2024
Sustainability Report

tenova

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A Message from Our CEO

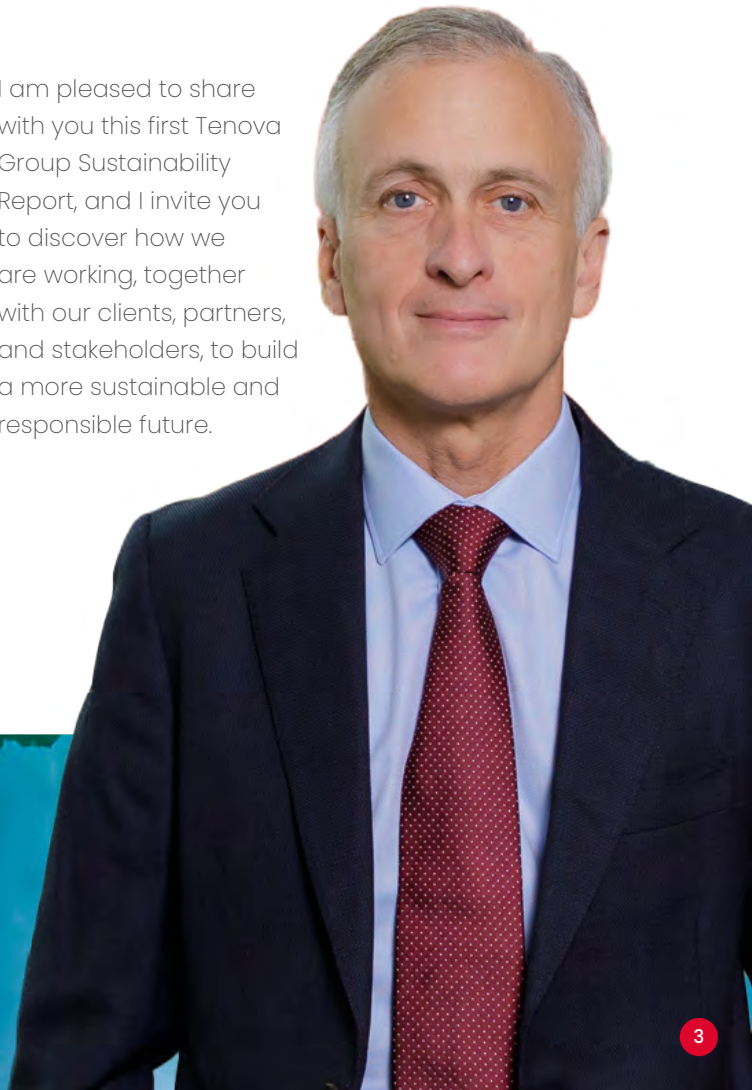
Dear Stakeholders,

2024 marks a significant milestone for Tenova Group: for the first time, we are presenting a single Sustainability Report that consolidates all our activities across the metals and mining sectors. This document reflects our long-standing commitment to sustainability, not only as a responsibility, but as a key driver of innovation, growth, and transparency.

In a global context characterized by unprecedented environmental, social, and economic challenges, our vision is clear: to support clients and partners in their transition toward lower-impact industrial models through reliable, safe, and forward-looking technological solutions. By combining the contributions of both Tenova and TAKRAF, we bring together the strengths of our two businesses in a way that creates real added value. This synergetic approach enables us to deliver affordable and innovative technologies that support our customers in addressing today's challenges while preparing for tomorrow's opportunities.

At the heart of this journey are our people. Their skills, passion, and professionalism are the cornerstones of our success. Thanks to their expertise, we can anticipate market needs, develop advanced solutions that respond concretely to environmental challenges, and maintain the highest standards of quality and safety. For this reason, we continue to invest in training, development, and well-being, convinced that skills, personal fulfillment, and quality of life are the foundation of progress and innovation.

I am pleased to share with you this first Tenova Group Sustainability Report, and I invite you to discover how we are working, together with our clients, partners, and stakeholders, to build a more sustainable and responsible future.



2024 **Highlights**

Environmental

Completion of the **H_2 Electrolyzer** construction site at Castellanza HQ for research and development activities

5,570 tCO_2e Scope 1 + Scope 2 Location-based emissions

1,010,000 kWh generated by our **solar panels**

Social

An average of **18 hours of training** per employee

83% response rate to our 2024 **Employee Opinion Survey**

TAKRAF **Women in Mining** communication campaign

Governance

Impact Materiality Assessment at Group level

Revised **Tenova Group Code of Conduct** + Introduction of **Code of Conduct for Suppliers**

72% of purchase budget spent **locally**

About **this Report**

This document is **Tenova Group's first Sustainability Report.** The Group's different entities have already been previously engaged in sustainability reporting efforts; however, for the first time, these initiatives have been brought together in a single consolidated document, covering both our mining and metals businesses. In this report, any reference to **"Tenova Group"** is to be intended as inclusive of **Tenova S.p.A. along with its subsidiaries** in line with the Tenova S.p.A. Consolidated Financial Statement. The term **"Tenova"** as used herein refers specifically to the activities in **metals**, while **"TAKRAF"** refers to the activities in **mining**.

The Report aims to provide the reader with clear, accurate, transparent and understandable information on the **relevant impacts** generated by Tenova Group in the environmental, social, and governance spheres, outlining the Group's **sustainability approach, policies, actions, and performances achieved during the period from January 1st to December 31st 2024**, and will be prepared on an **annual basis**. Given that this is the Group's first year of reporting, **consolidated historical data are not available**; thus, comparative data is not provided. Therefore, it should be noted that no restatements have been applied to prior periods. The contents are drafted **in accordance with the Global Reporting Initiative (GRI)** Sustainability Reporting Standards, published in 2021 by the GRI, and were identified based on the results of the **materiality assessment**, as explained in the section "Our Material Topics".

As for the **scope of the information** and data reported, some exclusions have been made in this year's reporting perimeter due to specific limitations in data availability or monitoring capacity. In addition, as regards environmental data, only offices and plants identified as utility holders have been included, as they are able to retrieve reliable data and have direct control over their energy consumption and emissions. Any additional **scope limitations are appropriately indicated** within the document. Consistent with the principles of comparability and transparency that guide the entire document, the use of **estimates has been limited**, and where applied, based on the best available methodologies and are clearly disclosed.

The Report is not subject to third-party assurance. The preparation of this document involved the coordinated efforts of all relevant company functions, with the **Sustainability Steering Committee** overseeing the materiality assessment process and validating its results.

For more information and feedback regarding this Report, published in September 2025, please contact **sustainability@tenova.com**.

About Tenova Group

Tenova Group encompasses Tenova S.p.A. and its subsidiaries, and aims to provide sustainable, innovative, and reliable solutions in the **metals and mining industries**. These businesses are developed through the activities of **Tenova**, a leading provider of sustainable solutions for the steel and metals industry, and **TAKRAF**, a leader in the mining sector regarding technological solutions. Headquartered in Castellanza (Italy), with **over 2,500 employees across 18 countries**, Tenova Group partners with global clients to design and **develop innovative technologies and services** that improve and futureproof their businesses, generating cost savings, and energy reductions, limiting environmental impact, and improving employee working conditions.

Our **collaborative working model** ensures we are at the forefront of the industries we work in and allows us to drive positive and comprehensive transformations for our clients.

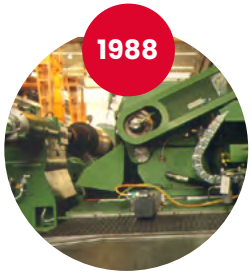
To learn more about our fully integrated range of sustainable products, technologies, and services for the metals and mining industries, please visit **tenova.com** and **www.takraf.com**.

Our **Journey**

From the foundation of Techint in 1945, over almost **eight decades** the Group has achieved significant milestones, driving innovation, and evolving to become a **leader in its respective industries**. This timeline highlights the key events that have shaped our remarkable journey to the present day.

1945 Founding of Techint

1988 Techint acquires Pomini



1994 Techint acquires Intersteel Tecnology, gaining Consteel®

1996 Techint acquires part of Italimpianti and incorporates Tagliaferri

1997 Techint Technologies is estabilished

2005 Techint Technologies acquires the Goodfellow Efsop process control system and sets up HYL Technologies

2006 Techint Technologies acquires LOI Thermprocess, Pyroment and Key Solutions.

2007 Techint Technologies rebrands as Tenova and acquires TAKRAF

2008 Core Furnace Systems in North America joins Tenova

2011 Tenova expands into Vietnam and acquires Nova Analytical System in Canada

2012 Tenova acquires the DELKOR group of companies

2020 Tenova reorganizes itself with TAKRAF and DELKOR brands focused on mining and Tenova on steel and metals

Our **Brands**

Tenova Group is committed to achieving the highest standards of engineering excellence in the metals and mining industries by continuously innovating to deliver the best technologies and sustainable solutions that enhance quality, improve energy efficiency, and reduce pollution and CO_2 emissions. To fulfil this mission, Tenova Group comprises two different yet integrated businesses: the **metals business**, active in the market with nine specialized brands, each dedicated to a specific technology; and the **mining business**, operating under the TAKRAF and DELKOR brands, delivering comprehensive solutions for mineral extraction, bulk material handling, and processing.

