO
SUSTAINABILITY IN ACTION 2023
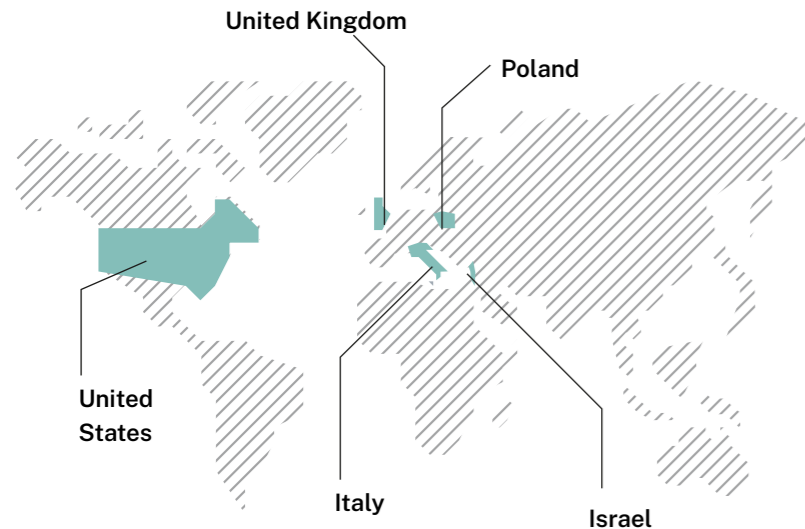
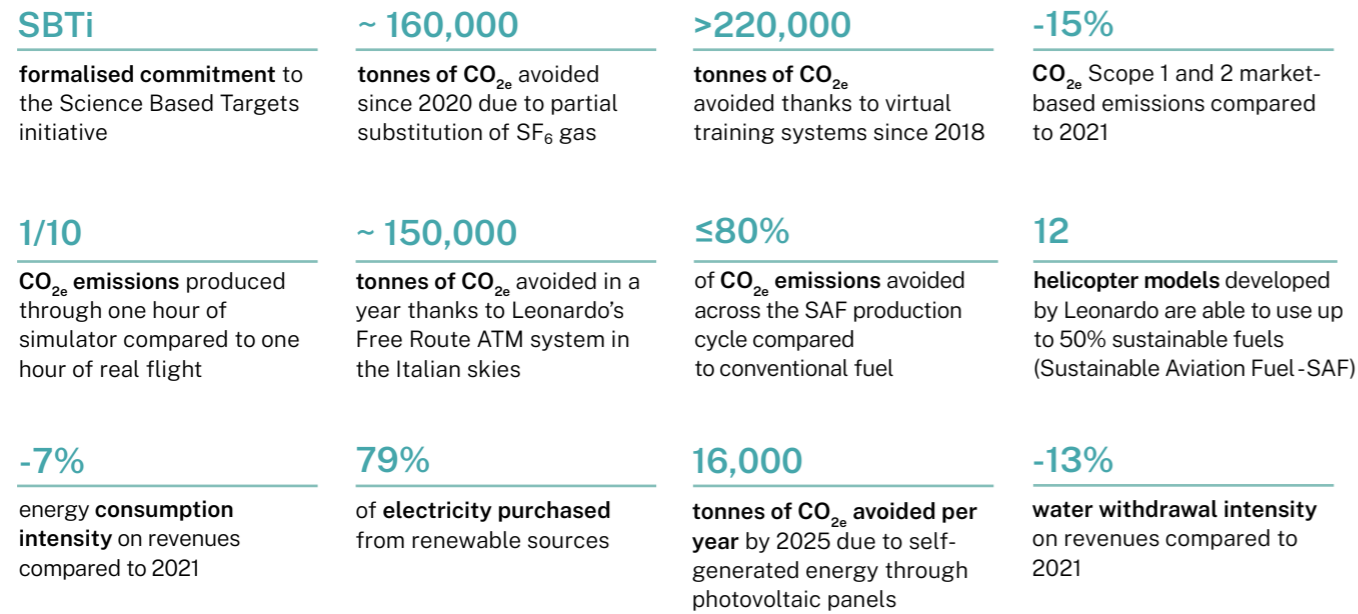# CONTENTS

FACTS AND FIGURES

LEONARDO AT A GLANCE

United Kingdom

Poland

United States

Italy

Israel

€14.7 BIL
revenues

€ 37.5 BIL
order backlog

€17.3 BIL
orders

51,392
people

105
sites worldwide

150
countries with
market presence

~10,500
suppliers
worldwide

4,000
suppliers in Italy

COMMITMENT TO THE ENVIRONMENT AND CLIMATE

SBTi

formalised commitment to the Science Based Targets initiative

~ 160,000

tonnes of CO_{2e} avoided since 2020 due to partial substitution of SF_6 gas

>220,000

tonnes of CO_{2e} avoided thanks to virtual training systems since 2018

-15%

CO_{2e} Scope 1 and 2 market-based emissions compared to 2021

1/10

CO_{2e} **emissions** produced through one hour of simulator compared to one hour of real flight

~ 150,000

tonnes of CO_{2e} avoided in a year thanks to Leonardo's Free Route ATM system in the Italian skies

≤80%

of CO_{2e} **emissions** avoided across the SAF production cycle compared to conventional fuel

12

helicopter models developed by Leonardo are able to use up to 50% sustainable fuels (Sustainable Aviation Fuel - SAF)

-7%

energy **consumption intensity** on revenues compared to 2021

79%

of **electricity purchased** from renewable sources

16,000

tonnes of CO_{2e} **avoided per year** by 2025 due to self-generated energy through photovoltaic panels

-13%

water withdrawal intensity on revenues compared to 2021

SUSTAINABLE FINANCE

UNGC CFO Coalition

support to the principles for **integrating the SDGs** into investment and finance

50%

of investments from 2022-2024 **in support of the SDGs** out of approximately 700-800 MIL annual investments

55%

of **financing sources** linked to **ESG parameters**
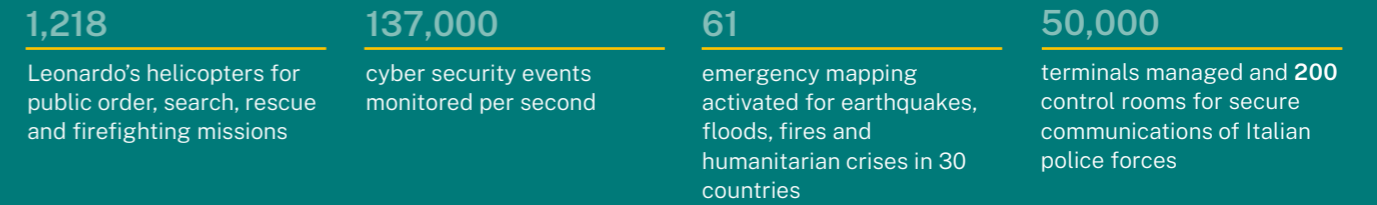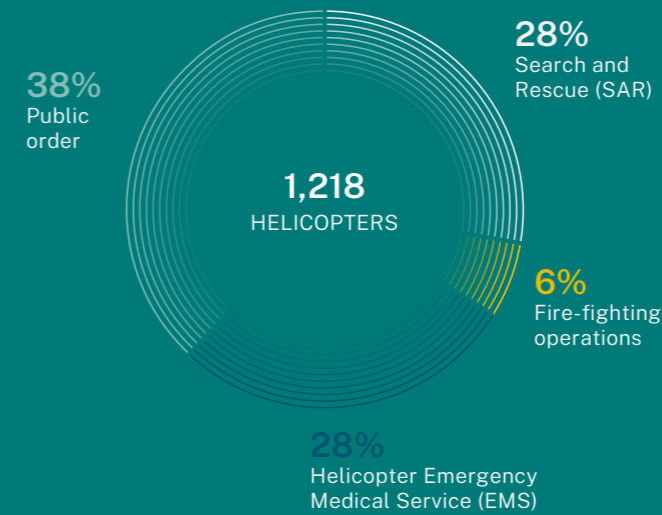
Unless otherwise indicated, all data on pages 2 and 3 refers to 2022.

SOLUTIONS AND TECHNOLOGIES FOR SUSTAINABILITY

1,218
Leonardo's helicopters for public order, search, rescue and firefighting missions

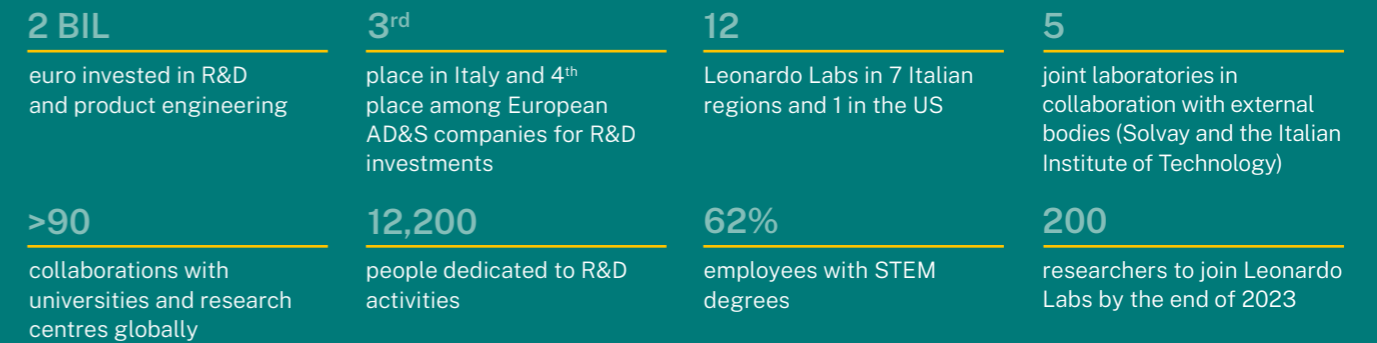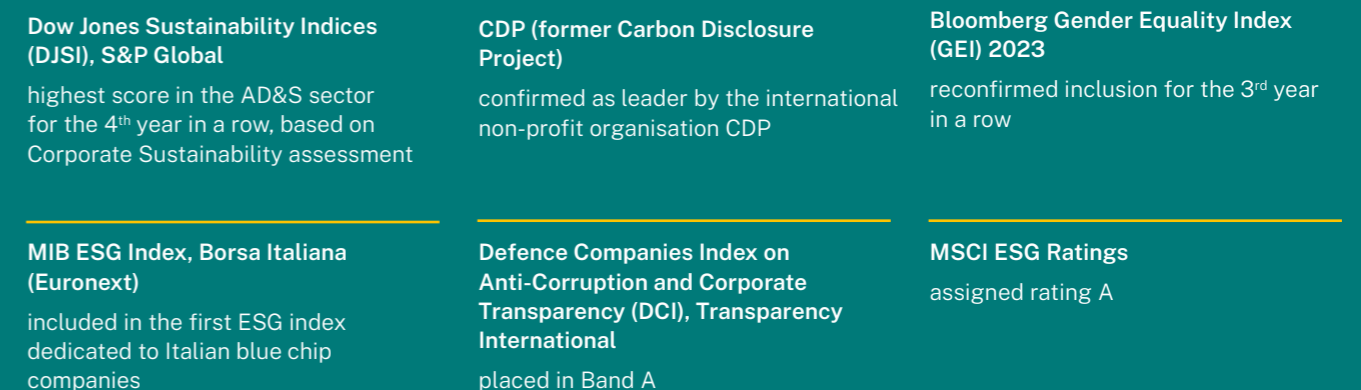**137,000**
cyber security events monitored per second

61
emergency mapping activated for earthquakes, floods, fires and humanitarian crises in 30 countries

50,000
terminals managed and **200** control rooms for secure communications of Italian police forces

Helicopters by mission type

38%
Public order

28%
Search and Rescue (SAR)

1,218
HELICOPTERS

6%
Fire-fighting operations

28%
Helicopter Emergency Medical Service (EMS)

Satellite services by type of intervention

56%
Fires

5%
Volcanic activities

5%
Tornadoes

61
EMERGENCY MAPPING

31%
Floods

3%
Earthquakes

INNOVATION

2 BIL
euro invested in R&D and product engineering

3rd
place in Italy and 4th place among European AD&S companies for R&D investments

12
Leonardo Labs in 7 Italian regions and 1 in the US

5
joint laboratories in collaboration with external bodies (Solvay and the Italian Institute of Technology)

>90
collaborations with universities and research centres globally

12,200
people dedicated to R&D activities

62%
employees with STEM degrees

200
researchers to join Leonardo Labs by the end of 2023

LEONARDO ESG AWARDS

Dow Jones Sustainability Indices (DJSI), S&P Global

highest score in the AD&S sector for the 4th year in a row, based on Corporate Sustainability assessment

CDP (former Carbon Disclosure Project)

confirmed as leader by the international non-profit organisation CDP

Bloomberg Gender Equality Index (GEI) 2023

reconfirmed inclusion for the 3rd year in a row

MIB ESG Index, Borsa Italiana (Euronext)

included in the first ESG index dedicated to Italian blue chip companies

Defence Companies Index on Anti-Corruption and Corporate Transparency (DCI), Transparency International

placed in Band A

MSCI ESG Ratings

assigned rating A

SUSTAINABILITY IN ACTION

The current global economic, geopolitical, environmental and social changes mean that the **sustainable transition process** can no longer be postponed: the commitment of institutions, civil society and businesses is converging on shared positions to preserve the future of the planet and its inhabitants. The **Sustainable Development Goals** (SDGs) of the United Nations 2030 Agenda have been setting the course, together with the increasingly **stricter European and international regulations** - which require radical changes in the management of sustainability impacts, risks and opportunities. These factors drive companies to accelerate integration of ESG (Environmental, Social, Governance) aspects into business.

In this context, Leonardo, through the **Be Tomorrow Strategic Plan - Leonardo 2030**, defines its actions to best respond to the current challenges and opportunities by promoting a **sustainable growth** process. This path implies a **constant dialogue with external and internal stakeholders** to identify the strategic priorities that guide the definition of **sustainability targets** and, therefore, the **Sustainability Plan** projects that contribute to achieving them. Leonardo's growing commitment to ESG issues led to **integrate sustainability into the Group's core strategy and processes**, thanks to a data-driven approach that makes the materiality analysis and ESG targets key for decision-making. **Technological development, innovation and digitalisation**, are **enablers** for the sustainable transition of the Group and its supply chain, and contribute to protecting and safeguarding the planet and its inhabitants, also through the solutions and technologies developed by the company.

## Leonardo's sustainability process
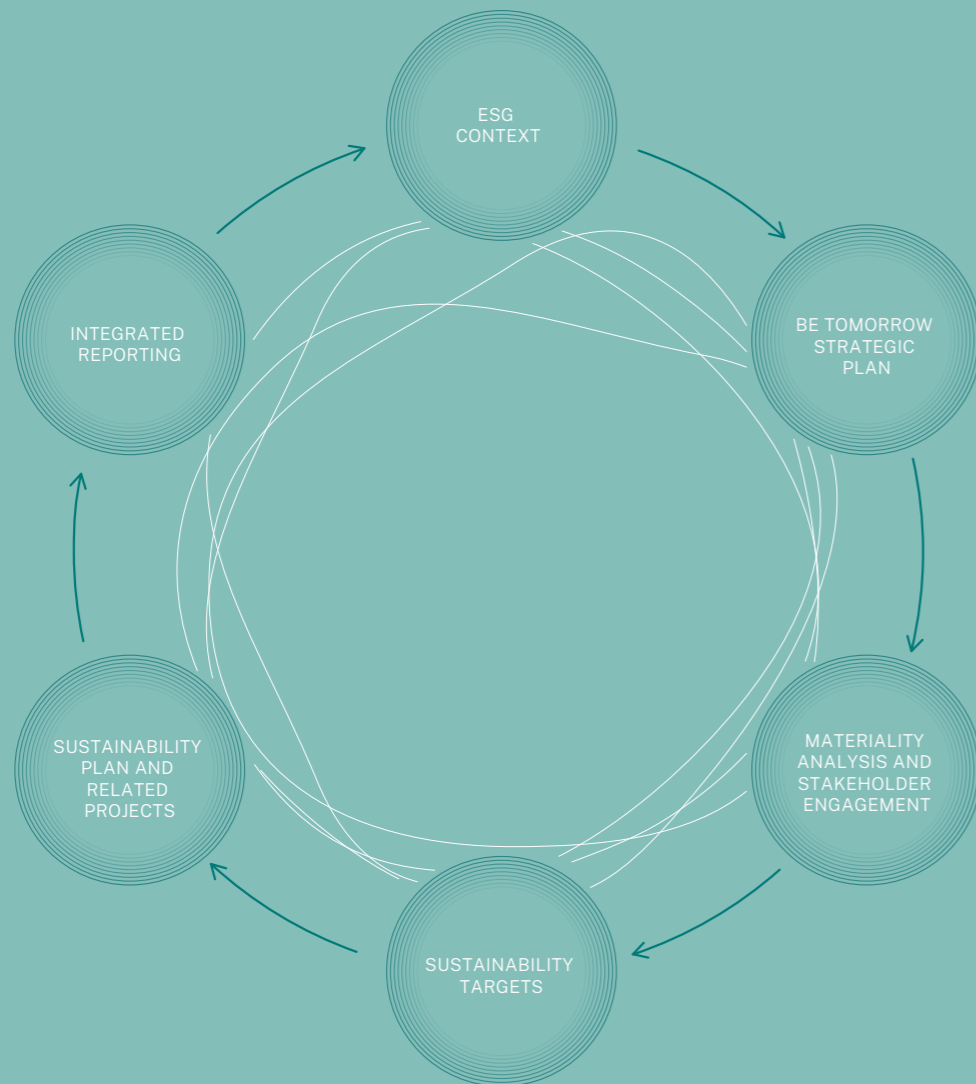
MATERIALITY ANALYSIS

For Leonardo, the definition of a sustainable strategy is based on materiality analysis, a process that **identifies issues** representing **the impacts generated by the company** (material topics) **on the planet, people, society and the economy**. In 2022, Leonardo **consolidated its methodology** for defining material topics by focusing on their impacts and dialogue with stakeholders. **The analysis identified 18 material topics** - published in the Annual Report - **that help define the Group's strategy**.

The **impact matrix** graphically represents the **degree of priority of the material topics** identified, by comparing the perspectives of management and external stakeholders . The high-impact topics – in the top-right quadrant – are in line with the Group's core business or with trends relevant to the Aerospace, Defence & Security sector.

Impact matrix
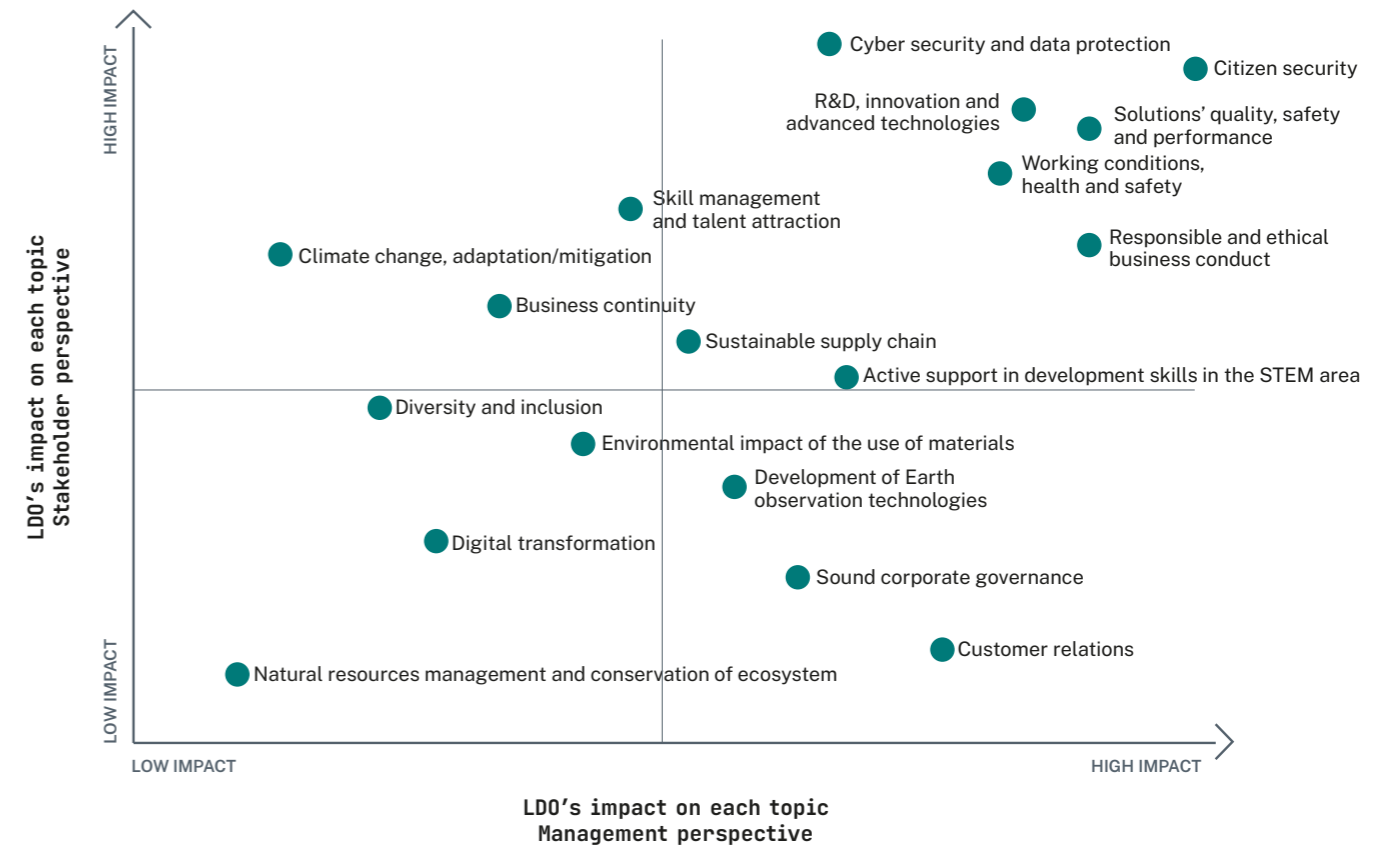
Highlights

32	316	9,890
stakeholders involved in Focus Groups to map Leonardo's impacts	internal and external stakeholders involved in online survey to prioritise impacts	documents - AD&S companies' financial statements, news, regulations and standards - analysed with big data analytics tools

SUSTAINABILITY TARGETS

Leonardo's sustainability targets are **a key tool to support the Group's strategy**, its competitiveness and industrial ecosystem. In 2022, Leonardo fostered its sustainability path by committing to a significant direct and indirect target to reduce CO_2 emissions within the **Science Based Targets initiative**, in line with the targets set in the Paris Agreement. A further **acceleration in the reduction of water consumption and waste production** has been planned by moving to absolute targets (no longer intensity targets) and setting more ambitious targets. This change represents a milestone in **decoupling industrial growth from environmental impact**. Supporting its sustainability targets, Leonardo has integrated ESG-related indicators into its remuneration policy, including indicators related to health and safety, climate change and STEM skills.

With reference to Governance, People, Planet and Prosperity aspects, Leonardo's sustainability targets aim to:

Promote a responsible business model through sound trade compliance and certified anti-corruption management processes (Governance)

Promote an inclusive environment and attract talent, particularly by increasing the number of women, including in the STEM area, and under-30 employees (People)

Reduce energy consumption, CO_2 emissions and environmental impact, including by reducing the use of external electricity, water withdrawal and waste produced through circular economy practices (Planet)

Develop the supply chain and strengthen digitalisation, both in processes and supplier relations, and involve the supply chain in development programmes, training on sustainability issues and targets related to reducing environmental impacts (Prosperity)

PILLAR	TARGETS	PROGRESS	TARGET YEAR	SDG/MATERIAL TOPICS
GOVERNANCE	Extending Trade Compliance Directive to the Group	✓	2022	*Sound corporate governance*
	Extending the business compliance training to other types of third parties (distributors/resellers), making it a mandatory requirement for the completion of the engagement	✓	2022	*Responsible and ethical business conduct*
	Renewal/maintenance of the ISO 37001:2016 "Anti-Bribery Management System" certification	◉	2023	
PEOPLE	More than 100 training hours per employee in the period 2018-2022	✓	2022	*Diversity and inclusion*
	Under 30 equal to at least 40% of total new hires	✓	2022	
	Women equal to at least 32% of total new hires	◉(yellow)	2022	*Skills management and talent attraction*
		◉	2025	*Active support to STEM skills development*
	Women equal to 30% of total new hires in STEM areas	◉	2025	
	20% women in management levels	◉	2025	
	Women equal to 20% of total employees	◉	2025	
	27% of women in succession plans	◉	2025	
PLANET	10% reduction in electricity consumption withdrawn from external grid[II]	◉	2025	*Combating climate change, adaptation and mitigation*
	50% reduction in Scope 1 + Scope 2 (market based) emissions[III]	+	2030	*Environmental impact of using materials*
	25% reduction in water withdrawals[IV]	+	2030	
	15% reduction in the amount of waste produced[IV]	+	2030	
PROSPERITY	Managing more than 75% of the value ordered by Leonardo business areas through digital collaboration platforms[V]	✓	2022	*Sustainable supply chain*
	Implementing supply chain development programmes and medium/long-term partnerships, focused on SMEs, to improve business sustainability	◉	2023	*R&D, innovation and advanced technologies*
	Raising awareness of/delivering training on SDGs and supporting tools for reporting to over 80% of key suppliers (over 500 suppliers)	◉	2023	*Cybersecurity and data protection*
	100% of LEAP partners with set targets and plans on green energy, CO_2 emission reduction, waste recycling, water consumption	◉	2023	*Digital transformation*
	Increasing computing power by 40% per capita [VI]	◉	2025	
	Increasing storage capacity by 40% per capita [VI]	◉	2025	

I *The 2022 target is calculated excluding blue collar workers; the 2025 target is calculated on total recruitment.*
II *Calculated in relation to revenue. Baseline year 2019.*
III *Reduction in absolute value. Baseline year 2020.*
IV *Reduction in absolute value. Baseline year 2019.*

V *Includes recurring suppliers. Leonardo DRS is not included in the scope.*
VI *Calculated as the number of flops (Floating Point Operations Per Second) and bytes in relation to employees in Italy. Baseline year 2020.*

✓ Target achieved
◉ On track
+ Target updated
◉(yellow) Target not achieved

SUSTAINABILITY PLAN

Leonardo's Sustainability Plan t**ranslates the Group's vision and sustainability targets into measurable** short-, medium-and long-term projects and initiatives, through a **data-driven** approach based on a structured reporting and monitoring system. The plan is a shared, continuously evolving tool which all Group business areas, central departments, companies and subsidiaries contribute to through specific projects. The yearly review and update process of the plan steers the strategy and the related initiatives - according to a continuous improvement strategy - by reinforcing the achievement of the Group's targets and by responding to stakeholders' demands. The Plan is divided into **eight clusters** that focus on the **entire value chain** - from research and development to operations, and from customer support solutions to social impact. It operates along specific guidelines, such as decarbonisation, environmental management and circular economy, sustainable supply chain, sustainability solutions, responsible business conduct, scientific citizenship, diversity, equity and inclusion. Technological innovation and digitalisation are **cross-cutting drivers** of the plan, **capable of accelerating the sustainable transition.**