Metals business

tenova HYL

tenova PYROMET

tenova ADVANCED TECHNOLOGIES

tenova LOI THERMPROCESS

tenova ITALIMPIANTI

tenova I2S

Pomini TENOVA

tenova MATERIAL HANDLING

NOVA ANALYTICAL SYSTEMS A TENOVA COMPANY

Mining business

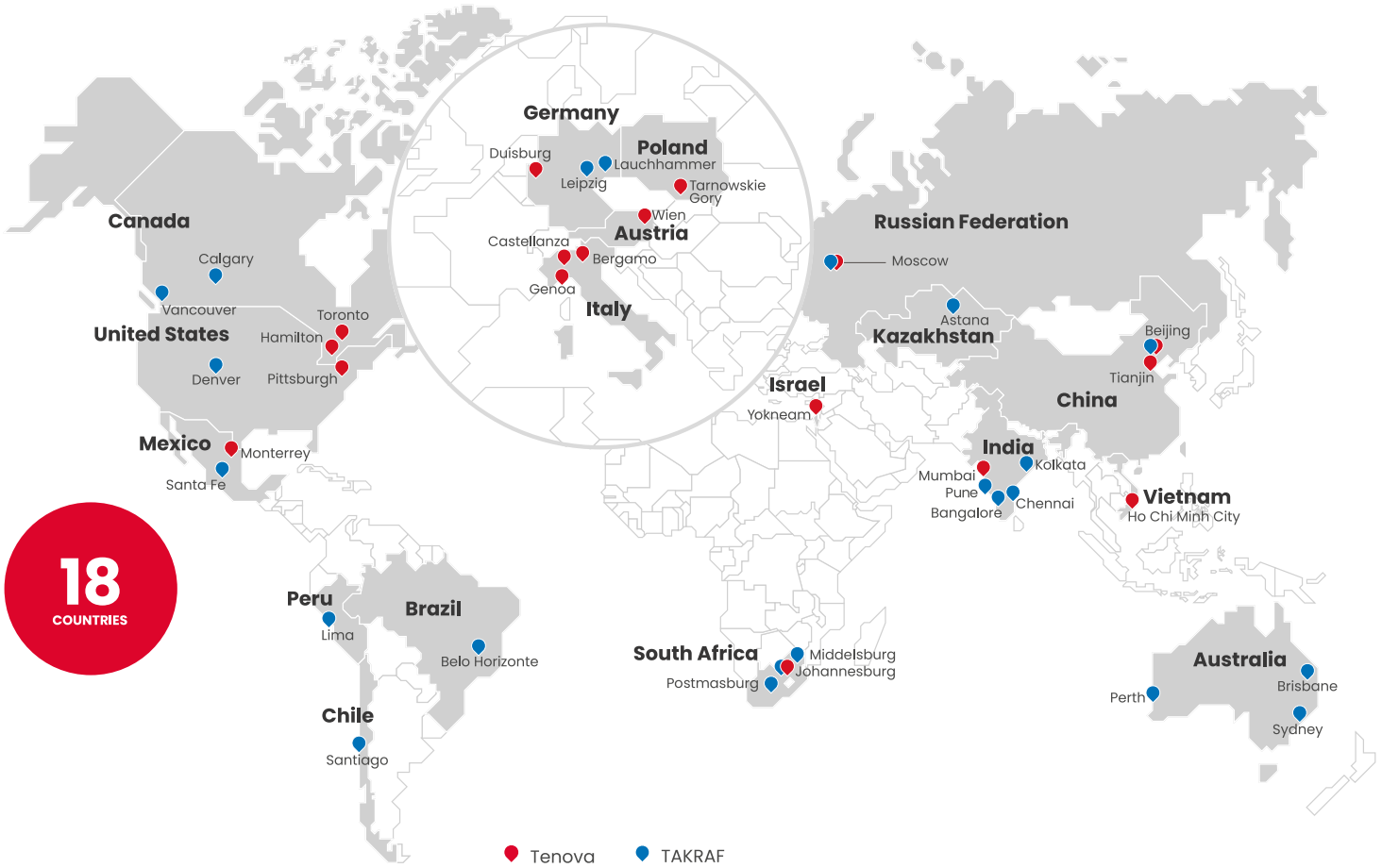
TAKRAF

DELKOR

Our **Global Presence**

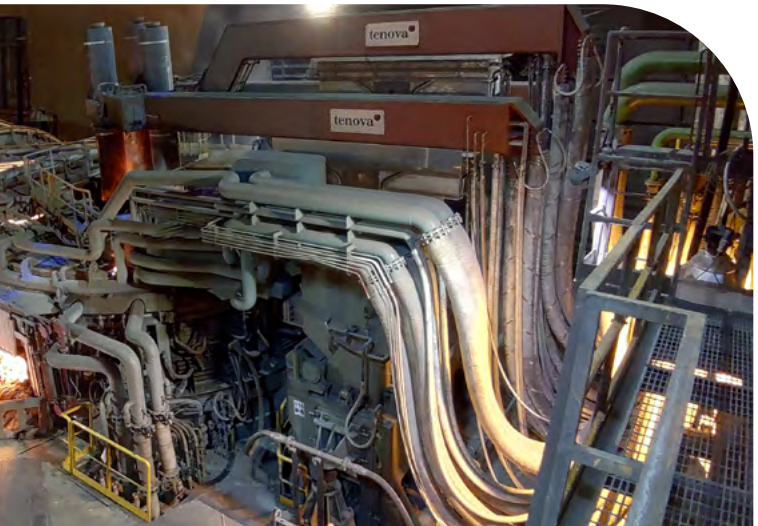
We have grown through **strategic acquisitions and organic expansion**, while staying true to our mission to **be among the best players in our market, providing sustainable solutions for the industry**. Tenova Group is headquartered in Castellanza, Italy, while Leipzig, Germany, is the primary technology hub for our mining solutions. We have locations across 18 countries, providing customized products, technologies, and services for our clients based on their operating locations and local and regional regulations.

Where We Are



Our **Technologies**

At Tenova we are committed to **designing and delivering innovative and reliable technological solutions** for the metals industries, guiding our clients throughout their green transition journey by helping them reduce their environmental impact while supporting the industry's shared objective of making **the sector safer** and **more efficient**. We invest in research and development to stay at the forefront of technology innovations, enabling us to provide clients with cutting-edge, flexible **solutions** tailored to meet both **current needs** and **future challenges**.



Iron & Steel

Tenova offers a fully integrated range of high-quality products, technologies, and services for the steelmaking route, from iron ores and scrap to secondary metallurgy. Tenova is on the leading edge, offering innovative solutions for circular processes and environmental control in the industry. For downstream steel production, Tenova offers a wide range of equipment solutions for flat, long, plate, pipe, and forging plants.

Aluminum

From twin-chamber melting furnaces to advanced processing technologies and high-quality roll grinders, the Group supplies its clients with cutting-edge solutions for a range of aluminum needs. Tenova is the leading supplier of aluminum treatment lines for the automotive industry, with several processing lines successfully in operation for the major aluminum producers. Confirming its commitment to sustainability, Tenova is a valuable partner providing top engineering solutions for aluminum smelting and recycling.

Hydrometallurgy

Tenova Advanced Technologies (TAT) is the global Tenova brand specializing in hydrometallurgical processing, with a special focus on lithium and phosphate processing and solvent extraction.

Pyrometallurgy

Tenova also designs and supplies high-capacity Alternate Current (AC) & Direct Current (DC) furnaces as well as complete smelting plants to produce ferroalloys, platinum group metals, and base metals.

Rolling & Grinding

As a full-service, experienced partner, Pomini Tenova is a world leader in the design and supply of roll grinders and roll shop equipment for steel and non-ferrous metals such as copper, aluminum, as well as for paper mills, guaranteeing the highest standards in terms of material quality, thickness tolerance, and flatness.

Port Equipment

Under the brand Tenova Material Handling, the company supplies standard and custom material handling equipment, with a particular focus on the loading and unloading at marine terminals.

The Group is also recognized as a leader in the mining **industry** through the globally recognized **TAKRAF brand**, covering **mining, bulk material handling**, and **comminution**, and **DELKOR**, which focuses on **liquid-solid separation** and **wet processing**. In particular, the main technologies include:

Mining Systems and Equipment

TAKRAF solutions range from excavating to crushing plants, conveying, spreading (dumping), and various auxiliary equipment.