2022 Sustainability Plan's main achievements

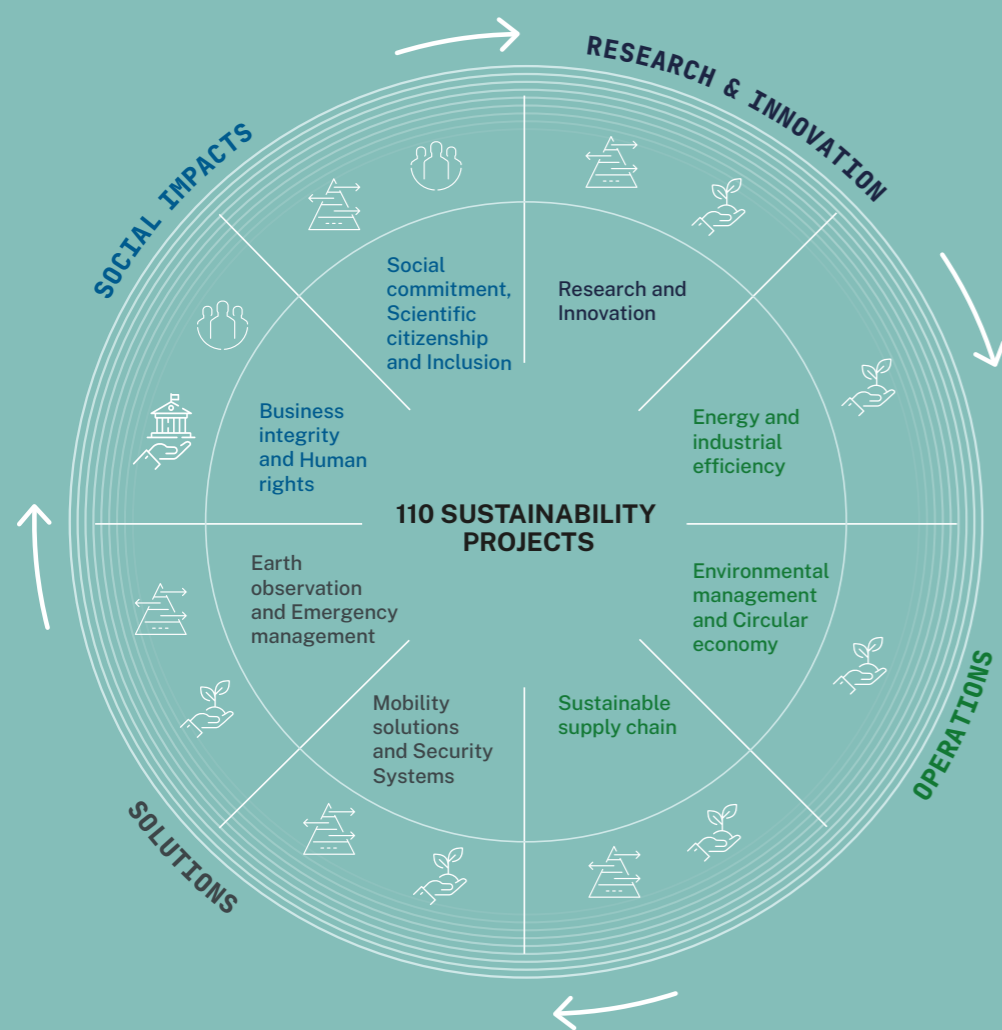|					
~**132 kton of CO₂ₑ/year** reduction in Scope 1 and 2 market-based emissions (**-31%** of total Group emissions in 2020)	**19 GWh/year** reduction in electricity withdrawal from the grid (**-2.7%** of total Group consumption in 2019)	More than **17,000** Leonardo's staff completed the first sustainability course and almost **3,000** employees took part in Sustain-Able, a gamification platform on sustainability issues	**165 SMEs** involved in supply chain development programmes	**336 key suppliers** trained on the SDGs	Commitment to the **Science Based Targets initiative (SBTi)**

The 2023 Sustainability Plan, updated according to the materiality analysis and the performance analysis of the initiatives, counts **110 projects**, of which **55 are tactical**, with short-term effects and a direct contribution to achieving the sustainability targets, and **55 are transformative**, with medium-to long-term impacts. Among the new projects, the following are key ones: the integration of the **Leonardo Production System (LPS)** programme to streamline **corporate** operations, the definition of **Science Based Targets** and a decarbonisation **roadmap for the supply chain** and **products and solutions**, as well as the implementation of **projects to reduce water consumption and waste production**, to support the new environmental targets. To support this path, **research on sustainability issues** was strengthened by creating a dedicated Leonardo Lab.

Sustainability plan: clusters, value chain and pillars

110 SUSTAINABILITY PROJECTS

RESEARCH & INNOVATION

SOCIAL IMPACTS

OPERATIONS

SOLUTIONS

Social commitment, Scientific citizenship and Inclusion

Research and Innovation

Business integrity and Human rights

Energy and industrial efficiency

Earth observation and Emergency management

Environmental management and Circular economy

Mobility solutions and Security Systems

Sustainable supply chain

The association between Sustainability Plan's clusters and pillars follows an impact and prevalence criterion

Pillars	Sustainability Plan's main guidelines	Main projects	Impact on SDG
	Research and innovation as cross-cutting driver		**Core** / **Others**
GOVERNANCE	**Responsible business conduct** · Improve trade control and governance in commercial transactions · Strengthen assessment and control measures over human rights issues	Trade Compliance Training	
PEOPLE	**Attraction, Diversity & Inclusion, Education & STEM** · Attract and manage talents · Foster gender equality · Promote sustainability culture · Strengthen scientific citizenship and STEM disciplines	Succession plans, sustainability training, STEMLab and Springboard	
PLANET	**Decarbonisation – SBTi** · Identify and implement emission reduction initiatives aligned to Science Based Targets initiative methodology · Improve energy efficiency initiatives **Environmental impact reduction and circularity** · Reduce water withdrawals and improve water efficiency · Improve circularity and reduce, reuse, recycle waste · Encourage plasticless–paperless initiatives and digitalisation	Full Potential lighting, Energy Self-Production Programme, SF_6 gas substitution, Leonardo Production System project Smart Water, carboresin circularity, WEEE recycling	
PROSPERITY	**Sustainable supply chain** · Promote the sustainable development of the supply chain · Strengthen the digitisation of purchases · Define and measure ESG targets along the supply chain **Sustainability solutions** · Develop solutions for the protection of people and territories · Develop low-emission solutions for the transport sector · Develop solutions for Industry 4.0	LEAP, SME training on sustainability issues Earth observation, smart mobility, security solutions	

DATA-DRIVEN SUSTAINABILITY

The **data-driven approach** is a cornerstone of Leonardo's sustainability process. It is based on a **systematic** and **periodic collection**, **monitoring** and **analysis** of **data throughout the value chain**. The results obtained support the strategic decisions and guide the continuous improvement of sustainability performance. This is made possible by an extensive internal organisational structure supported by a **digital platform** reporting key **indicators**, used at predefined periodic intervals and according to common metrics. Sustainability data comes from different parts of the company, and is analysed centrally using **data analytics systems**. The analyses cover sustainability performance forecast data (Budget Plan for ESG indicators), and are used to verify the potential achievement of the Group's sustainability targets through existing initiatives, the economic and progress data of the Sustainability Plan's inititives and the Group's final performance data. The process contributes to the definition of strategic planning.

Digital data collection platform set-up

Internal contributors' and validators' training

Data collection

Data control and validation

Result analysis and sharing with internal stakeholders
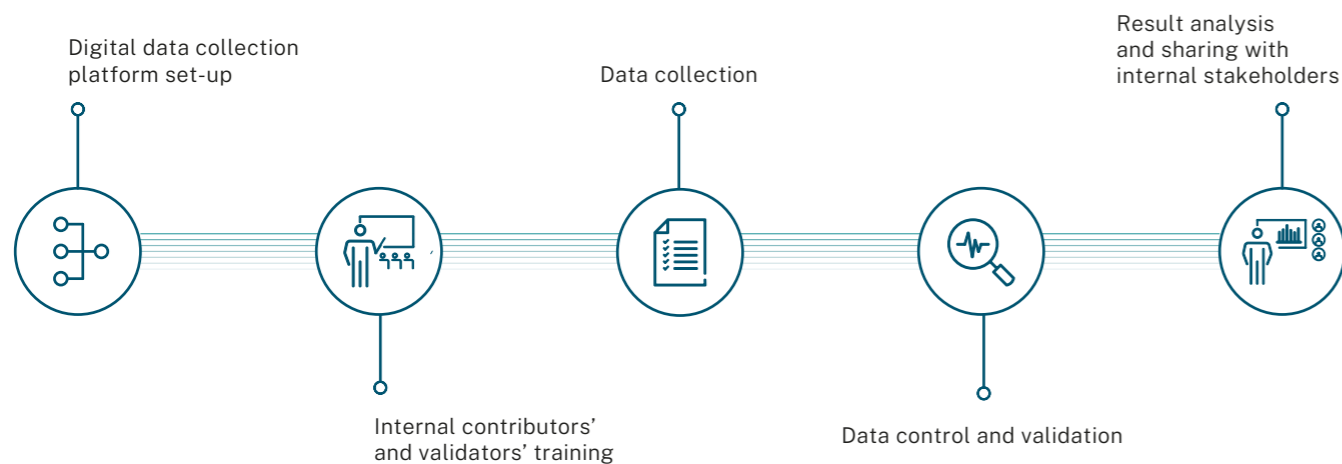
260 KPIs

63 ESG indicators monitored for the Five-Year Budget Plan

28 indicators monitored as part of the Sustainability Plan

165 performance and 4 economic indicators to monitor the progress and benefits of the Sustainability Plan initiatives

50 people

directly involved in the reporting and formal approval process for the Budget Plan ESG indicators

50 people

directly involved in the reporting and formal approval process for the economic data indicators of Sustainability Plan initiatives

1 digital platform

for data reporting/approval and 1 IT tool for calculating emissions related to energy, fuel and gas consumed

SUSTAINABILITY STAKEHOLDER ENGAGEMENT

Sustainability challenges require a collective vision and a shared approach with relevant national and international stakeholders: from businesses to political and economic institutions, through associations and local communities. The **constant dialogue with stakeholders** – a central element of Leonardo's sustainability strategy aimed at creating shared value – strengthens the link with the surrounding industrial, institutional, economic and social context, and contributes to defining new sustainable development models by sharing its vision on sustainability issues.

Leonardo collaborates with several **associations and networks on sustainability topics**. For example, the company is a member of the United Nations Global Compact, the Global Compact Network Italia Foundation – of which it is on the Board of Directors – CSR Europe, Valore D and Social Value UK, with which it works on issues related to the environment, supply chain, sustainable finance and social impacts, with a focus on diversity, equity and inclusion. Moreover, Leonardo takes part in and contributes to sustainability activities regarding the aerospace and defence sector on issues related to, for example, decarbonisation and climate change within industry associations and federations such as the Aerospace, Security and Defence Industries Association of Europe (ASD) and the Federation of Italian Companies for Aerospace, Defence and Security (AIAD – Federazione Aziende Italiane per l'Aerospazio, la Difesa e la Sicurezza), and in the working groups of international organisations such as NATO. Leonardo is also active **in Italian** (e.g. Confindustria) **and European** (e.g. The European Round Table of Industrialists – ERT) industry associations, where the close link between sustainable and digital transition, the central contribution of technology as a sustainability enabler, and the growing interest in decarbonisation practices emerge.

INNOVATION, DIGITALISATION AND SUSTAINABILITY

Digitalisation, new R&D infrastructures and supercomputing strongly contribute to accelerating Leonardo's technological innovation process, with a significant impact on sustainability and contributing to the SDGs of the UN Agenda 2030. The company has a strong innovation network in place, in which the **Leonardo Labs'** research network and the **davinci-1** supercomputing infrastructure are key tools to help reduce the environmental impact of its processes, products and services.

Leonardo's technological innovation as a sustainability accelerator

2.0 bil
invested in R&D and product engineering

12,200
people dedicated
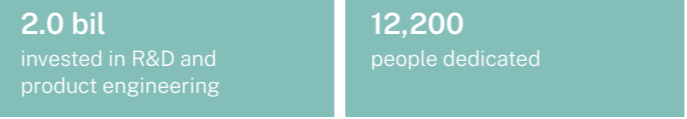
DAVINCI-1

5 bil
floating point operations per second

20 bil
gigabytes of memory

VIRTUALISATION

~48,000 hours
of training on flight simulators

>220,000 tonnes
of CO_{2e} avoided since 2018 thanks to virtual training systems

NEW SOLUTIONS

12 Leonardo Labs
› 200 researchers to join by 2023

Sustainable aviation

Climate and planet observation solutions and programmes

Unless otherwise indicated, all data refers to 2022

LEONARDO LABS

The Leonardo Labs are **incubators for research and development of innovation programmes in specific technological areas**. They form an ecosystem characterised by close collaboration with research centres, universities, polytechnics, companies and start-ups at a global level. The **activities** of the Labs have significant impact on sustainability: from **electrification** of helicopters and aircraft to **industrial process innovation**, and from **satellite observation data** analysis to **advanced materials**. To strengthen the studies on these topics, a new Lab on sustainability has been launched.