Bulk Material Handling

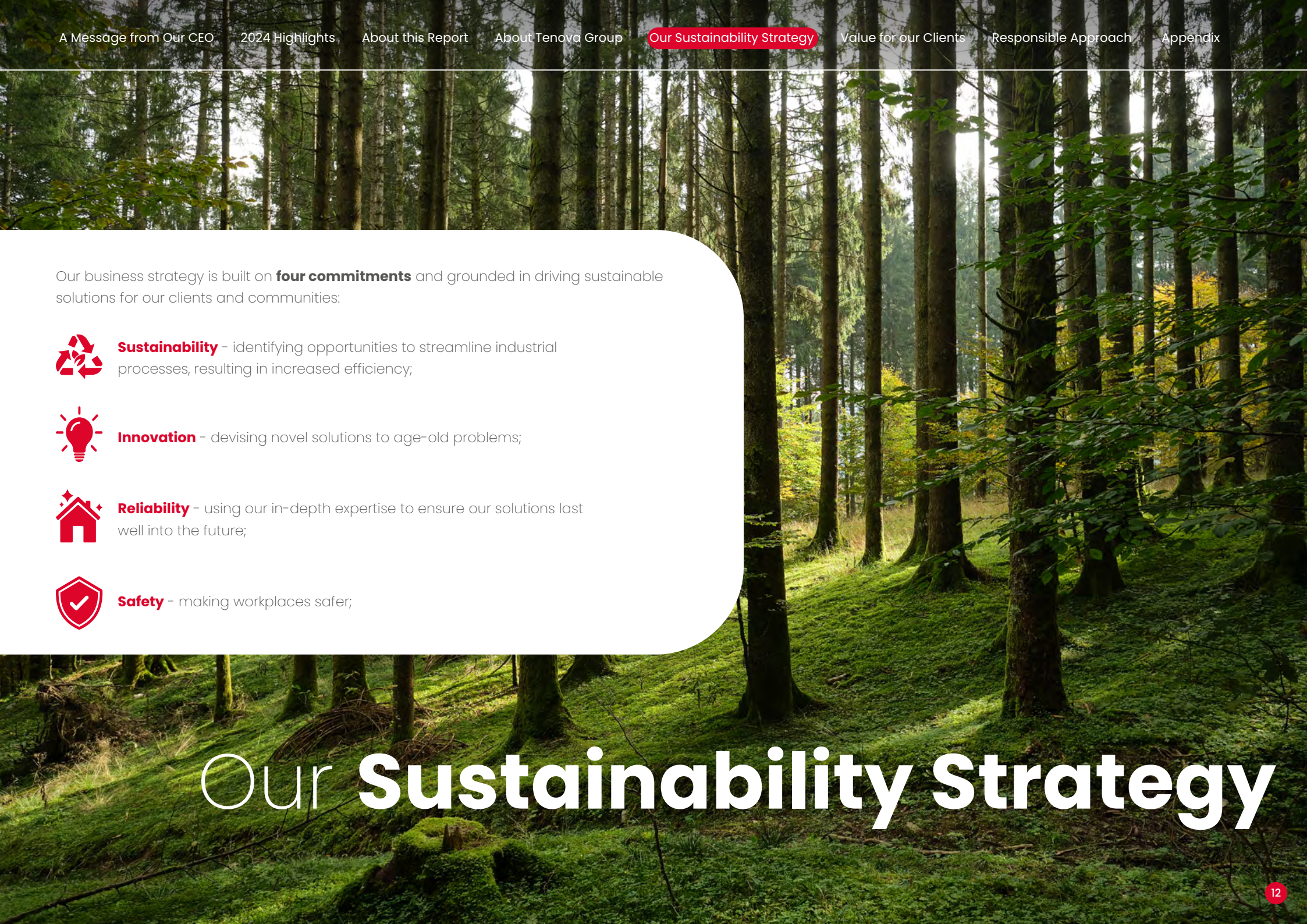
A complete provider of TAKRAF solutions that range from stockyard and disposal facilities to loading and unloading equipment, conveying, port facilities, continuous heap leach systems, and various "in-plant" handling equipment.

Minerals Processing

Covering various TAKRAF solutions on the comminution side to DELKOR liquid/solid separation, wet processing solutions, and combined TAKRAF and/or DELKOR solutions for Dry Stack Tailings (DST).

Services & Components

Covering the entire complement of TAKRAF and DELKOR solutions and including project development services, construction and commissioning, fabrication and components, and technical services and spares.



Our **Sustainability Strategy**

Our business strategy is built on **four commitments** and grounded in driving sustainable solutions for our clients and communities:

Sustainability - identifying opportunities to streamline industrial processes, resulting in increased efficiency;

Innovation - devising novel solutions to age-old problems;

Reliability - using our in-depth expertise to ensure our solutions last well into the future;

Safety - making workplaces safer;

Our **Material Topics**

Tenova Group's 2024 sustainability performance reporting is grounded in a thorough **materiality assessment**, aimed at identifying the **most relevant environmental, social, and governance (ESG) topics** for both the Group and its stakeholders. This approach enables us to ensure transparent disclosure while effectively guiding the Group's broader sustainability strategy.

Looking ahead, in the coming reporting cycles, the Group is expected to fall within the scope of the Corporate Sustainability Reporting Directive (CSRD), the EU directive requiring companies to report their relevant sustainability performances in a more detailed and comprehensive manner. This transition would mark a significant milestone for the Group, which has already been engaging in voluntary sustainability reporting since 2022.

We are closely monitoring the evolution of advanced sustainability disclosure requests and standards, with the goal of enhancing transparency and accountability in how we communicate our impacts, always with a view toward continuous improvement and alignment with stakeholder expectations.

To that end, we have chosen to incorporate targeted developments designed to gradually align with the potential upcoming reporting requirements. One such development concerns our materiality analysis: in 2024, we conducted an **impact materiality assessment** in accordance with the methodology set forth in the **GRI Standards**, and in alignment with the **European Sustainability Reporting Standards (ESRS)** which are the current European reporting standards enforced by the CRSD at the time of writing this Report.

The materiality assessment, as well as the whole reporting project, was carried out by our dedicated, interdisciplinary Sustainability Project Team, supported by the Operative Committee – which includes representatives from all Tenova Group Business Units and Functional Areas – and overseen by the Sustainability Steering Committee, which validated the results of the assessment (see Governance and ESG Management, p. 79).

The materiality assessment process was developed over several key phases:

1) Context Analysis:
In the initial phase, Tenova Group conducted an overview of its operations, business relationships, sustainability context, and key stakeholders. This step was essential in identifying the topics of interest and the main impacts of the Group.

2) Identification of an Impact Long List:
Once the **relevant topics** were defined, each was **broken down** into single **impacts**, both positive or negative, actual or potential, arising from Tenova Group's activities and operations with respect to the environment, the community, and other stakeholders identified in the previous phase. Each identified impact was, in turn, **linked to** the corresponding topics, sub-topics, and sub-sub-topics outlined in the **ESRS framework**. As a result, a long list of sustainability-related impacts was identified as relevant to the sector and potentially material for the Group.

3) Assessment of Impact Significance:
The significance of each impact was then evaluated across different dimensions, following the requirements of the Reporting standards. In the evaluation process, we took into consideration scale, scope, irremediable character, and likelihood of each impact.
The impact evaluation was assessed by engaging key internal and external stakeholder groups in a voting process. At this stage, a stakeholder engagement activity was conducted, considering the input and views of over 700 internal and external stakeholders, and has resulted in a shortlist of **relevant ESG topics** connected to impacts. Further details on this engagement process are provided in the following chapter "Stakeholders' contribution to our Materiality assessment."

4) Materiality Threshold and impact Prioritization:
Following the assessment of all impacts potentially relevant to the Group, a **materiality threshold was established** to determine which impacts are the most significant for the Group. All the impacts scoring above this threshold were included in the final list of **material impacts.** More specifically, the materiality threshold was defined by identifying as material those impacts that resulted from a combination of relevance (based on the criteria taken into consideration during the evaluation process) and likelihood, according to a risk-based approach.

As part of this year's impact **materiality assessment**, the Group **considered its entire value chain**. Although comprehensive data on value chain impacts is not yet available, an initial evaluation was carried out to identify and estimate the most relevant areas. Going forward, the Group intends to strengthen its monitoring systems to progressively integrate these aspects and enhance the overall coverage of its ESG performance.

The following list includes the ESG topics that have been identified as relevant for the Group's own operations as a result of the materiality assessment and that will be further disclosed in the present Report[1]:

- **Energy**
- **Climate change mitigation**
- **Pollution of air**
- **Resource inflows, including resource use**
- **Resource outflows related to products and services**
- **Personal safety of consumers and/or end-users**
- **Communities' economic, social and cultural rights**
- **Other work-related rights**
- **Equal treatment and opportunities for all**
- **Working conditions**
- **Corporate culture**
- **Protection of whistle-blowers**
- **Management of relationships with suppliers including payment practices**
- **Corruption and bribery**
- **Innovation and digital transformation**

This analysis represents a key building block for our forthcoming **double materiality assessment** (both inside-out and outside-in perspectives), as required by the CSRD framework.

[1] For the complete results of the impact materiality assessment, listing the most significant sustainability impacts of the Tenova Group (own operation and value chain), please refer to the table in the Appendix, within the section titled "ESG topics and impact scope."

Stakeholders' Contribution to our Materiality Assessment

At Tenova Group, **stakeholder engagement is not a formality; it is a core principle**. We recognize that our stakeholders are not only affected by our activities, but also key users of the sustainability information we disclose. For this reason, we placed their voices at the center of our materiality assessment process.

To capture a complete view of our **actual and potential impacts**, we actively engaged both **internal and external stakeholders**, including Techint Group representatives (Tenova is one of Techint Group companies). The goal was to gather insights that truly reflect the complexity of our operations and the breadth of our sustainability footprint.
We began with a series of **in-depth interviews**, involving internal stakeholders whose perspectives are critical to our strategic direction: among them, the **senior management of both Tenova and TAKRAF** were engaged, alongside representatives from core ESG-related functions, such as **Corporate Communications, Legal & Compliance, QHSE, Human Resources, Supply Chain**, and **Research & Development**. These conversations helped us understand not only the operational impacts but also the broader strategic risks and opportunities.

To deepen the analysis, we incorporated the voices of our **Business Unit Leaders**, whose direct knowledge of our technologies, processes, and customer applications enabled us to examine the impacts generated across the value chain more closely, in line with the reporting standards' requirements.

At the same time, we conducted a **targeted survey** with four key stakeholder groups, chosen for their ongoing relationship with the Group, and their exposure to ESG themes:

- **Employees**
- **Suppliers and Business Partners**
- **Customers and Techint Group Representatives**
- **Banks and Financial Institutions**

This engagement strategy provided us with a comprehensive view of our sustainability impact, aligned with our ambition to be accountable and continuously improve our understanding of the Group's impacts.

Our **Sustainability Framework**

To drive purposeful action on its impacts and clearly demonstrate its sustainability ambition, in 2023 Tenova, developed a tailored **Sustainability Framework**, initiating a **participatory co-creation process** by engaging leaders and key internal stakeholders alike to jointly define this framework and articulate a shared sustainability vision for the company.

The resulting framework is structured around **three strategic pillars**:

- **We Transform Business**: Helping our clients and suppliers transform to operate within planetary boundaries.
- **We Build Trust**: Empowering our employees and reinforcing mutual trust with all our stakeholders.
- **We Act Transparently**: Being transparent within our organization and operating responsibly.

Transformation, Trust, and Transparency are the foundational concepts that guide these pillars. It is no coincidence that each begins with the letter "T", a clear signal of our intention to embed sustainability at the very heart of **Tenova Group's identity**. Presenting them through "we" statements makes our commitments more concrete, while adding a distinctively personal and collective Tenova touch.

The material topics identified through the **2024 impact materiality assessment** at the Group level are naturally aligned with the three pillars, ensuring that the related significant impacts are addressed through a consistent and strategic approach.

Furthermore, each pillar has been mapped in relation to the **United Nations Sustainable Development Goals (SDGs)**, placing Tenova Group's strategy within a broader global framework for sustainable development.

Our ambition

We **lead the way** towards the sustainable **transformation** of our industry.

We **enable** our people, clients, suppliers, and stakeholders to grow and innovate **while caring** for the well-being of our planet.

We **contribute to a resilient and fair world** by operating responsibly.

Our pillars

Our focus areas

WE TRANSFORM BUSINESS

Helping our clients and suppliers transform to operate within planetary boundaries.

E S

- Developing sustainable solutions & technologies
- Investing in sustainable innovation, R&D, and Digital Transformation
- Developing safe-by-design technologies

Impact from business

WE BUILD TRUST

Empowering our employees and reinforcing mutual trust with all our stakeholders.

E S

- Providing a safe working environment
- Caring for our employees & providing equal opportunities
- Managing talent, empowering and training employees
- Accounting responsibly for our direct environmental impact
- Strengthening our collaboration with communities and stakeholders at large

WE ACT TRANSPARENTLY

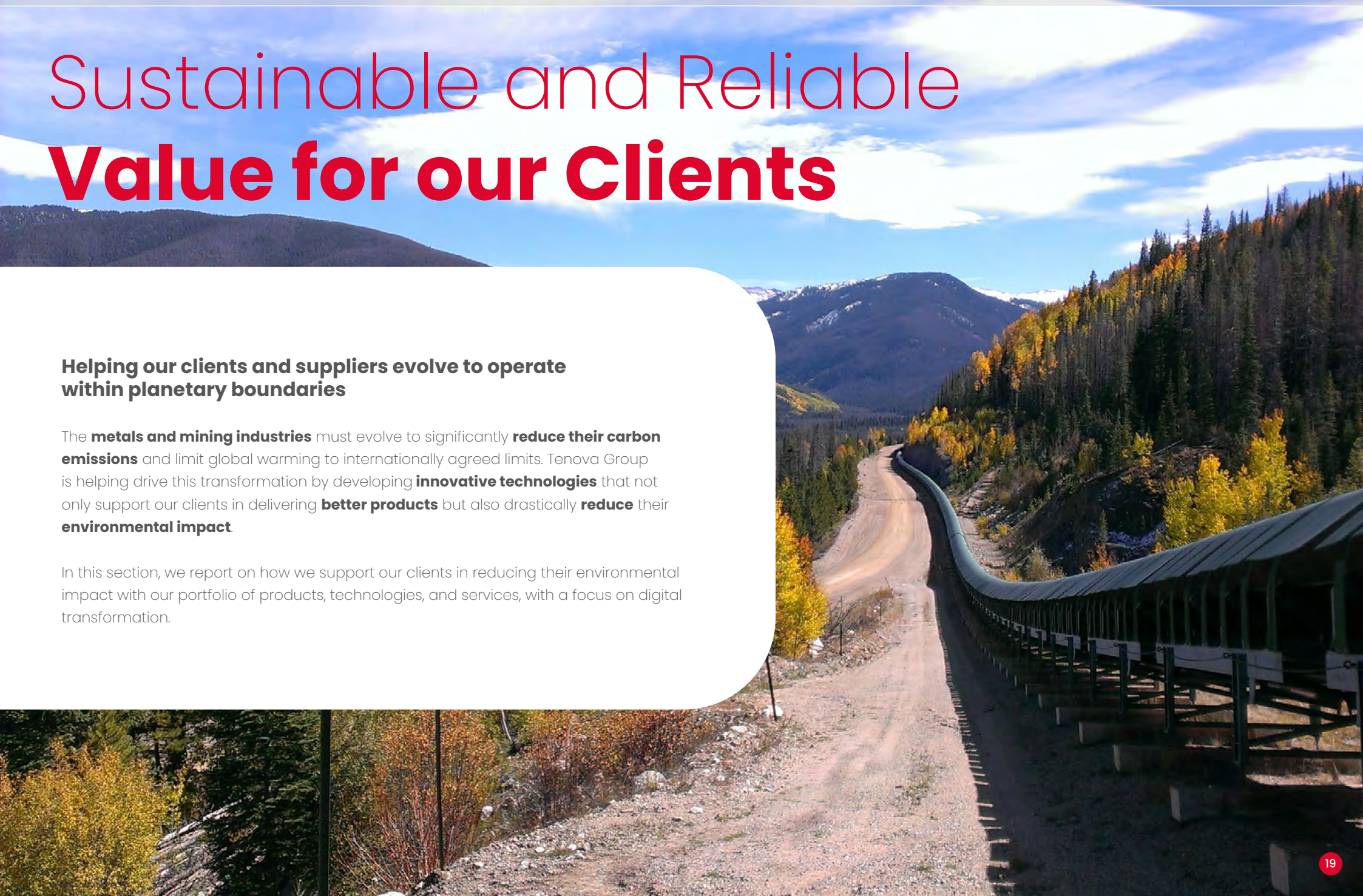
Being transparent within our organization and operating responsibly.

G

- Ethically operating our business
- Communicating our impact openly and responsibly
- Engaging suppliers for a sustainable and resilient supply chain, and providing supply chain transparency
- Embracing sustainable finance principles

Impact from our own operations

Sustainable and Reliable
Value for our Clients



Helping our clients and suppliers evolve to operate within planetary boundaries

The **metals and mining industries** must evolve to significantly **reduce their carbon emissions** and limit global warming to internationally agreed limits. Tenova Group is helping drive this transformation by developing **innovative technologies** that not only support our clients in delivering **better products** but also drastically **reduce** their **environmental impact**.

In this section, we report on how we support our clients in reducing their environmental impact with our portfolio of products, technologies, and services, with a focus on digital transformation.

Driving Sustainable Solutions

Our portfolio of solutions is primarily dedicated to the sustainable transformation of the metals and mining industries. We create value for our clients by providing innovative technologies that ensure efficiency, resulting in improved performance, reduced waste, and lower carbon emissions. These technologies support the transition to cleaner fuels, enhance energy efficiency, and facilitate the recovery and reuse of previously wasted materials.

In developing these solutions, we not only serve our clients but also work hard to accelerate our sector's transition to a lower environmental impact.

Energy Transition

The iron and steel industry is one of the largest emitters of CO_2, responsible for around 7% of global direct energy-related CO_2 emissions. To address this, the steelmaking sector is undergoing a radical transformation to accelerate pathways to decarbonization, rethinking the energy sources that drive its industrial processes, **moving from carbon-based iron reduction processes to natural gas-based and hydrogen-based** ones. This shift is part of a broader energy transition in the metals and mining industries, driven by three key trends in which Tenova Group plays a pivotal role through its advanced solutions: decarbonization & hydrogen, electrification, and digitalization.