RESEARCH AREAS

Digital Twin and Advanced Simulation

Artificial Intelligence

Big Data

HPC and Cloud Computing

Unmanned & Robotics

Quantum Technologies

Electrification

New materials

Sustainability

Space Technologies

Cyber

Optoelectronics

BUSINESS AREAS AND COMPANIES

LEONARDO LABS

38 Research Units
5 Joint Labs

LEONARDO LABS

Future Rotorcraft Technologies

Future Aircraft Technologies

Material Technologies

Space Technologies

Future Electronic and Sensing

Quantum Technologies

Applied Artificial intelligence

HPC\Cloud\Big Data Technologies

Intelligence Autonomous System

Future Safety & Security Technologies

Advanced Logistics 4.0

Sustainability

The sustainability Lab

The new sustainability Lab studies innovative solutions with a direct impact on the environment and society, and sustainability aspects related to production processes, new technologies and the company's products and services. The research covers both **cross-cutting contents**, related to activities taking place in other Leonardo Labs, and **vertical topics with dedicated research lines,** such as:

DECARBONISATION OF PRODUCTS AND PROCESSES

› Vehicle electrification scenarios
› Hydrogen applications
› Green Computing & green coding
› Sustainable Aviation Fuels (SAF) scenarios and their testing

LIFE CYCLE AND CIRCULARITY

› Product life cycle analysis
› End-of-life scenarios and battery recycling
› Eco-design of products and components
› Material circularity (e.g. composite materials)

ENVIRONMENTAL IMPACT OF INDUSTRIAL PROCESSES

› Chromate replacement processes
› Reduction and/or replacement of PFAS (Perfluoroalkyl Substances) pollutants

DIGITAL TECHNOLOGIES FOR SUSTAINABILITY

› Digital technologies for sustainability
› Impact of digitalisation activities
› Digital Twin of Leonardo products
› Analysis of satellite data for environmental applications (e.g. water stress, biodiversity, etc.)
› Digital solutions for public transport efficiency in urban areas

DAVINCI-1

The **davinci-1 supercomputer** is Leonardo's answer to driving the digital transformation of the industry. Its architecture is designed to **combine the capabilities of the cloud with supercomputing** in a platform (cloud computing) that integrates flexibility and computing power. This enables complex numerical simulations (e.g. Computational Fluid Dynamics), training of algorithms (from deep learning to Artificial Intellige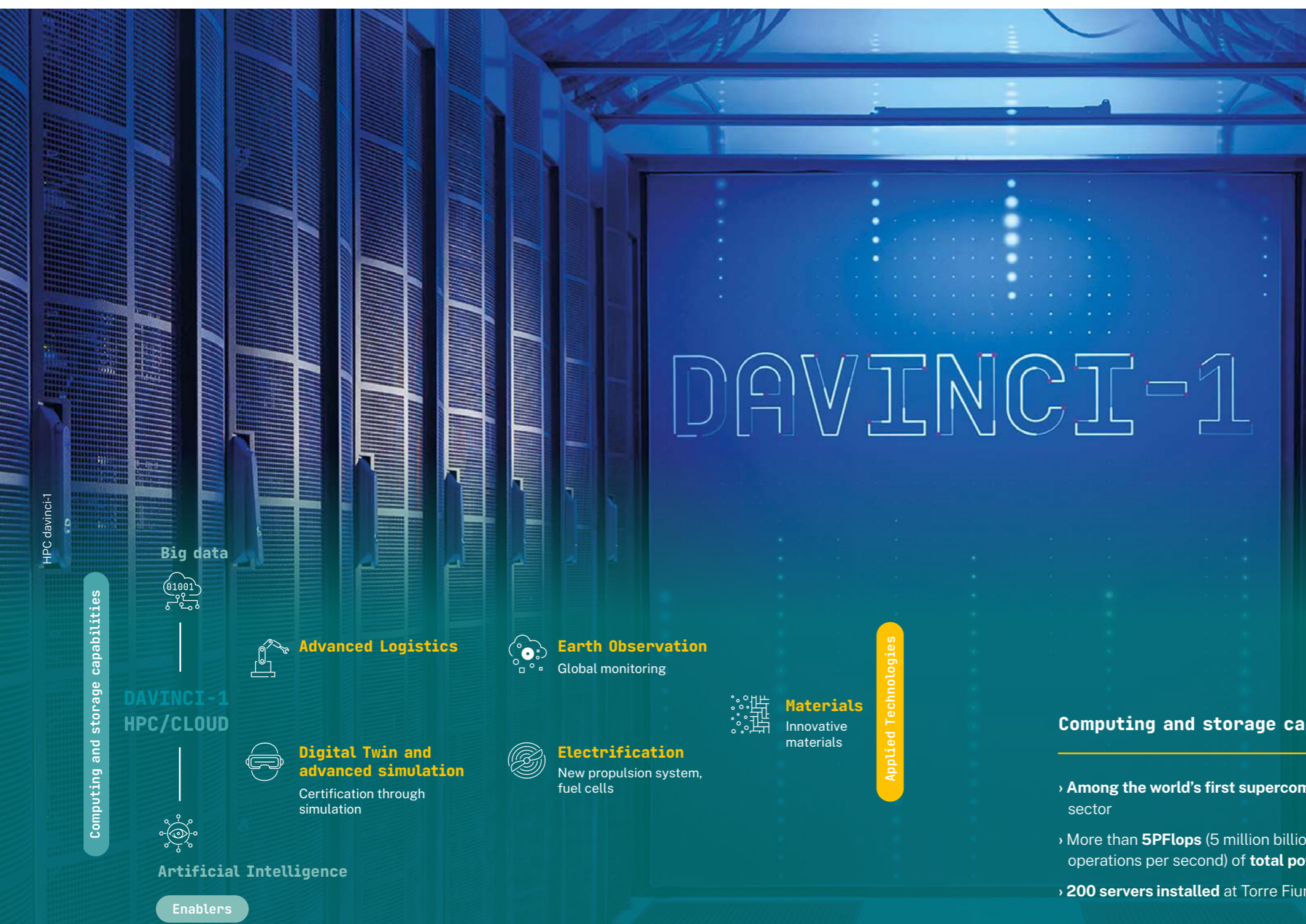nce), customisation by technological platform (from aircraft to helicopters, and from satellites to monitoring and control systems) and calculation of the countless interactions between the data generated (Data Analysis and Big Data). **Davinci-1 is the backbone infrastructure of the Leonardo Labs** network enabling research into disruptive technologies for sustainability solutions.

THE VALUE OF DIGITALISATION

Digitalisation is an enabler of the transition that, through dematerialisation and new functionalities, can lead to significant sustainability benefits. The **Digital Twin** is an example: **a virtual copy of a product**, **process** or **system** that models its behaviour over time by integrating different data and information sources. A virtual model can intervene in all phases of a product's life: from design and development to production and testing, through use and maintenance, with clear benefits in terms of time, costs and **reduction in emissions and resources used.** For example, using a simulation environment in the helicopter industry reduces the flight hours required for training and certification, resulting in lower CO_2 emissions.

HPC davinci-1

Big data

01001

DAVINCI-1
HPC/CLOUD

Advanced Logistics

Earth Observation
Global monitoring

Materials
Innovative
materials

Computing and storage capabilities

**Digital Twin and
advanced simulation**
Certification through
simulation

Electrification
New propulsion system,
fuel cells

Applied Technologies

Artificial Intelligence

Enablers

Leonardo's role in the digitalisation and IT security of Italy

The increasing interconnection between the digital system of governments, institutions and companies not only offers undeniable benefits, but also introduces new **risks related to possible cyber attacks**. The potential negative impacts of these incidents can undermine the continuity of essential services for the community, affecting the economy of entire nations and, in some cases, even putting people's safety at risk. In this area, **Leonardo offers managed security services and builds resilient technology platforms** and infrastructure to ensure data protection and delivery of essential services, even in case of extreme events and systemic shocks.

Leonardo plays an important role as a technological enabler of the Italian economy, as demonstrated by its involvement in the National Strategic Hub (**Polo Strategico Nazionale – PSN**) of which it is a member together with TIM, CDP and Sogei. Established in 2022, the PSN designs, implements and manages the new infrastructure for the delivery of cloud services to the Public Administration which, through Leonardo's global security operation centres, is equipped with a **secure** - as well as efficient and reliable - **cloud** to **protect the country's sensitive data and its critical and strategic services**. The goal of the PSN is to have 75% of Italian administrations using cloud services by 2026.

Computing and storage capacity

› **Among the world's first supercomputers** in the AD&S sector

› More than **5PFlops** (5 million billion floating point operations per second) of **total power**

› **200 servers installed** at Torre Fiumara in Genoa

› **20 million gigabytes** of memory

› **Design** of products and solutions with **lower energy and material consumption**

DECARBONISATION

Technology and digitalisation are the main drivers to reduce emissions from operations and implement new low carbon products and services, while accelerating the decarbonisation of the value chain from supply to deployment. Such a path is strengthened by the research carried out in the Leonardo Labs on Digital Twin, advanced materials, electrification, logistics 4.0, environmental sustainability, and through the participation **in European research programmes** such as Clean Sky 2, SESAR 2020 and their "successors" Clean Aviation and SESAR 3. These programmes are complemented by the collaboration with suppliers, partners and institutions. Leonardo's approach is in line with **Destination 2050's targets**, the main European industry initiative defining the aviation roadmap to net zero emissions by 2050, involving airlines, airports and aerospace companies. In 2022, Leonardo boosted its decarbonisation strategy by committing to the **Science Based Targets initiative**.

DECARBONISATION OF THE VALUE CHAIN

SCOPE 1 + SCOPE 2

SCOPE 3

OPERATIONS

Efficiency

Virtualisation

Reducing
high-GWP* gases

SUPPLY CHAIN

Training

Shared targets

PRODUCTS AND SERVICES

Sustainable
aviation solutions

New materials

* Global Warming Potential

EMISSIONS REDUCTION IN OPERATIONS

As an industrial and manufacturing player, Leonardo invests in several **initiatives to decarbonise and reduce the energy consumption of its operations**. Among the most significant ones highlighted in the Sustainability Plan are the energy self-production programme - which will allow the Group to reduce energy dependency and avoid around 16,000 tonnes of CO_{2e} emissions by 2025 - and the full potential LED lighting programme - which will save over 10,000 tonnes of CO_{2e} annually within the same year, compared to 2019. As for digitising production processes and making them more efficient, **Leonardo aims to minimise the carbon footprint (Scope 1 and 2)** of its production through various initiatives, including: substituting SF_6 with gases that have a lower Global Warming Potential (GWP), developing new thermoplastic matrix materials, whose processing consumes less energy, and developing innovative solutions through **HPC** (High Performance Computing). For example, thanks to the **Digital Twin**, Leonardo has been redesigning its processes and revising the design and production phases of its products and services. Finally, Leonardo is on the market with the **EMODS platform** (Energy Management Optimisation & Decision Support) for **analysing and forecasting energy and water consumption** and therefore helping identify energy and water efficiency measures.

SOLUTIONS FOR REDUCING EMISSIONS IN OPERATIONS BY 2030

CO_{2e} EMISSIONS, SCOPES 1 AND 2 (MARKET-BASED)

kton CO_{2e}

2019	2020	2021	2022	2030
404	423	325	277	
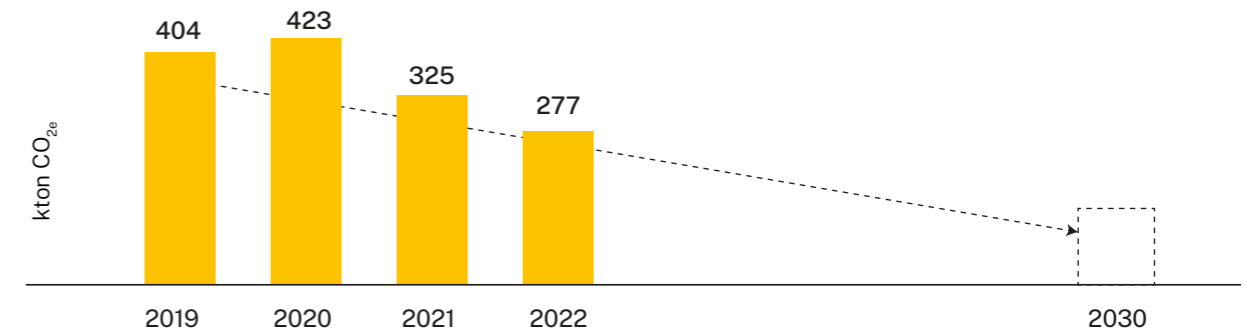
SF_6 substitution

Approximately 160,000 tonnes of CO_{2e} saved between 2020-2022 by substituting SF_6 – a highly climate-changing gas – with R134a – a gas with lower GWP – as the inert gas used during magnesium alloy casting

Energy self-production programme

3 pilot photovoltaic plants and analyses for further 30 sites, offering estimated potential savings of approximately 16,000 tonnes of CO_{2e} from 2025 on

The new commitment to the Science Based Targets initiative

In 2022, Leonardo presented its commitment to the Science Based Targets initiative (SBTi). SBTi supports companies in their decarbonisation mission by providing tools, guidance and criteria for defining targets aligned with the goal of limiting warming to 1.5 °C, as defined by the 2015 Paris Agreement. Setting targets according to the **SBTi** methodology **will ensure that Leonardo's commitment to decarbonisation is built on a scientific basis** and will extend the reduction of carbon footprint to Scope 3 emissions. Leonardo formalised its commitment in November 2022, while targets will be submitted for final validation, which is expected by 2024.