All these trends not only demand increased metal production, but also require that production itself evolves in alignment with them. To meet these challenges, Tenova positions itself as a leading figure in fostering a **shift in the metals industry energy paradigm** by promoting **hydrogen-ready technologies** to its clients for the transformation process of their business. This is further achieved through partnerships and collaborations with gas supply operators, electrolyzer manufacturers, and other third parties that support a green energy transition.

In this context, the following section presents key products, research cases, and partnerships that are driving the Group's shift in the energy paradigm.

Electrical Steel

As the world[2] invests in electric vehicles (EVs), improving and expanding the electrical grid infrastructure, the appetite for electrical steel grades is growing substantially. **Electrical steels** are specialty steel grades **containing silicon** as its primary alloying element. They are prized for their ability to conduct magnetic fields, and as such are used for the expansion of electricity infrastructure, for rotating machines such as wind turbines and electrical motors. Tenova's portfolio includes silicon steel processing lines that enable our customers to more efficiently produce metals that will be critical in facilitating the energy transition, including electrical steel (silicon steel), which is estimated to make up roughly 1-2% of total crude steel production globally. Tenova has developed numerous **technological advancements to improve the performance of electrical steel**, including innovations in the annealing, pickling, decarburization, flattening, and coating operations required in strip processing lines.

Improvements in silicon steel

As demand for magnetic steel (a special steel alloyed with carbon and other elements that exhibit magnetic properties and is used in electric machines) and silicon steel continues to grow, the need for more efficient production methods is increasing. Thus, Tenova's R&D team has been working intensively to develop technologies that improve the silicon steelmaking process. In addition to our **suite of technologies for silicon steel**, we are improving the **magnetic properties of silicon steel**, hot and cold rolling, and new descaling processes, like laser and other mechanical descaling. Our research intends to find the optimal process to improve surface finishing and enhance magnetic properties.

[2] International Energy Agency (IEA), Iron and Steel Technology Roadmap: Towards more sustainable steelmaking (2020).

DRI and ENERGIRON

The global steel industry community agrees that the partial or total use of hydrogen for **DRI (Direct Reduced Iron)** production is the most effective route for the decarbonization of the industry. More and more steelmakers are adopting this solution for the installation of **new green steel plants** or for the **decarbonization of integrated steel mills** (i.e., steelmaking from ores as raw materials).

Our **ENERGIRON** technology, jointly developed with Danieli, is at the forefront of sustainable steel production. By utilizing innovative DRI processes, ENERGIRON can reduce carbon emissions by up to 80% compared to traditional steelmaking methods.

This technology has been designed to use **different types of reducing gas sources including pure hydrogen** to reduce iron ores into metallic virgin iron to produce a wide range of **high-quality steels**. ENERGIRON plants efficiently reduce any iron unit into "energized" hot or cold DRI or hot briquetted iron with controlled metallization and carbon levels. ENERGIRON offers unparalleled flexibility: even with the same process scheme configuration, the client can select the best energy source - natural gas, reformed gas, syngas from a coal gasifier, coke oven gas or even hydrogen - without any process modification and can control the amount of embodied carbon during operations.

ENERGIRON plants meet the **most stringent environmental regulations**. Thanks to its unique features, it has the lowest carbon footprint of any ironmaking technology, with the further advantage that the selectively removed CO_2 can be sold. Additionally, the water byproduct of the reduction reaction, easily condensed and removed from the gas stream, can be used as cooling water in a zero-water consumption circuit.

DRI plants are typically coupled with **Electric Arc Furnaces (EAF)** for the melting of the DRI and its transformation into sellable iron or steel. The use of electrical energy substitutes chemical energy, which creates CO_2 emissions. We are proud that **the world's most productive DRI-fed EAF was produced by Tenova at Tosyali Bethioua plant**.

ENERGIRON technologies have concretely contributed to global steelmaking innovation over the course of 2024. Indeed, during the year, **Tenova successfully embarked on building a second DRI-fed EAF** for Baosteel Zhanjiang Iron & Steel Co., Ltd, working with Sinosteel Engineering & Technology Co. Ltd to successfully complete the performance test for the new **hydrogen-based 1,000,000 tons/year ENERGIRON Direct Reduction (DR) plant**.

With a full capacity of 1 million tons per year and installed at Baosteel – a Baowu Group company – it will be **China's largest hydrogen-based DRI facility**. The plant, which uses natural gas enriched with hydrogen, leveraging coke oven gas as the process gas, is **an industry first**. **It is also equipped to capture CO_2** for commercial use, further cutting emissions and creating an additional revenue stream. The **strength of our design** lies in the fact that the transition to better gases is possible while keeping the plant open, without requiring fundamental changes to its functional structure.

In **February 2024,** our ENERGIRON technology was also selected by **LKAB**, an international mining and minerals group, for the basic engineering of its 100% hydrogen-based Direct Reduced Iron (DRI) plant **in Gällivare**, **Sweden**.

The Gällivare demonstration plant, with a capacity of 1.35 million Mtpy (metric tons per year) of **fossil-free DRI**, will combine LKAB's **HYBRIT** and Tenova's **ENERGIRON technologies**, drawing on shared expertise in DRI production. Results from the HYBRIT pilot plant show that DRI made with **pure hydrogen** as a reducing agent **outperforms fossil-based alternatives** like natural gas.

Similarly, in **August 2024**, our US client **Nucor Steel Louisiana** reached **world record production** with 330.3 tons/hour of cold direct reduced iron (CDRI), **thanks to its pioneering ENERGIRON technology**.

SAF and Open Slag Bath Furnace

Open Slag Bath Furnace (OSBF) is the perfect solution for melting high-carbon DRI to produce hot metal.

Tenova joins RINA's 100% hydrogen-fueled Hydra project

We partnered with RINA on the Hydra project, funded by NextGenerationEU and supported by the Italian Ministry of Enterprises and Made in Italy. The project aims to enable European steelmakers to test 100% hydrogen fuel for greener steel production. Tenova will provide a **30 meter high DRI tower**, using **ENERGIRON** technology, and an **Electric Arc Furnace (EAF)**. By 2025, the pilot plant will produce up to seven tons of steel per hour with reduced carbon emissions. The project will help test various hydrogen-natural gas blends and iron ores, providing valuable insights for future investments. The EAF can also process residual materials from steelmaking and other sectors, such as plastics, biochar, and construction by-products, supporting more sustainable resource use.

The electric furnace, a **Submerged Arc Furnace (SAF)** in this case, works using Søderberg electrodes operating "submerged" in the slag or with a very short electrical arc or "brush arc". The OSBF can tap hot metal into torpedo cars. The resulting slag produced is similar to blast furnace slag and can be sold to the cement industry. The work done on OSBF slag treatment has identified a potential alternative processing route for the treatment of EAF slag, which is discussed in more detail in the Circular Economy section (p. 31)

Mineral Wool Applications

Historically, the **mineral wool flow sheet** has included Cupola furnace technology, a process with high carbon emissions. Tenova has identified the **use of Tenova's bespoke hybrid SAF design** (using graphite electrodes) to replace Cupola furnaces. This technological innovation has the potential to **reduce mineral wool carbon emissions** by up to 90% depending on the electrical energy carbon footprint. Tenova offers this technology to existing mineral wool producers (as a retrofit) or producers planning to expand their mineral wool production capacity.

iBLUE®

Conventional blast furnace-basic oxygen furnaces or oxygen converters **(BF-BOF)** dominate global steel production, producing **two tons of CO_2 for each ton of steel** produced (as a comparison, the EAF route from scrap produces 80% fewer emissions). Modifying their technology is the best route to CO_2 reduction for the steelmaking industry. As of 2023, 57% of global steel was produced via the BF-BOF route, while only 43% was produced via the electric (EAF) process. Tenova's technology to **substitute any Blast Furnace** is iBLUE®, which enables the **production of Liquid Pig Iron via the BF-BOF route** while massively reducing emissions. iBLUE® combines the production of high-carbon DRI with an electric arc melter to produce hot metal and granulated slag. It can also utilize BF grade pellets as raw material, making it the perfect substitute for blast furnace technology. The use of green hydrogen in the reduction process can further **minimize greenhouse gas emissions**. This represents a less costly option to produce hot metal with a minimal carbon footprint and results in minimal disruption to the operations of an integrated steel plant that plans to shift towards green steel production.

In 2023, Tenova started a pilot project on an industrial-sized submerged arc furnace for the production of hot metal, and achieved positive results. iBLUE® is increasingly confirmed as the sustainable alternative to blast furnaces to convert integrated steel mills with existing BOFs into "green metal plants". In addition to its environmental advantages, iBLUE® allows steelmakers to maintain existing steel grades production procedures and quality control: from this perspective, implementing iBLUE® does not require the qualification of the production process, and is highly recommended for high-quality steel grades, exposed automotive parts, etc.

A number of projects and studies with steelmakers in different parts of the world kicked off in 2023, and will result in the construction of new iBLUE® plants. The relevance of the technology was further confirmed in 2024 with a successful test conducted in a Swedish laboratory in February.

Tulum Energy S.A.

On October 31, 2024, Tulum Energy S.A. was established and incorporated in Luxembourg, with equal ownership by Tenova S.A. and Tech Energy Ventures. Tulum Energy is developing an **innovative technology**, initially conceived at Tenova, for the **production of low-carbon hydrogen from methane pyrolysis ("Turquoise hydrogen")**. Tulum subsequently raised venture capital from a **consortium of institutional, strategic, and financial investors**, as part of a capital increase successfully completed in July 2025.
Tulum's technology aims to produce low-carbon hydrogen (90% CO2 reduction compared to traditional technologies) on an industrial scale and at **competitive costs**. In particular, Tulum's technology can play a significant role in decarbonizing the steel industry. Tulum is currently developing its first demonstration plant in Mexico, at Ternium's site.

Combustion Systems for Furnaces

Traditional hot rolling and heat treatment processes utilize fossil fuels, resulting in a high carbon footprint for final products like long or flat steel products. Tenova is committed to developing and deploying **highly efficient low-emissions combustion systems** for reheating and heat treatment furnaces. Since 2008, we have specialized in the development of **regenerative and self-regenerative burners** that provide at least a **10% reduction in CO_2 emissions** using fossil feedstock. Furthermore, Tenova's regenerative burners are also **hydrogen-ready**: whenever green hydrogen becomes readily available, our clients can immediately use variable amounts of hydrogen blended with more standard fuels and drastically reduce their carbon emissions without any additional investment.

In 2021, we reached a key milestone in this endeavor by developing the first burners for heat treatment furnaces using up to **100% hydrogen**, while keeping NOx below the strictest emission limits. Tenova's regenerative flameless burners combine the lowest NOx emission level with high temperature combustion air preheating, thus combining a drastic reduction of CO_2 emissions with high combustion efficiency. That means our products provide clients with improved plant sustainability even before cleaner fuels such as green hydrogen become readily available.

We believe hydrogen will play a key role in the future of combustion systems. However, many countries and markets are not yet structurally prepared to adopt this technology. Therefore, over the coming years, we are committed to providing our clients with reliable and sustainable solutions that serve as incremental steps toward the energy transition.

While we and our clients look forward to the necessary developments in the hydrogen distribution infrastructure, **in 2024, we developed a basic concept study for hybrid burners**, which will support steelmakers in pursuing their emission-reduction targets by directly utilizing renewable electricity to cut standard fossil fuel consumption. During the year, we filed relevant patents so that this medium-term solution will **allow our clients to use the clean electricity already available to reduce their emissions potentially up to 25%**[3] while keeping the hydrogen-ready feature.

We have also integrated digital solutions into our line of **SmartBurners** to provide up-to-the-minute data on the operating efficiency and processes of our burners, easing inspections and maintenance. Our **Industrial Internet of Things (IIoT)** framework offers a complete set of process diagnostics KPIs to control key parameters like combustion ratio, and KPIs to monitor critical components such as switching valves.

Our multi-megawatt TSX SmartBurner family for reheating furnaces can be fed with variable mixtures of natural gas and hydrogen – potentially up to 100% hydrogen. Our 200-kilowatt TRKSX (Tenova Self-ReKuperative Flameless) SmartBurner also uses variable mixtures of natural gas and hydrogen and works both in flame and flameless modes, keeping **NOx emissions well below the strictest limits**.

[3] This emission reduction percentage is an estimate based on a case-study burner, representative of our designs.

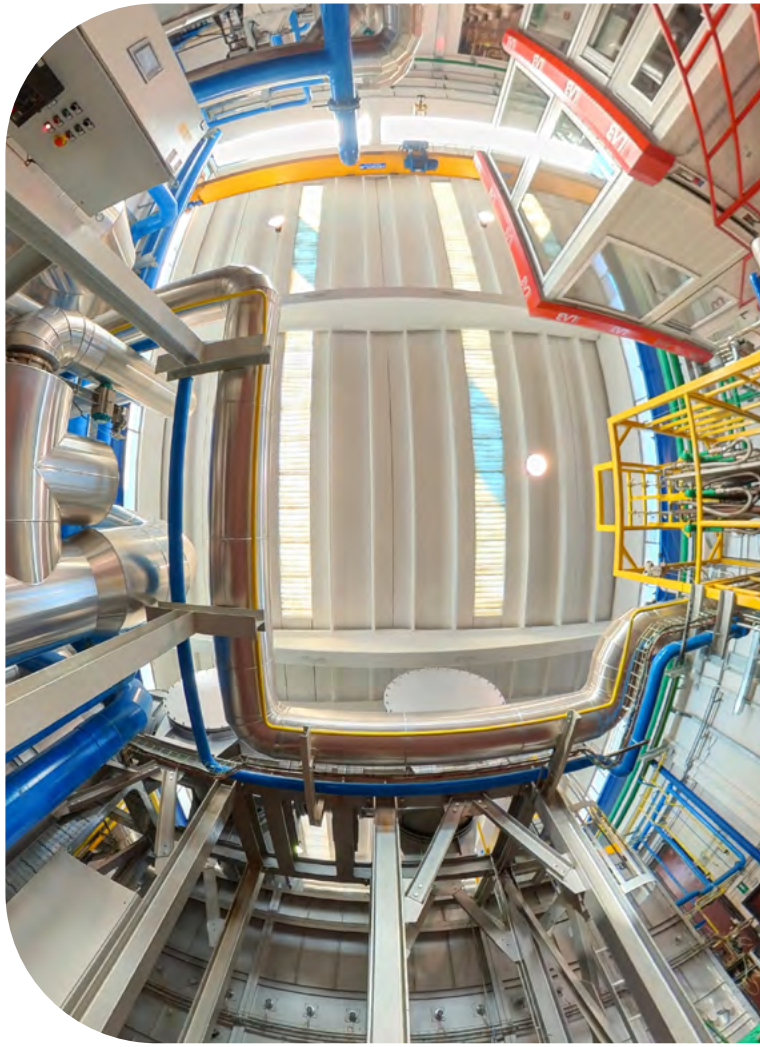
In a collaborative project with **thyssenkrupp Hohenlimburg GmbH**, Tenova LOI Thermprocess proceeded with advanced heating hoods, featuring our patented Ultra-low NOx HPH®-flameless concept and increasing air preheating temperatures to 600°C. It achieved up to 12% energy and CO_2 savings. In production trials, the project aimed to decarbonize steel production by gradually shifting the fuel gas supply for the heat treatment of hot-rolled narrow strips from natural gas to 100% hydrogen. Despite the higher combustion temperature, the flameless concept resulted in low NOx emissions.

To assess the impact of increased hydrogen use on the overall system, we employed a mobile natural gas/hydrogen mixing station. This allowed us to test different gas mixtures during annealing cycles. To this end, Tenova developed the THSQ Burner family that can work with any hydrogen/natural gas mixture while maintaining consistent thermal performance and NOx emissions. The tests consistently confirmed that Tenova LOI Thermprocess's ultra-low NOx HPH®-flameless bell-type annealing plant is well-suited for hydrogen use.

TenovaLAB

We continuously invest in new research and development activities to create cutting-edge technologies that provide low-carbon solutions to our clients in the metals and mining industries. For this reason, between 2023 and 2024, Tenova invested in its own R&D facilities by installing an **experimental laboratory at our headquarters in Castellanza**. Our TenovaLAB (T-LAB) carries out experimental industrial activities for the development and testing of all burner technologies. Equipped with **four test furnaces** of varying thermal power, T-LAB allows our R&D team to close the loop between our in-house modeling and simulation capabilities and the engineering of industrial products. On-site product testing, such as thermal and emissions measurement, enables us to fine-tune product specifications, minimizing technology risks for our clients. Furthermore, T-LAB allows our customers to see our products in action in real operating conditions.

During 2024, after we expanded our facilities at T-LAB with preparatory works, we completed the installation of a 1.5 MW **water electrolysis unit** directly connected to the solar panels' roofing of our Pomini Workshop. This expansion is partially financed through a Horizon EU grant to demonstrate the green hydrogen production/utilization chain at full industrial scale, from the generation of hydrogen to blending with natural gas in the combustion systems of the different test furnaces at T-LAB.



Case Study: Partnering with Clients for a Low-Carbon Future

As our economies move towards net-zero emissions, metals companies have a major role to play in emissions reduction. Tenova is constantly innovating to develop low-carbon solutions for the metals industry. In 2024, Tenova embarked on a number of projects including:

We partnered with **Snam**, Europe's largest energy infrastructure operator, to conduct joint strategic studies and market analyses to implement green hydrogen projects in the metals industry. We aim to bring integrated, turnkey commercial solutions tested in industrial plants to implement a substantial reduction of CO_2 and NOx emissions in metals production processes, from melting to thermal processing of long and flat products.

Under a joint agreement between Tenaris, Snam S.p.A. and Tenova, the pipe mill of TenarisDalmine carried out industrial tests of hydrogen generation and use, with the aim of evaluating the performance and reliability of generating and using hydrogen as a fuel in steel heating processes. The goal has been achieved during long term industrial tests in which the hydrogen produced on site by an electrolizer was used to feed a Tenova HydrogenReady burner installed in a furnace for seamless pipes, confirming the industrial feasibility of Tenova HydrogenReady solutions.