The decarbonisation path of Leonardo UK

Decarbonisation strategies and targets are common to all Group locations. In September 2021, for example, Leonardo UK published the **Carbon Reduction Plan[1]** , **an action plan to achieve climate neutrality** for Scope 1 and 2 emissions by 2030, and throughout the value chain by 2050. The plan is updated annually and analyses the most significant measures to reduce the environmental impact of UK operations. These include the adoption of internationally acknowledged energy management standards, energy self-production, use of electric vehicles, site energy efficiency, water efficiency and lower waste production.

[1] For more details, refer to the Carbon Reduction Plan 2021 of Leonardo UK Ltd.

SUSTAINABLE SUPPLY CHAIN

Leonardo involves the entire supply chain on decarbonisation matters. To this end, the company has created the **Supply Chain Sustainability Manifesto**, which focuses on industrial efficiency, action for Planet, green energy and, finally, eco-design and circular economy. Leonardo has also acknowledged that managerial culture and skills are central to accompanying suppliers on the path toward decarbonisation. The Group has **designed specific training**, and awareness courses and support on sustainability planning and reporting, which are developed along three action lines:

› **dedicated workshops** on green solutions, with the participation of experts and industry leaders;
› **management training programme for suppliers**, provided free of charge through interprofessional funds and/or public funding;
› **video-courses and toolkits** to develop a sustainability plan and get started with non-financial reporting at individual company level within the supply chain.

SUSTAINABLE AVIATION

Leonardo's decarbonisation approach is supported by the innovation and product development activities of all operational areas and, in particular, fixed-wing and rotary-wing aircraft platforms. Leonardo also participates in several research and development activities for advanced low environmental impact solutions within the main national and European initiatives. Among them, **Clean Aviation**, **Sesar 3**, **Nemesi** and **Lampo** are the most significant ones in terms of size and ambition.

VIRTUALISATION AND AIR TRAFFIC MANAGEMENT

› Virtual training systems (Embedded Training System and e-learning) and virtualisation of product testing (Certification-by-Simulation) to significantly reduce actual flight hours

About 48,000
training hours provided through flight simulators in 2022

› Air Traffic Management (ATM) systems to optimise air traffic, including LEANS (Leonardo Evolution Air Navigation System) to make it easier to tailor control systems according to customer needs

About 150,000
tonnes of CO_{2e} saved in Italian skies in 2022 with Leonardo's Free Route ATM system

NEW MATERIALS

› Recovery and reuse of carbon fibres from processing and industrial waste through thermal recycling and use of thermoplastic matrices

EVOLUTION OF AIRCRAFT AND NEW LOW-EMISSION ENERGY SOURCES

› Study of aircraft using low or zero carbon energy sources (batteries, hydrogen) for propulsion and on-board systems

Up to -80%
of CO_{2e} emissions over the SAF production cycle compared to conventional fuels

› Study on 50% to 100% use of SAF (Sustainable Aviation Fuels) on fixed-wing aircraft and helicopters

12 models
of Leonardo helicopters can operate with fuels diluted by up to 50% with SAF

5 models
of fixed-wing aircraft being assessed for SAF use

Clean Aviation and Clean Sky 2

Clean Aviation is the European Commission's research programme dedicated to the study of innovative aircraft configurations and enabling technologies for the regional and medium/short-haul segments that - in line with the European Green Deal and in support of future climate neutrality - will reduce aviation emissions by at least 30% compared to 2020. Leonardo is the **coordinator of the regional segment** and the project dedicated to studying new architectures, their performances and the integration of enabling technologies. The company is also involved in eight projects dedicated to enabling technologies: from hybrid propulsion to flexible digitalisation of design processes. Finally, Leonardo contributes to measure the environmental and market impact of Clean Aviation solutions.
Within the **Clean Sky 2** programme, the predecessor of Clean Aviation, of which Leonardo is a founding member and "Leader", the Group leads and develops studies on lower CO_2 and noise emissions aircraft in the **Green Regional Aircraft** and **Next Generation Civil Tilt Rotor (NGTCR)** demonstration platforms. The former is an advanced aircraft for a sustainable and competitive regional air transport, to which Leonardo contributes through innovative aerodynamic and material solutions. The latter pursues a model for a new-generation, eco-efficient commercial convertiplane capable of combining the speed, range and altitude of a turboprop aircraft with the vertical take-off and landing and the stationary flight capability of a helicopter. Leonardo also uses eco-design approaches to develop specific aircraft sub-systems, and environmental impact analysis models for typical missions to quantify the environmental benefits obtained by integrating advanced systems, production and assembly technologies, passenger interface systems and control and monitoring systems. It also studies carbon fibre reinforced polymers (CFRP) recycling methodologies and the manufacturing of secondary aerostructure components using recovered fibre.

SESAR

As part of Europe's Digital European Sky policies, the **SESAR 2020** programme and the new **SESAR 3 Joint Undertaking** – launched in 2021 – define, implement and deploy technologies to transform air traffic management in Europe. More than 50 aviation organisations take part in the programme, which involves airports, users, operators, the manufacturing industry and the scientific community. The programme will act as a catalyst to accelerate the transition to a **greener, more ecological and digital Europe** through several research areas, including automation and connectivity, sustainable aviation, virtualisation and interoperability, and civil/military coordination.
As part of the programme, Leonardo is developing enabling technologies in the airspace and ground systems areas, with the aim of proposing solutions for the air traffic **management of the future ensuring aircraft** to operate safely and with less environmental impact in the European airspace.

Sustainable urban mobility

Leonardo is part of the National **Centre for Sustainable Mobility,** whose mission is to accompany the *green* and **digital transition of the mobility** sector by supporting local institutions in implementing modern, sustainable and inclusive solutions in the country's cities and regions. In line with this vision, Leonardo has used artificial intelligence and correlation of systems and data to develop solutions for optimising urban road transport that guarantee multi-modality, sustainability and efficiency of both conventional and new generation (electric and hybrid buses) fleets. A success story in this area is the temporary company grouping consisting of Leonardo, ICM and Colas Rail, which was awarded the "**4 assi di Forza**" (4 Axes of Strength) local public transport project for the City of Genoa.

NATURAL RESOURCES AND CIRCULAR ECONOMY

Responsible and sustainable business development, full compliance with regulation, attention to stakeholders' needs and expectations, excellence in processes and services, and continuous performance improvement are the underlying principles of Leonardo's environmental management model. **Attention to natural resources** means making consumption more efficient and minimising the impact of operations by implementing effective **circular economy models**, involving not only the Group's activities, but all phases of the life cycle of its products and services.

NATURAL RESOURCE PROTECTION

Leonardo is committed to **using energy and natural resources efficiently** and to reducing emissions and pollution, especially in its industrial activities. This is made possible by **adopting ISO 14001-certified** management systems, continuously training people and raising awareness, and implementing specific process initiatives. The Sustainability Plan includes **energy and industrial efficiency** measures to reduce the environmental impact of its activities, including greenhouse gas emissions, water withdrawal, waste production and the use of hazardous substances to protect soil, subsoil and biodiversity. The **Leonardo Production System** (LPS) is an important part of this approach: it is a system inspired by the World Class Manufacturing, which is active in 18 company sites. It exploits a standardised management model to contribute to the efficiency and continuous improvement of operations with positive impacts, such as reducing emissions, water and energy consumption, as well as waste production.

Water management

Leonardo has planned investments aimed at a more efficient use of water throughout the production cycle. **The Water Project** (in Italy) and the **Water Risk Assessment Project** (in Italy, the UK and Poland) are among the main projects to map the performance of the current water network at Group sites in order to identify risks and actions to reduce leakage and waste, in relation to their geographical locations. The Group has also been working on **upgrading wastewater treatment plants** through local initiatives - with the goal of reducing liquid waste production and increasing water reuse in industrial processes - and on identifying **solutions to recovery wate**r (e.g. rainwater and condensation water) in manufacturing processes.

Soil and biodiversity protection

Environmental protection also takes the form of actions to protect and restore the ecosystems surrounding Leonardo's plants. As for particularly sensitive sites – located near protected natural areas with high biodiversity – Leonardo has started **forest compensation activities**, **phyto-purification** of wastewater with native plants and installation of oil/water separators to protect soil or water properties.

CIRCULAR ECONOMY

The transition to a circular economy model is an integral part of Leonardo's strategy and its Sustainability Plan projects. It aims at reducing raw material use and environmental impact through a transformational approach along the whole value chain. Technology and innovation are the enabling factors.

Leonardo's circularity strategy focuses on four main interconnected areas: optimising the use and choice of materials from the design stage (e.g. through eco-design), using digital platforms to **dematerialise and virtualise** activities and solutions offered to customers, **extending the life-cycle of products** by optimising maintenance cycles, also through predictive models, and **promoting recycling and reuse of materials**, decoupling economic growth from waste production.

CIRCULAR ECONOMY MODEL

OPTIMISE

Reduction in materials thanks to advanced design systems

Application of Product Life Cycle Management and Eco-design approaches

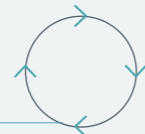Use of composite materials to reduce weight, consumption and impact

Study of new materials to promote reuse and limit disposal

Additive manufacturing through artificial intelligence for product quality controli

↓

12 helicopter models developed by Leonardo are able to use fuels diluted by up to **50% with biofuel**.

Joint-Lab in collaboration with Solvay, dedicated to developing new composite materials and production processes (e.g. engineered materials - thermoplastic matrix composites that are easy to recycle)

SHARE AND DEMATERIALISE

Sale of flight hours in place of product

Virtualisation of product testing

Virtual training systemsi

↓

220,000 tonnes of CO_{2e} avoided since 2018 by using virtual training systems.

Digital Twin in prototyping, testing and product training resulting in a reduction in resource use

EXTEND SERVICE LIFE

Optimised maintenance cycle

Predictive maintenance on helicopters

Component replacement only at the end of life

Software update to extend the life of hardware components

Buy-back of used helicopters

↓

Aircraft structures with a **service life > 20** operating **years**[2].

Predictive maintenance to anticipate the need for maintenance and extend product life

RECYCLE/REUSE

Use of recyclable metals

Regeneration of used components

Recycling and reuse of auxiliary materials, packaging, assembly platforms and metal equipment

Recycling of composite materials (e.g. carboresins)

↓

51% recovery of waste produced in 2022.

New Materials and Circular Economy Accelerator, think tank in collaboration with CSR Europe and international bodies, which developed a new framework on the circularity of composite materials

[2] Leonardo study presented to Cotec in November 2018: "Circular economy in the aeronautical sector, a document specifically for use by the Cotec Foundation".

Strategic partnerships

Leonardo's approach to circularity takes into account the entire supply chain through partnerships with companies, customers and suppliers with the objective to safeguard the planet's resources. For instance, Leonardo has entered into a strategic partnership with **Enel X** in order to streamline energy use on a national scale. According to the logic of demand-response, energy produced by proprietary plants and not absorbed by the production activities in Leonardo's sites will be fed into the national grid on demand. At the same time, the company has entered into a collaboration agreement with **Eni** to develop joint initiatives in the field of sustainability and innovation, especially in circular economy, to promote and accelerate the energy transition and decarbonisation of the aerospace sector, the production and use of energy from renewable sources, energy efficiency, the recycle of materials and the valorisation of waste. In particular, the agreement covers testing and use of sustainable biofuels for aviation and joint research programmes with a specific focus on e-fuels and hydrogen.

TECHNOLOGICAL SOLUTIONS
FOR SUSTAINABILITY

Leonardo's technological solutions for observing, monitoring and protecting the planet and its resources are the result of research and development processes, and international partnerships and collaborations. They play a central role in the company's Sustainability Plan and are able to work together to provide essential data about the Earth's surface, with millimetric precision.

EARTH OBSERVATION AND PROTECTION

The satellite technologies and services developed by Leonardo - also through Telespazio and Thales Alenia Space[3] as part of major European space programmes such as Copernicus[4], COSMO-SkyMed[5] or PRISMA[6] - make it possible to **measure the state of natural resources, and monitor critical infrastructures and climate** phenomena such as

melting glaciers, shifting ice caps, coastal erosion, desertification, rising ocean temperatures and air quality. Leonardo's systems make use of advanced Artificial Intelligence (AI) and big data analysis technologies to **combine and exploit information from sources ranging** from extra-atmospheric data provided by satellites to the network of audio, video and IoT sensors in the field. Satellite interferometry (InSAR = Synthetic Aperture Radar - SAR), for example, makes it possible to carry out high-precision land analysis, even in the order of millimetres, to measure movements and changes in the terrain and infrastructure. A concrete example of how these technologies can be applied is the **ARCOS** (Arctic Observatory for Copernicus SEA Security Service)[7] **project** led by e-Geos[8]. This project applies artificial intelligence techniques to Earth Observation satellite data to develop and implement a preventive alert system based on continuous monitoring of the Arctic region, that the melting ice has made more accessible and therefore more vulnerable from an environmental and security point of view.
This capacity for observation and analysis allows to **develop climate change mitigation and adaptation strategies, to study the effects of anthropisation** on the planet and to act in time to **maintain infrastructure** and the **cultural and artistic heritage**.

[3] Telespazio (Leonardo 67%, Thales 33%) and Thales Alenia Space (Thales 67%, Leonardo 33%).

[4] Earth observation programme dedicated to monitoring the planet and its environment for the benefit of citizens, developed by the EU in cooperation with the European Space Agency (ESA).

[5] A satellite system of the Italian Space Agency (ASI) and the Ministry of Defence for Earth observation, equipped with synthetic aperture radar sensors, providing global coverage of the planet in all weather conditions.

[6] PRISMA is an ASI mission carrying the world's most powerful operational hyperspectral instrument made by Leonardo.

[7] Project co-funded by the European Union under the Horizon 2020 programme, in collaboration with SATCEN and internationally renowned industrial and scientific partners.

[8] e-GEOS (Telespazio 80% and Italian Space Agency 20%).

TECHNOLOGICAL SOLUTIONS, PROGRAMMES AND MISSIONS FOR SUSTAINABILITY

Air and wind

APPLICATIONS
Wind monitoring, air quality and air pollution control.

PROGRAMMES, MISSIONS AND INSTRUMENTS:

MTG Meteosat Third Generation: ESA programme in cooperation with EUMETSAT to develop increasingly accurate climate forecasts through predictive models.

Lightning Imager: an instrument on board MTG-imager satellites, which can track lightning from a distance of 36,000 km to support short-range prediction of extreme weather events.

MetOp Second Generation (Meteorological Operational Satellites): an ESA programme in collaboration with EUMETSAT that uses polar satellites to provide weather and environmental forecasts.

3MI (Multi-viewing, Multichannel, Multi-polarisation Imager): an electro-optical instrument for studying air quality and cloud characteristics that will be brought into orbit by the second-generation MetOp satellites.

Aeolus: an ESA satellite capable of measuring wind speed and direction, even where meteorological measurements are not available, such as ocean areas, providing up to 7-day forecasts and more accurate climate models.

ALADIN (Atmospheric, Laser Doppler Instrument): an instrument equipped with the most powerful ultraviolet laser transmitter ever built for a space application, created by Leonardo. It provides data for wind measurement, weather forecasting and the study of long-term climate variations.

Water

APPLICATIONS
Protecting and managing water resources and biodiversity in the sea, carrying out water quality/quantity analyses; monitoring the state of coastal erosion and of rising ocean surface.

PROGRAMMES, MISSIONS AND INSTRUMENTS

Copernicus: the European Commission's Earth observation programme coordinated in cooperation with the ESA and aimed at monitoring the environment, mitigating the effects of climate change, and contributing to management of humanitarian emergencies, natural disasters and population's safety.

SLTSR (Sea and Land Surface Temperature Radiometer): on board the Sentinel 3 satellites of the European Copernicus programme, the radiometer measures land and water temperature to an accuracy of a tenth of a degree from an altitude of 800 km, using optical and thermal sensors.

GEOSPATIAL PLATFORMS

SEonSE (Smart Eyes on the SEas): a geospatial platform that provides information on illegal activities or other abnormal events, such as oil spills, to preserve marine resources and monitor the evolution of the marine and coastal environment.

Earth

APPLICATIONS
Protection of the biodiversity in flora and fauna and development of precision agriculture through sustainable soil management, monitoring deforestation, combating desertification.

PROGRAMMES, MISSIONS AND INSTRUMENTS:

Copernicus: the European Commission's Earth observation programme coordinated in cooperation with the ESA and aimed at monitoring the environment, mitigating the effects of climate change, and contributing to management of humanitarian emergencies, natural disasters and population's safety.

SLTSR (Sea and Land Surface Temperature Radiometer): on board the Sentinel 3 satellites of the European Copernicus programme, the radiometer measures land and water temperature to an accuracy of a tenth of a degree from an altitude of 800 km, using optical and thermal sensors.

FLEX (FLuorescence, EXplorer): an ESA satellite programme to map the fluorescence of photosynthesis with a planned launch in 2025.

Floris: a high-resolution spectrometer that detects the fluorescence intensity of chlorophyll photosynthesis from approximately 800 km to map the health of the world's vegetation. It will be used for the FLEX programme.

COSMO-SkyMed: a programme funded by the ASI and the Ministries of Defence and Education and University and Research, which constantly monitors the Earth to support management of natural events, emergencies and to study the effects of climate change.

PLATiNO (Piattaforma spaziale ad Alta TecNOlogia): a programme of four missions developed by the ASI. PLATiNO-1 will be equipped with SAR (Synthetic Aperture Radar) technology; PLATiNO-2 will feature infrared thermal equipment capable of measuring the temperature of the Earth. For the PLATiNO-3 mission, Leonardo will build a very high-resolution optical camera, and for PLATiNO-4 it will supply a compact, lightweight hyperspectral camera of the latest generation.

Biomass: an ESA mission that will monitor the structure of forests, including biomass, to provide more information on the carbon cycle.

GEOSPATIAL PLATFORMS

AgriGeo: a platform that combines satellite data and ground-based sensors for precision agriculture, to monitor the growth and health status of crops, plan agronomic work, assess risks, save on water and fertiliser, and target the use of pesticides in a sustainable manner.

brAInt: it can detect even the smallest changes in surfaces by processing and reducing the complexity of remote sensing data. For example, it is essential for protecting forest areas.

Mapcy: it provides geographic information and rapid mapping in near real time, to support management of natural and man-made disasters such as floods, drought fires, torrential rains or abnormal water flows.

Geo Information Centre (GIC): a true geo-information station with an antenna, software and hardware installed at the end user's site to provide value-added products based on satellite images, integrating systems, processors, algorithms and different application platforms in a single "end-to-end" solution.

Cleos (CLoud Earth Observation Services): a digital marketplace for geo-information data that allows users to develop new services and applications in a scalable, flexible and secure multi-cloud platform.

AWARE (Agile Watching of Assets and REsources): can continuously monitor the health of infrastructure to identify deformations and critical changes, with possible applications on historical buildings and monuments, and in urban infrastructure management.

Platforms　Programmes and missions　Earth observation instruments

Prisma mission

Among the most prominent solutions for environmental monitoring, **PRISMA** is the Italian Space Agency's hyperspectral mission to map the Earth's surface for environmental risk management. Since the start of its operations in 2019, the hyperspectral instrument built by Leonardo - operating in over 200 bands in the visible and short-wave infrared spectrum, and travelling at 27,000 km per hour – **has been analysing the chemical and physical composition of the areas observed to detect even the slightest signs of fragility**. This instrument provides valuable data to monitor the health of the planet and preserve its resources. This serves to promote a concrete sustainable transition, in particular for **monitoring water transparency, crop health, drought, risk of biodiversity loss, fire risk, air pollution**, and **natural disasters such as volcanic eruptions, landslides and floods**.

In support of the aforementioned applications and on behalf of ASI, e-GEOS led the development of PRISMA's thematic processors to produce specific indicators for vegetation dryness, chlorophyll and algae in water, soil characterisation and moisture content. In this context, e-GEOS, with national scientific teams and the support of the FAO, is leading a project to develop experimental Earth observation-based **analysis techniques for water resource management** and **food security** in Africa, promoting technology transfer to local businesses.

Telespazio's Santa Lucia GIC project

The Santa Lucia GIC platform, designed and developed by e-GEOS, provides local authorities on the Caribbean island with a tailor-made solution for forecasting and monitoring extreme weather events, such as hurricanes, in **order to prevent and manage hydrogeological risks and assess the damage** to delicate local ecosystems, thereby strengthening the resilience and adaptation of the entire ecosystem to the effects of ongoing climate change.

TERRITORIAL MONITORING AND CONTROL

Global Monitoring technologies - i.e. systems for monitoring and controlling the territory, infrastructure and urban environment - integrate satellite information and Earth observation services with data from radar and sensor systems, secure communication systems, operational command and control rooms, helicopters, aircraft, uncrewed drones, databases and open sources. By aggregating and correlating this data and information, they build a constantly updated situational picture, providing the operators with tools to support decision making and coordinate resources in the field. Leonardo provides several solutions that help supply and analyse these data, such as **T-DROMES**, Telespazio's proprietary platform that use drone services for monitoring infrastructures, environment, biodiversity, and precision agriculture, supporting law enforcement and medical goods transportation.

X-2030

The X-2030 platform is Leonardo's **Global Monitoring** solution. As a "system of systems", the platform offers command and control, communication, cyber and intelligence capabilities for territorial monitoring and is able to **process and exploit huge amounts of data from a wide range of sources in real time**. Through operational command and control rooms, X-2030 provides an integrated view of the operational environment. For example, it is used **for monitoring environmental and man-made events, risk prevention, as well as for city management and urban security purposes**.

EMERGENCY RESPONSE

Managing environmental and pandemic emergencies is an increasingly complex issue that require integrated management and deployment of state-of-the-art technological tools.

SOLUTIONS FOR HEALTH EMERGENCIES

Leonardo has developed solutions for **monitoring disaster areas and intervening in environmental disasters or health emergencies.** By integrating real-time information from air, sea and land sensors, the command and control solutions provide a net-centric environment to **coordinate rescue operations by land, air and sea, using networks, terminals and satellite links, and mission critical communication systems.** The latter, with the narrowband (capable of guaranteeing operation even with infrastructure malfunctions), broadband (on LTE and 5G for higher speed and capacity data transmission), and multi-technology integrated narrowband/broadband (offering full interoperability between different radio carriers) solutions, offers a completely **reliable** service and full **coverage** of the territory, ensuring immediate and secure communication in monitoring, public safety and emergency activities.

"Hospital in flight" programme – Helicopters and convertiplanes are transformed into "flying hospitals", equipped to provide life-saving treatment, **take the doctor to the patient** in the shortest possible time and then transfer them quickly to the most suitable hospital facility. Configured as an EMS (Emergency Medical Service), they are able to intervene quickly, stabilise the patient and **send the clinical parameters to the relevant hospital via a data link.** The use of these machines in medical rescue completely redefines the concepts of distance and boundary and enables more effective and efficient management of out-of-hospital emergency situations.

Integrated health emergency platforms – Telespazio and e-GEOS have developed **ECO4CO** (Earth COgnitive system for COvid-19), winner in the Health Emergency category of the global call "Innovative Ideas and Technologies vs. COVID-19 and beyond" launched by the United Nations Industrial Development Organisation (UNIDO) in response to the Coronavirus emergency. ECO4CO is a platform for integrating data from observation and navigation satellites with data from open sources to **monitor crowded areas** (parks, markets, stadiums), **isolate new outbreaks of the epidemic and make forecasts about the emergency situation** on the basis of health trends.

Aircraft and helicopter configurations for medical emergencies – During the Coronavirus emergency, as part of the consolidated partnership with the Guardia di Finanza (Italian finance police), Leonardo developed a **new configuration of the ATR42MP aircraft** with bio-containment systems to transport Covid 19 patients. Bio-containment systems were also adopted in **helicopters** to allow rapid transfer of Covid-19 patients and medical equipment between hospital facilities. **C27J Spartan aircraft**, equipped with systems capable of transporting highly infectious patients, was also deployed for emergencies in Europe, Latin America and the USA, and for transporting goods to support Civil Defence.

Production of valves for respirators – At the Grottaglie (FG) site – specialised in advanced technologies for the production of carbon fibre aircraft parts – Leonardo **provided its expertise in additive manufacturing to produce valves used to convert diving masks into respirators**, a project developed by the Brescia-based company Isinnova in aid of hospital facilities.

SOLUTIONS FOR LAND AND MARITIME EMERGENCIES

Land and Maritime Surveillance – crewed and uncrewed fixed-wing solutions capable of carrying out surveillance missions while contributing to environmental monitoring and protection. These include:

- **Falco Evo**, a remote-controlled system with long-range flight capability, equipped with radar and electro-optical systems, used in land and maritime surveillance.
- **ATR72 Maritime Patrol Aircraft**, a multi-mission aircraft designed to perform a wide range of tasks, including Search And Rescue (SAR), intelligence, surveillance and reconnaissance, as well as pollution diagnosis.

Fires – The **C-27J Spartan** aircraft, whose **Fire Fighter** configuration is already used in fire-fighting missions, has been further developing this capability as part of its multi-mission approach. Thanks to the integration of MAFF II (Modular Airborne Fire Fighting System), the aircraft will be able to interact with ground assets and respond to emergencies more effectively. The system will be used not only for firefighting, but also in prevention and support activities for land reclamation.

Copernicus Emergency Management Service (EMS) – Rapid Mapping

e-GEOS is the leader of the Industrial Consortium that provides the Copernicus Emergency Management Service (EMS) - Rapid Mapping service for the European Commission, as part of the Copernicus satellite Earth observation programme. This service, which supports Civil Defence worldwide, **provides maps of areas affected by natural or man-made disasters and humanitarian and health crises**. Copernicus EMS Risk & Recovery, on the other hand, develops risk analyses used for prevention and for planning actions to mitigate the effects of natural events, or to follow post-emergency reconstruction. It was used to support emergency management during the flood in Emilia-Romagna in May 2023. On this occasion, post-event images by the COSMO-SkyMed satellite constellation allowed to detect the most damaged areas, thus guiding rescue operations. Since 2012, **more than 7,000 maps have been produced in response to 400 events in 90 countries worldwide**.

SUSTAINABLE SPACE MANAGEMENT

As shown by the aforementioned solutions, **the future and well-being of our planet is partly linked to "in orbit" technologies**, whose contribution is amplified by the use of big data analysis, Artificial Intelligence and the computing capabilities of supercomputers such as the davinci-1.
International collaborations have a key role in Leonardo's efforts to develop these technologies. The collaboration between **Leonardo LABS and ESA's Φ-lab** is an example of them and it will accelerate research into Earth observation technologies. Through the **Space Alliance**[9] joint ventures, Leonardo also plays a leading role in the most important international space programmes, in which it produces satellites, orbiting infrastructures and rovers (Thales Alenia Space), equipment and instruments (Leonardo), and satellite services and applications provided by Telespazio and e-GEOS.