We signed a Cooperation Agreement with **Power Conversion** (a **GE Vernova** business) to develop innovative medium voltage power feeding solutions for EAFs and SAFs. The partnership combines our metallurgical expertise with Power Conversion's Direct Feed technology to improve energy efficiency, process stability, and grid compatibility, supporting the decarbonization of high-power electric furnaces.

We signed another Cooperation Agreement with **Inductotherm**, for the joint proposal and commercialization of the 'Hybrid Furnace' solution. The hybrid furnace combines Inductotherm's induction heating systems with Tenova's high-efficiency, low-carbon combustion technologies, including our HydrogenReady burners. The goal is to support decarbonization in rolling mills by integrating high thermal efficiency, direct electrification through induction, and the potential use of green hydrogen. By bringing together both companies' technological expertise and track records in induction and combustion systems, we offer a state-of-the-art solution to rolling mills worldwide.

Energy Efficiency

In cases where it is not yet feasible to transition to cleaner fuels, we have developed a suite of technologies to help our clients use their existing fuels more efficiently or adapt their existing processes to reduce their emissions.

Metals Advancements

Consteel® & EMS

In use for over 30 years and on 80 sites across all continents, our Consteel® Electric Arc Furnace (EAF) has proven its value to clients around the world. Consteel® is a process which preheats and continuously charges raw feed materials, in particular **scrap**, into an EAF, melting them by immersion in the liquid steel present in the furnace. The EAF operates in constant flat bath conditions, a key advantage over conventional batch processes, where scrap is melted by the direct action of the electric arc. The EAF off-gases are used to preheat the incoming scrap and feed materials. Their composition is controlled and sent to a fume-cleaning plant in conditions suitable for the complete combustion of carbon monoxide and other pollutants without any fuel consumption. This process produces liquid steel with high productivity, a short and adjustable heat cycle, and a lower power cost compared to other EAF installations using conventional or other alternative steelmaking technologies. To further improve its Consteel® Electric Arc Furnace (EAF), Tenova introduced additional features, like the **Electro Magnetic Stirring technology**, such as **Consteerrer®**, which improves energy consumption and refractory lining life.

iRecovery® Captures and Reuses Thermal Heat

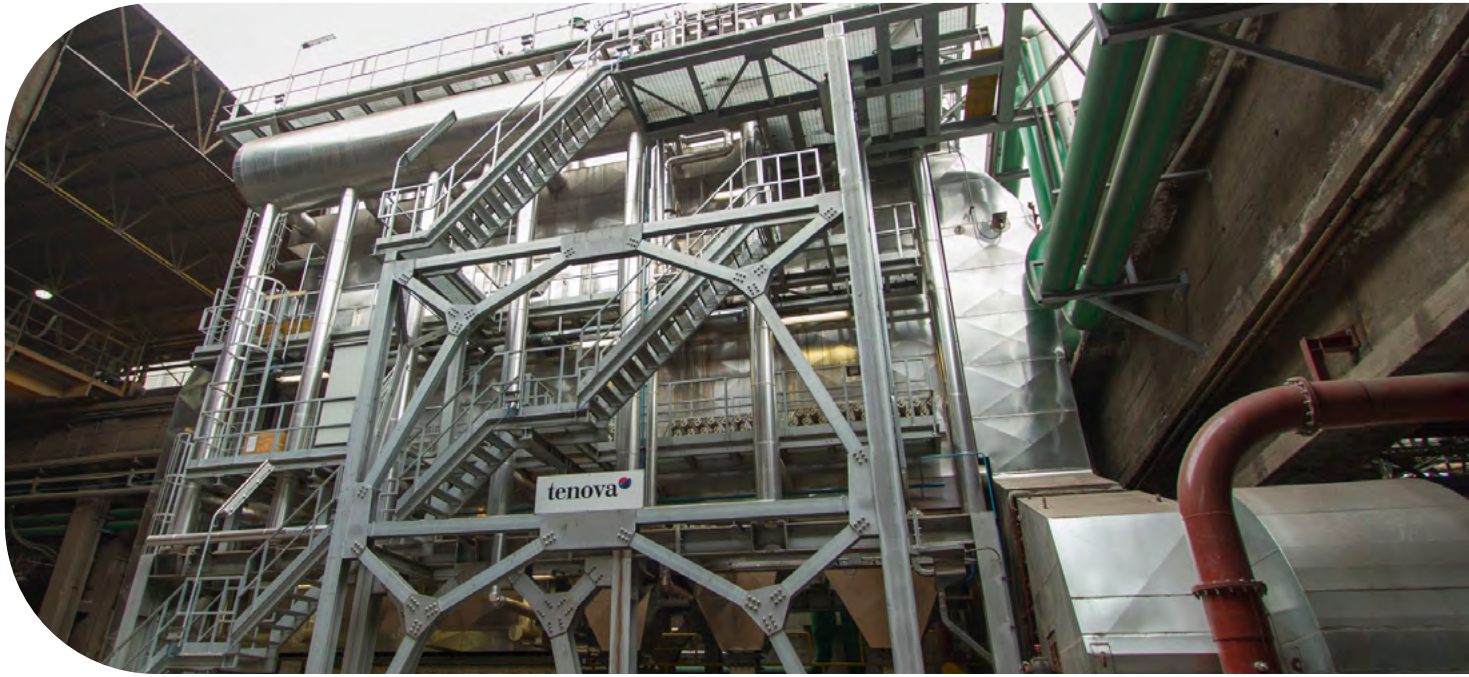
Today, process optimization and energy efficiency to reduce emissions are more important than ever for steel producers. Tenova began working on this over a decade ago, well before other companies were thinking about sustainability in the industry. In the past ten years, we developed the iRecovery® system for recovering thermal power from EAF waste flue gas and using it as an energy source. This energy comprises the biggest fraction of the primary energy input in the EAF process, yet it typically goes to waste. iRecovery® captures the thermal energy created by the off-gas and uses it to produce steam to power steelmaking and other activities. In Brescia, for example, our client ORI Martin uses the heat captured with iRecovery® to heat 2,000 homes in winter and power 700 homes in summer, reducing 10,000 tons of CO_2 every year.

In 2023, Tenova developed the iRecovery solution for application at high pressure, up to 60bar(g). This solution increases the applicability of iRecovery in the transformation process of steelmaking from BF-BOF to DRI-EAF through integration into the existing steam network. We coupled Consteel and iRecovery® in order to improve the effectiveness of our technologies: while the high temperature thermal power contained in the waste gases (up to 800°C) is first used in scrap preheating by Consteel, the Waste Heat Boiler (WHB) **uses the recovered residual waste gas energy**. This combination can produce about 90-140 kg/tls of steam.

In 2024 Tenova signed a contract with Voeastalpine Donawitz for the supply of two iRecovery plants for their new electric arc furnaces to be supplied by Danieli. Each of the systems is sized to produce around 50 tph of steam from each of the 75t EAF.

Multiple Pre-heater for Ferroalloys production

In 2023 Tenova, together with one of the world's largest ferrochrome producers, successfully reached full performance of Tenova's patented multiple pre-heating system. The system utilized the chemical energy contained in the furnace off-gas as a fuel to pre-heat the chromite feed materials. This technology reduces the electrical energy requirement (directly decreasing the operating cost per ton product) and it has the added advantage of improving furnace stability.



Mining advancements

In-Pit Crushing & Conveying (IPCC)

IPCC systems represent an innovative and more sustainable approach to materials handling in surface mining. Instead of relying on diesel-powered haul trucks to transport run-of-mine material from the pit to the processing facility, the IPCC system crushes the material directly at or near the mine face and transports it via **energy-efficient conveyors**. This system **increases safety while also significantly reducing emissions** and **lowering operational costs**, furthering the mining industry's **global green transition** and decarbonization goals.

High-Pressure Grinding Rolls (HPGRs)

This technology is increasingly recognized as a key technology for **improving energy efficiency in ore processing** – comminution is the most energy-intensive of mining processes. HPGRs use high pressure to compress and fracture ore particles between two rotating rolls, which significantly reduces the energy required, especially when processing hard materials. This energy-efficient technology allows for a reduction in process energy intensity and, at the same time, enhances downstream flotation efficiency by improving particle size distribution and mineral liberation.

DELKOR BQR Flotation Cells

Efficient and reliable flotation is essential for maximizing mineral recoveries, and DELKOR's BQR Flotation Cells are designed with this goal in mind. DELKOR's BQR Flotation Cells, boasting DELKOR's proprietary MAXGen mechanism, improve the recovery rate of valuable minerals while using less energy, thereby increasing overall processing efficiency.

Circular Economy

Industrial processes inevitably generate a variety of waste byproducts. At Tenova Group, we are committed to supporting the circular economy by developing technologies that enable the recovery, reuse, and valorization of these materials, reducing their environmental impact. In the metals business, our solutions focus on the efficient treatment and transformation of steelmaking byproducts, such as slag, into valuable secondary materials. In the mining business, our comprehensive portfolio of dewatering equipment is designed to reduce freshwater usage and manage tailings and waste more effectively. Together, these efforts help our clients operate more sustainably across the entire metals and mining value chain.