COMMITMENT TO A SAFE AND SUSTAINABLE SPACE

Space Situational Awareness is the ability to **visualise, understand and map the physical position of natural and man-made objects orbiting the Earth**. More than 600,000 objects currently gravitate in low orbit, exposing valuable space assets to collision risk. All of these diverse objects may also potentially cause damage to the safety of the population in the event of an uncontrolled fall onto inhabited areas of our planet.
In this context, in 2018, Leonardo, together with Telespazio and Thales Alenia Space, invested in NorthStar Earth & Space, which has been developing a satellite constellation that will make it possible to **identify the trajectory of objects and space debris**. The first three satellites are scheduled to be launched in 2023.
As the number of orbiting satellites and space missions increases, so does the importance of in-orbit services. **"In-Orbit Servicing"** refers to all in-orbit activities, including docking, refuelling, repairing, upgrading, maintaining space assets and removing debris. **Leonardo provides excellence services and products in this area, ranging from robotics and sensor technology to operations management**.

[9] Established in 2005, it is a strategic partnership between Leonardo and Thales, which includes the two joint ventures Telespazio (Leonardo 67%, Thales 33%) and Thales Alenia Space (Thales 67%, Leonardo 33%).

SUSTAINABLE SUPPLY CHAIN

Promoting sustainability in a supply chain that involves more than **10,500 suppliers** globally - predominantly small and medium-sized enterprises (SMEs) - is a **key factor in Leonardo's competitiveness**, which translates into actions to:
› raise awareness about the SDGs and supporting tools for sustainability reporting among over 80% of key suppliers;
› encourage partners to adopt defined targets and plans on green energy, CO_2 emissions, waste recycling, water consumption.
The **tools** that the company has adopted to concretely guide the efforts of SMEs are: the LEAP (Leonardo Empowering Advanced Partnership) partnership for sustainability, the Supply Chain Sustainability Manifesto and the LEADS (Leonardo Assessment and Development for Sustainability) assessment model, a tool that measures the sustainability level of suppliers according to defined parameters.

LEAP PROGRAMME (LEONARDO EMPOWERING ADVANCED PARTNERSHIP)

Leonardo's strategy for sustainable growth of the supply chain and development of key suppliers counts several actions and projects implemented through the LEAP Programme, launched in 2018. LEAP is a **transformation accelerator that aims at measuring, evaluating, selecting, engaging and developing suppliers that are partners** of the Group through a framework of shared processes, methodologies and tools. In particular, LEAP aims to create the best conditions for enhancing the capacity and technological excellence of partners in a more sustainable context.
Sustainability is an integral part of all phases of the process that links Leonardo to its suppliers, from pre-qualification and qualification requirements to selection criteria in tenders, from contractual Terms & Conditions to assessments dedicated to continuous improvement of key suppliers. The degree of "acceleration" imposed by Leonardo differs according to the role the supplier plays in the supply chain.
Sustainability topic is addressed by defined targets and plans that require **suppliers, by 2023, to use green energy sources, reduce CO_2 emissions and water consumption, recycling, raise awareness and provide training**. Out of **over 1,300 suppliers analysed, 200 are eligible for partnerships and over 130 are involved in** improvement and development projects.

LEADS - LEONARDO ASSESSMENT AND DEVELOPMENT FOR SUSTAINABILITY

LEADS, the new **model for assessing sustainability aspects and risks of key suppliers as well as to promote their development** was introduced in 2020. Its purpose is to promote all-round growth of Leonardo's partners by monitoring their **performance** (quality, punctuality and costs), technical and operational **capacity** and **sustainability**. Regarding the **ESG sustainability component**, from 2021 to 2022, Leonardo assessed **over 800 key suppliers**, covering over 32% of the value ordered from suppliers, to identify strengths and areas for improvement **on various topics, including social and environmental responsibility, innovation and managerial skills**. Of the 800 key suppliers analysed on the ESG sustainability component, 54 were involved in a continuous **improvement path** that also covers the other two LEADS assessment branches (Operational Performance and Technical Skills and Industrial Capabilities), whose progress is **monitored on a quarterly basis** by a multi-function and multi-division team.

LEADS radial diagram with segments: Compliance/Risk management, Business health/strategy, Social and enviromental Responsibility, Innovation capabilities/Digitalisation, Managerial capabilities/People management, Technical capabilities, Asset availability/Capacity, Operational Excellence, Pricing/cost Attention, On time delivery, Overdue index, Quality rating.

LEADS: Main results

Business Ethics
80% of the companies have adopted their own **code of ethics**

Skill mapping
62% of the companies have an up-to-date mapping of employee **skills**

Action for Planet
35% of the companies will have a **sustainability report** by 2023. **25%** have already defined/planned **measurable projects** to reduce environmental impacts

Green Energy
65% of the companies use up to 36% energy from renewable energy sources

STEM
In **40%** of the companies, more than a half of the employees **have diplomas or degrees in STEM subjects**

Circular economy
50% of the companies have planned **projects** inspired by the principles of **circular economy**

Modern Slavery
94% of the companies say they **have no suppliers in countries** considered to be at **risk**

Digital Collaboration
74% of the companies collaborate with Leonardo digitally

SUPPLY CHAIN SUSTAINABILITY MANIFESTO

In 2021, on the basis of the first LEADS assessment on supplier sustainability, Leonardo published the Supply Chain **Sustainability Manifesto** that sets out the priorities – broken down into 18 projects – to support and accelerate the transformation of Leonardo's supply chain and its SMEs, **guiding their path towards sustainability**.
The Manifesto leverages on three main topics: Digital Transformation, Cyber Security and **People & Planet**. As for the latter, Leonardo focuses on specific aspects by defining a series of targeted actions:

Safety first: to ensure health and safety at work through advanced management systems.

Responsible business and talent development: to ensure that business conduct is in line with Leonardo's principles and rules, foster gender equality and develop managerial skills.
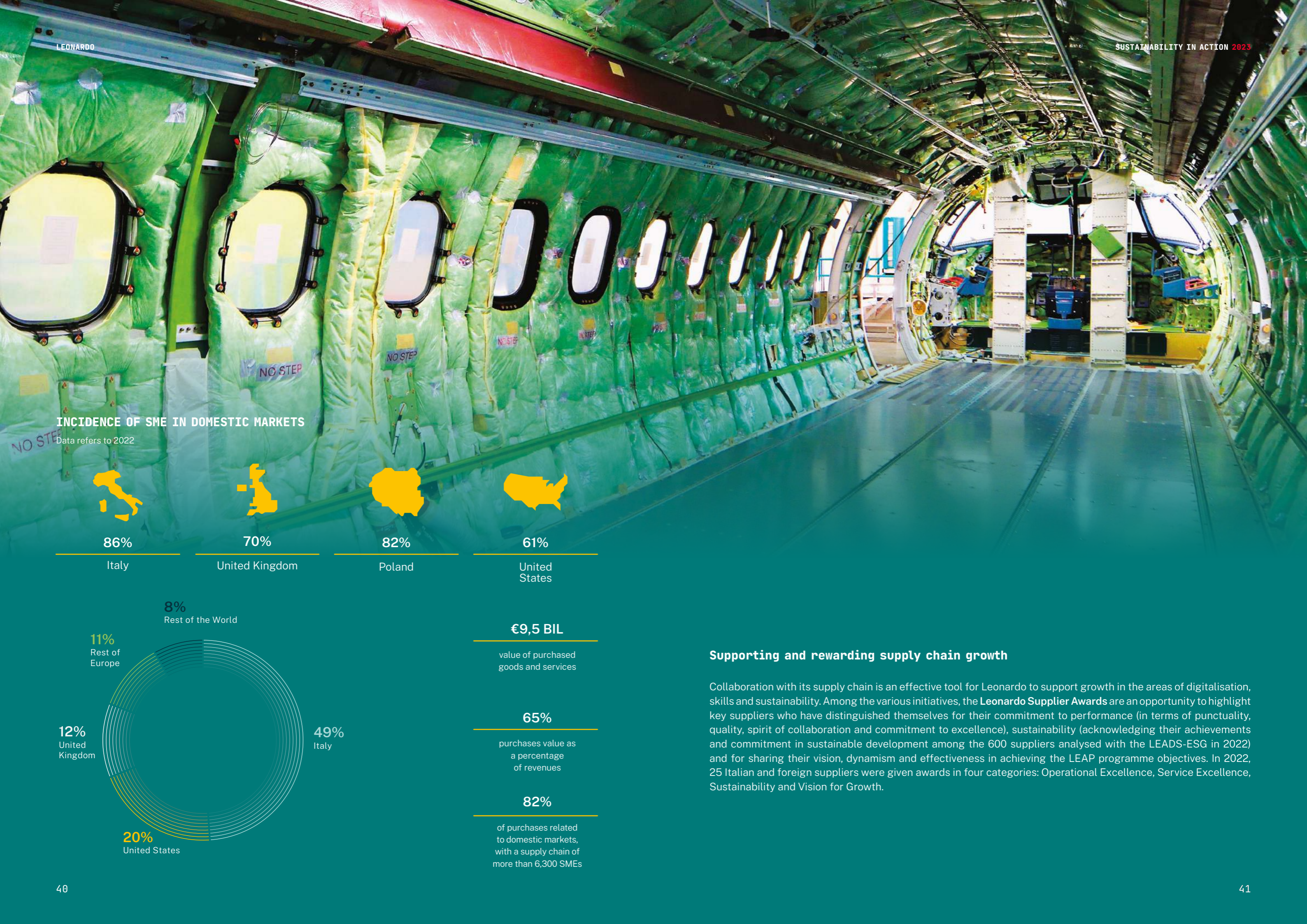
Industrial efficiency: to optimise production processes, including through lean transformation programmes.

Action for Planet: to deploy resources to measure and reduce GHG emissions, water consumption and waste generation, including through sustainable mobility.

Green energy: to aim for 100% renewable energy with guaranteed origin.

Eco-design and circular economy: to design new products with environmentally friendly materials and a circular approach.

INCIDENCE OF SME IN DOMESTIC MARKETS
Data refers to 2022

86%	70%	82%	61%
Italy	United Kingdom	Poland	United States

8%
Rest of the World
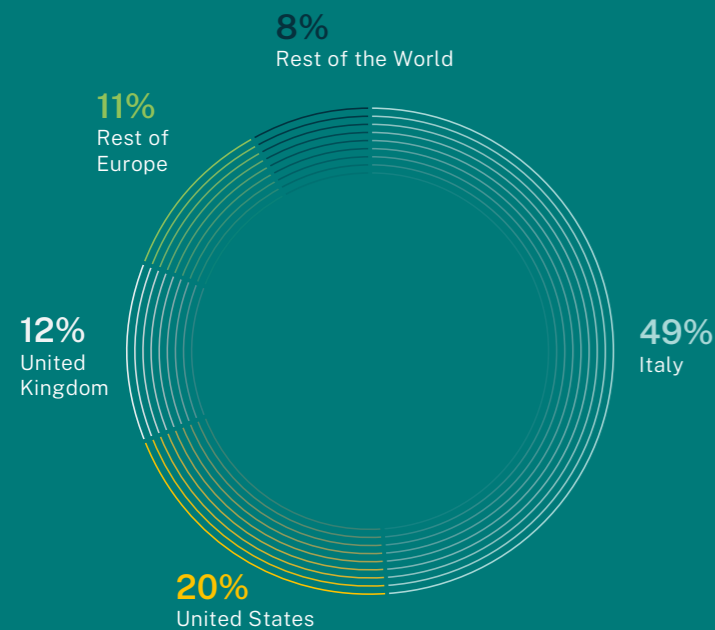
11%
Rest of Europe

12%
United Kingdom

49%
Italy

20%
United States

€9,5 BIL

value of purchased goods and services

65%

purchases value as a percentage of revenues

82%

of purchases related to domestic markets, with a supply chain of more than 6,300 SMEs

Supporting and rewarding supply chain growth

Collaboration with its supply chain is an effective tool for Leonardo to support growth in the areas of digitalisation, skills and sustainability. Among the various initiatives, the **Leonardo Supplier Awards** are an opportunity to highlight key suppliers who have distinguished themselves for their commitment to performance (in terms of punctuality, quality, spirit of collaboration and commitment to excellence), sustainability (acknowledging their achievements and commitment in sustainable development among the 600 suppliers analysed with the LEADS-ESG in 2022) and for sharing their vision, dynamism and effectiveness in achieving the LEAP programme objectives. In 2022, 25 Italian and foreign suppliers were given awards in four categories: Operational Excellence, Service Excellence, Sustainability and Vision for Growth.

TRANSPARENCY AND BUSINESS INTEGRITY

Integrity and respect for rules are the principles that **guide** Leonardo's **relations with all stakeholders**. These elements underpin the responsible business model based on the principle of transparency, which the Group has strengthened over time through a system of rules, codes and monitoring processes. The system is aimed at preventing, identifying and responding to potential risks in business management, from **anti-corruption** to human rights. Leonardo has developed a policy that addresses the company's defence of **human rights** in three relevant areas: employee management, supplier relations and product sales and distribution activities.
Recognising the centrality of these issues, the company works towards a **culture of integrity** with the objective to constantly improve the company's **business** and **trade compliance**.

TRANSPARENCY AND FIGHT AGAINST CORRUPTION

Leonardo shared its experience in strengthening its model of responsible business conduct and transparency towards external stakeholders. This led the company to be included in the **highest level (band A) of Transparency International's Defence Companies Index on Anti-Corruption and Corporate Transparency (DCI)**. The index assesses the public information of 134 companies in the sector from 38 countries worldwide with reference to 10 key risk areas. In the area relating to 'Agents, Intermediaries and Joint Ventures', Leonardo was the only company in the Aerospace and Defence sector to be placed in band A. Moreover, Leonardo's **ISO 37001 certification** – the first international standard on **anti-corruption management systems** also covering responsible supply chain management – was confirmed. Leonardo was the first company in the top 10 in the AD&S sector to obtain it.

RESPONSIBLE BUSINESS CONDUCT

The activities of **training and raising awareness** about responsible business conduct are fundamental to creating a culture of integrity. To this end, Leonardo invests in training and developing the topic within its value chain, with specific attention to its **employees** and its **counterparts**. The integrity value system is also the basis of Leonardo's **continuous monitoring: due diligence** checks and the wrongdoing reporting system – namely **whistleblowing** - make it possible to robustly defend responsible business conduct.

TOOLS TO STRENGTHEN BUSINESS INTEGRITY

CONTINUOUS MONITORING

TRAINING

WHISTLEBLOWING
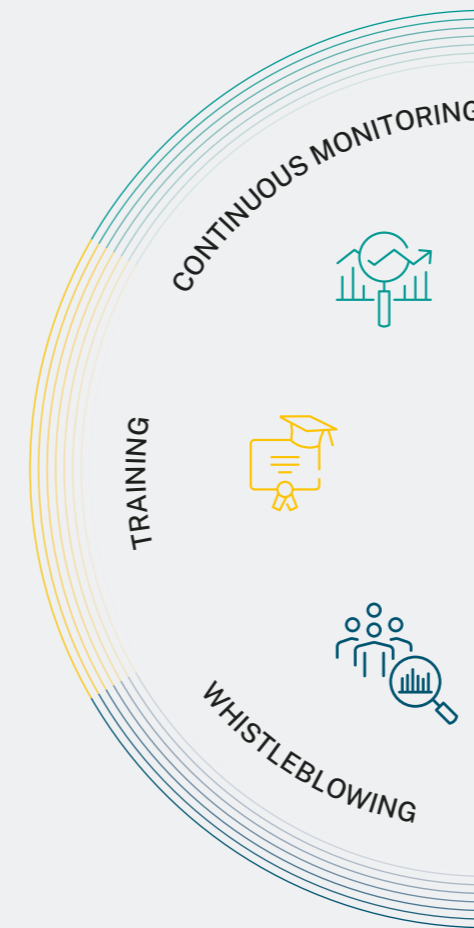
FOR EMPLOYEES

35,000 hours of business and trade compliance training in 2022 to approximately 16,000 participants

23,200 people trained on anti-corruption

FOR THIRD PARTIES

>300 hours of training provided to sales promoters, sales consultants and lobbyists

Before signing a contract, online training has become mandatory

~ 1,000 due diligence and reputation checks on counterparts and potential business partners

135 due diligence audits on sales promoters/consultants, distributors, retailers

41 reports received in 2022

HUMAN RIGHTS IMPACT ASSESSMENT

To further implement the Group's human rights policy and to take another step towards even stronger compliance, Leonardo has integrated the Human Rights Impact Assessment (HRIA) into its control system. A tool that aims to define the main risk factors in the area of human rights and the potential impact of the activities carried out by the company.

The HRIA was introduced into Leonardo's trade compliance system:

› **by country:** to identify countries that have been flagged by national and international bodies (the UN and the EU) due to human rights violations and, consequently, placed on the list of Sensitive Countries for which any potential transaction is carefully analysed and monitored;

› **by transaction**: to strengthen risk management in transactions involving countries on the list of Sensitive Countries. Human rights criteria were integrated into the dedicated risk analysis. Specific mitigation actions are identified if the transaction risk level is too high.

With the introduction of the HRIA, the list of Sensitive Countries was also extended and, as a result, monitoring of the Group's business transactions was increased.

Ethical artificial intelligence

The strong development of digital technologies and **Artificial Intelligence** present legal and ethical issues that require a careful analysis of the related risks and impacts (economic and social) and a commitment to manage and mitigate them. Therefore, Leonardo actively participates in national and international working groups to **develop sound regulation**, and is committed to recognised principles for ethical development and use of AI in its defence products and services. In addition to compliance with the strict European regulations, Leonardo ensures compliance with the 11 guiding principles on **Autonomous Systems defined by the UN in 2019**.

With particular reference to Autonomous Weapon Systems, Leonardo is committed to the **fundamental principles of International Humanitarian Law (IHL)**, which include the distinction between civil and military targets, the limitation of collateral damage as far as possible and their proportionality in relation to defence and security needs. Finally, the company adheres to the recognised **Human-On-The-Loop** (HOTL) and **Human-In-The-Loop** (HITL) standards to ensure that the use of autonomous weapon systems in safety-critical conditions is subject to human supervision and control.

SCIENTIFIC CITIZENSHIP, DIVERSITY, EQUITY AND INCLUSION

In Leonardo, attention to the people means building a **dynamic and inclusive society**, fostering the spread of **new skills**. This involves actions towards internal resources, contributing to employees' well-being and growth, but also externally, through initiatives in the areas of scientific citizenship, diversity, equity and inclusion.

Commitment to the territory

In addition to its strong commitment to scientific citizenship and diversity, equity and inclusion, Leonardo supports several projects for the communities and territories in which it operates. These include a reforestation project on the Foggia industrial site, as part of the collaboration with **Arbolia**[10], which involved planting 1,650 trees that are estimated to absorb over 360 tonnes of CO_2, abate 16 tonnes of PM10 and release over 260 tonnes of oxygen over 20 years. In addition, Leonardo supports several plastic collections in its operational territories, in collaboration with the **Plastic Free** voluntary association, by involving its employees; in 2022, it contributed to collecting more than 2 tonnes of waste.

On a social level, the company recovers surplus food from its Italian plants for non-profit organisations through the **Programma Mense Responsabili (Responsible Canteens Programme)**, in partnership with the Fondazione Banco Alimentare (Food Bank Foundation) and canteen service providers. Since the start of the programme, food with an economic value of over 3 million Euro has been distributed.

[10] Italian benefit company, set up on the initiative of Snam S.p.A. and Fondazione CDP, which promotes and implements afforestation at various sites to combat global and local warming and improve air quality.

INITIATIVES FOR EMPOWERMENT AND INCLUSION

The company's commitment to skills and inclusion starts from its employees. The many initiatives carried out in these areas, in line with the Group's targets and the Sustainability Plan, have led to significant results both in the field of **STEM skills** – a pillar of Leonardo's business –, **diversity** of the corporate population and **gender equality**, with a strategy based on attracting new female talents through STEM role models, selection processes and **inclusive work environments**, with particular reference to women through development, training and coaching.

STEM SKILLS

1.1 million training hours delivered

966 training courses activated with the education system

62% of employees have a STEM qualification

59% of new hires have a STEM qualification

INCLUSION

15.1% to 18.7% women managers out of the total number of top managers and middle managers from 2017 to 2022 (+455 employees)

Over 4,900 women hired since 2018

Over 9,200 under-30s hired since 2018

95.3% women/men pay ratio

Unless otherwise indicated, data refers to 2022.

Springboard programme

Launched in 2020, the collaboration with Springboard - a development programme dedicated to women – combines the two souls of Leonardo's commitment to training employees and building an inclusive work environment, including through women empowerment. Across the six editions, more than **140 female employees** were involved in an international programme to strengthen **women's leadership** by creating a reference community to provide women with professional and personal support, enhanced by sharing among different cultures.

SCIENTIFIC CITIZENSHIP

The dissemination of "**scientific citizenship**" - meaning sharing knowledge, technological skills and innovation with communities - and the commitment to an **inclusive scientific culture** are key elements in Leonardo's Sustainability Plan and long-term strategy.

The company promotes upskilling and reskilling programmes for employees, while supporting the dissemination of scientific culture outside the Group. Several initiatives **promote STEM disciplines** (Science, Technologies, Engineering and Mathematics) - with a special focus on the inclusion of girls – and are carried out through training measures at all levels of school, university and research systems.

STEM LAB

A free training course (on Artificial Intelligence, big data, additive manufacturing, drones and electrification) on a digital platform for teachers and secondary school pupils from all over Italy, with lessons taught by Leonardo experts. Between 2021 and 2022, more than **1,300 teachers** enrolled, more than **1,000 schools** and over **50,000 students** involved.

ITS ACADEMY

At the end of 2022, thanks to an agreement between the Leonardo Foundation, the Emilia-Romagna, Liguria, Apulia, and Umbria Regions, MITD, the Cyber Security Agency, Confindustria INDIRE, the National ITS Association and the Ministry of Education, a national digital skills ecosystem was set up to create ITS Academy curricular training courses for training diverse profiles.

YOUNG CYBER AND SECURITY ACADEMY

Leonardo is a partner of the Academy founded in 2022 for teachers and students between the ages of 11 and 19, to bring the topic of **computer security** into schools, raise awareness on the **dangers of the web** and train web users to be aware.

BECOMING A DIGITAL CITIZEN

Resulting from the agreement between Leonardo, Fondazione Leonardo Civiltà delle Macchine (Leonardo Machines Civilization Foundation) and the General Command of the Carabinieri, the project **pursues the reduction of the digital age divide in Italy** by facilitating access to new technologies by elderly social groups.

IL CIELO ITINERANTE

Leonardo collaborates with the association Il Cielo Itinerante (Travelling Sky) in the project "Italia Brilla - Costellazione 2023" (Italy Shines - Constellation 2023), which **brings younger people closer to STEM** subjects and, in particular, to **space** topics, especially in critical territories. The activity – also involving Leonardo employees' children – includes guided observations of the sky with telescopes and interactive workshops with specialist science lecturers.

DIVERSITY, EQUITY AND INCLUSION

Leonardo considers **promoting diversity** to be a distinctive factor for competitiveness, attracting talent and enhancing human capital. The approach takes the form of listening, mentorship and coaching initiatives, training courses on gender bias and accommodating disability, as well as **outward-looking programmes** to disseminate inclusive leadership models and bring girls closer to STEM disciplines, in addition to projects for **vulnerable groups**. Leonardo has also **introduced the target of increasing recruitment of women with STEM degrees** into its **remuneration policy**, in particular into the long-term incentive plan for the CEO and management.

The company's commitment is recognised internationally with its inclusion in the **Bloomberg Gender-Equality Index (GEI) 2023** for the third consecutive year. Leonardo scored top marks for transparency in disclosing required information and was ranked above the industry and global averages for fairness and equal pay, policies against sexual harassment, and corporate brand recognition as a pro-women brand.

INCLUSIVE CULTURE: ROLE MODEL AND YOUNG WOMEN EMPOWERMENT PROGRAM (YEP)

The **Role Model** project was created for inspiring, motivating and orienting young people towards the skills and professions of the future by breaking down the gender stereotype through an intergenerational exchange in schools with Leonardo's STEM Role Models. A case in point is the Young Women Empowerment Program (YEP) dedicated to female students in Southern Italy and promoted by the Ortygia Business School Foundation, which pursues an education based on the skills of the future and a **culture of gender equality**.

COLLABORATION WITH VALORE D

Through a collaboration with Valore D, Leonardo has strengthened **training** for its employees on diversity, equity and gender inclusion topics as well as new models of inclusive leadership. This includes individual self-awareness paths and development of inclusive skills, training modules and streaming activities such as the **Talks Academy**. Leonardo has also shared best practices on the management of this topic with the other companies in the network through the **Sharing Lab** format.

HACKHER_

Leonardo supports 'hackher_', a multidisciplinary initiative to bring girls into the STEM world and promote gender equality in Information Technology.

SCHOOL-BUSINESS SYSTEM PROJECT

As part of the programme, Leonardo provided secondary school students with the **testimonies of 25 role models, female employees with STEM backgrounds**, who gave 21 hours of training to guide the students towards their aspirations through inspirational talks.

Conecta Selva Project

In line with Leonardo's commitment to inclusive digitalisation, Telespazio Argentina is working on the **CONECTA SELVA project in Peru**, which started in 2021 with the ambitious goal of bringing **satellite internet connection** to priority schools and health facilities in the Peruvian Amazon area. As part of the project, Telespazio will install a VSAT (Very Small Aperture Terminal) antenna at each site to provide web connection via satellite to 1,316 sites, of which 1,212 are schools. They will be powered by energy systems that use solar panels and batteries to supply **sustainable electricity**. Each school will be equipped with a Wi-Fi network, routers and computers capable of running software with educational content, while a hotspot tower will be installed outside the buildings for the **benefit of local communities**.

LIFEED

Lifeed is a caring company initiative dedicated to **new parents** (with children up to 3 years old) and **expectant mothers**. The goal of the training initiative is to combat the stereotype that career and private life are often in competition with each other and to show how energy spent in the family environment enables development of key skills in the professional sphere as well.

GIRLS@POLIMI

In 2022, Leonardo made **4 scholarships** available to senior high school students interested in enrolling in Aerospace Engineering, Automation, Electrical Engineering, Electronics Engineering, Computer Science, Mechanical Engineering and Industrial Production Engineering at the Politecnico di Milano.

SUPPORT FOR STEM WOMEN IN THE UNITED KINGDOM

Through career fairs, summer schools and dedicated competitions, Leonardo increased recruitment of girls for internship, apprenticeship and industrial placement roles in the UK by almost 20%, receiving around 20,000 spontaneous applications.

AVANCHAIR PROJECT

The collaboration between the startup Avanchair and Leonardo has created an innovative **electric wheelchair that allows disabled people to make lateral movements**, such as from the chair to the bed, linking sustainable mobility and independent movement, in line with Sustainable Development Goal N. 10 to reduce inequalities.

SUPPORT FOR WAR VETERANS IN THE USA

Over 90% of Leonardo DRS' community investments in the USA support initiatives for **war veterans** and their families, as well as **disabled athletes**, including the Armed Services YMCA, Fisher House and Army Ten Miler. DRS is recognised as a "national guard" with top honours, as well as being recognised by the Military Times as a Best for Vets Employer for helping veterans in their careers after discharge.

For more information, see:
leonardo.com/en/sustainability

LEONARDO
ACCELERATING TECHNOLOGY EVOLUTION