Metals advancements

Auto Catalyst and Battery Recycling

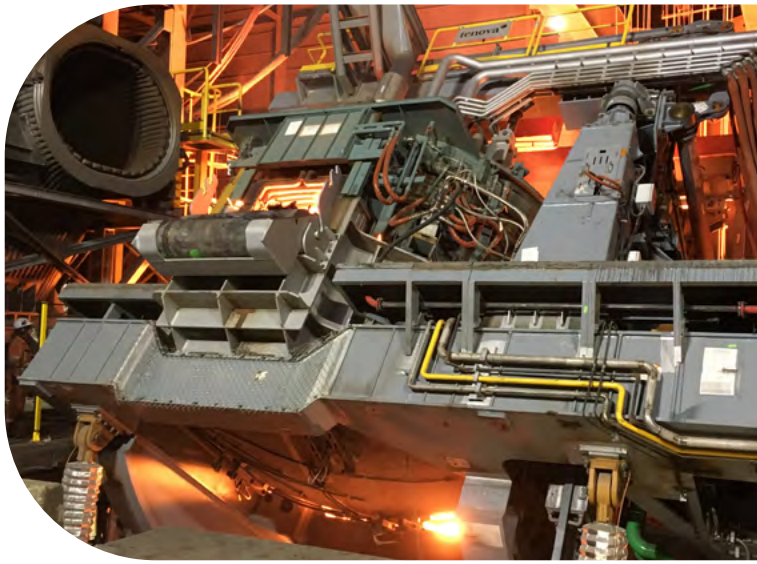
Melting furnace technology is used to recycle the PGM's (Precious Group Metals) contained in spent auto catalysts. As the first generation of electric cars reaches the end of its cycle, there is a **real opportunity to recover valuable materials contained in various electric car systems** (primarily the battery and auto catalyst). Tenova offers both **hydro and pyrometallurgy process paths to recover these materials**.

EAF-LF (Electric Arc Furnaces - Ladle Furnace)

The primary production of steel from virgin iron ore is highly energy intensive. This can be mitigated without loss in quality by using ferrous scrap mixed with DRI/HBI and other virgin iron units (pig iron / hot metal) when necessary. Quality and availability of steel scrap are therefore important factors, especially considering the decreasing quality of world steel scrap. To this end, we are conducting research and implementing **new Industry 5.0 technologies** to manage low-quality scrap in furnaces, improve EAF flexibility, and achieve cost savings while enhancing environmental performance. EAF steel production is already an integral part of the circular economy.

Tenova is implementing innovative approaches to increase the recycling process, replacing the use of injected coal in the EAF with alternative materials that are byproducts from other industrial processes, like polymers from waste plastic and by treating EAF process residues, such as slag and fume dust to recover both metal and mineral fraction for internal use or application in other industries.

In October 2024, we secured a contract with **Tata Steel UK** to supply a **high-productivity Electric Arc Furnace (EAF)** and associated equipment for their **Port Talbot plant**. By **replacing** the current **blast furnaces**, the new state-of-the-art production line will significantly **reduce carbon emissions** while ensuring the continued production of **high-quality flat steel**. This project is a key element of the joint agreement between Tata Steel and the **UK government**, aimed at the decarbonization of steelmaking in the UK, with an **estimated reduction of 50 million tons of direct carbon emissions** over the next decade.[4]



[4] For further information about this project, please visit: tenova.com

Tenova Goodfellow Inc.'s NextGen® for Dongkuk Steel Mill in Korea

In 2024, Dongkuk Steel Mill Co. Ltd. contracted Tenova Goodfellow Inc. to supply and install its **NextGen® System** at their Incheon Plant in **South Korea**. Designed for a 120-ton AC shaft furnace, the system includes advanced sensors for off-gas measurement, featuring two sampling stations and a central cabinet. With hybrid laser/extractive off-gas analysis, the system offers **fast response times and monitors CO, H_2O, CO_2, O_2, and H_2,** enabling real-time control and improving efficiency. Its low maintenance needs also lead to cost savings in hardware and installation. Unlike other laser technologies, **Tenova's patented NextGen® system offers full-spectrum analysis**, enabling complete control without compromising dynamic burner, lance, and fume system suction management. It also provides enhanced water detection and real-time mass and energy balance, essential for controlling both chemical and electrical energy inputs to the **EAF**. In contrast to in-situ systems, which offer only intermittent off-gas analysis, **NextGen® delivers continuous, simultaneous analysis from all sample locations**. The system uses a high-velocity pump to extract, filter, and clean off-gas before it enters the sample station laser cells, ensuring uninterrupted laser beam transmission. Key components include the gas probe, heated sample line, sample station cabinet, control cabinet, and analyzer server. A key characteristic of the system installed at the Dongkuk Steel mill is the "zero maintenance" design, which was created to significantly simplify the management and handling of this equipment.

Dry Slag Granulation

The **capture and reuse of currently wasted materials**, such as ladle furnace slag, is a critical step in the decarbonization of the steel industry. In 2016, the European steel industry generated about 43 million metric tons of slag, of which about 7% — or 3 million metric tons — is not being reused, posing not only a serious environmental problem in Europe, but representing a **huge amount of available material for potential recycling**. Today, slag handling is a costly and time-consuming operation that poses significant safety and operational risks, requires water, and is a potential source of fugitive dust and fumes.

Tenova has developed a Ladle Furnace (LF) **slag granulation solution**, which uses forced air flow to rapidly cool and solidify slag. The fast cooling transforms the slag from liquid to solid, enabling the reuse of slag as raw material in the construction industry. Our solution decreases workers' exposure to harmful chemicals in slag, reducing water use, and the need for virgin lime. Furthermore, we extended our dry granulation technology to EAF slag generated during high alloy steel production via the DRI/EAF process.

In 2023, Tenova was awarded the first contract for the installation of an LF dry slag granulation solution system in Italy, which will process more than 20,000 tons/year of slag. The first of its kind, the plant will be equipped with the latest artificial intelligence algorithms to assist production optimizing the granulation process. The granulated product will then be utilized for the preparation of chemicals for the construction industry.

Lithium Recovery

Lithium is widely used in metallurgical processes for **metal melting**, to **eliminate the formation of oxides**, **and absorb impurities**. Its growing use in clean energy technologies, like solar arrays and electric vehicle batteries, make it a **critical metal for a net-zero future**. Building on this potential, Tenova's engineers have studied a number of processes to produce lithium more efficiently. **Tenova Advanced Technologies (TAT)** adapted its Solvent Extraction (SX) technology for producing **lithium from primary sources** to produce **lithium recycled from batteries**. For this project, Tenova Advanced Technologies secured funding from the Israel Innovation Authority to complete the process development from both brine and battery sources. One of the main uses of the funds was the purchase of the LiEL™ Electrolysis skid for the TAT Research and Development (R&D) Center in Israel. The new process can be applied across all feed streams, originating from any source, including solar, hard rock, waste recycling, and process waste streams, to produce high-quality lithium hydroxide. The key characteristic of this process is the **high efficiency of extraction**, superior to the traditional process, and a **lower use of water.**

Rare earths

Rare earth elements are among the most **sought-after chemicals** worldwide, **essential to modern technology** and everyday life. They are found in devices like smartphones, computers, electric vehicles, wind turbines, and solar panels. Recognized as critical raw materials by both the European Commission and the US Department of Energy, rare earths are vital for **advancing the energy transition** and achieving global decarbonization goals. Tenova offers a range of solutions to better **manage rare earths**.

Black Mass and Rare Earth Solvent Extraction

TAT specializes in both innovative technology development and robust process equipment for solvent extraction. Our experience and expertise in all aspects of SX includes the development of SX processes utilizing an in-house R&D center and detailed design, supply and construction of SX plants.

Tenova Turbulent Technologies Mixing System is a new mixing technology which enables significant reduction of entrainment levels without changing the process flow. It can be easily retrofitted to most existing mixer settlers or installed in new SX plants. The main advantage of this technology is the reduction of entrainment of expensive extractants, organic contamination in the product stream, aqueous contamination in the loaded organic stream, ecological impact of organics in the raffinate stream, operation, and maintenance costs. It further enables increased settling flux and eliminates the need for after-settlers. Thanks to this technology, our clients are able to recoup precious metals such as lithium, nickel and manganese from battery forms.

Rare earths are also the main components of our latest product, **NdFeB magnets** made from neodymium-praseodymium (NdPr) metal. This stable and powerful magnet can contribute to powering electric vehicles, further demonstrating how big an impact our innovations can make in this industry.

The World's Strongest Permanent Magnet

Tenova has designed, manufactured, and commissioned **advanced electrolytic cells** for the efficient commercial production of NdPr metal. Equipped with cutting-edge automation and an automatic tapping system, **these cells ensure operational efficiency, stability, and high product quality**. Our proprietary sensors and integrated control system optimize performance and reliability, supported by auxiliary equipment to enhance plant operations.

This technology has been deployed by MP Materials, marking the **first commercial-scale production of rare earth metals in the USA** in decades. MP has an agreement with **General Motors** to supply permanent magnets to make **electric cars** in the US, and, to date, it is the only manufacturer of these magnets. At this facility, NdPr metal will be used to produce NdFeB magnets—among the most powerful permanent magnets essential for vehicles, drones, robotics, electronics, aerospace, and defense. Tenova Group, which initially developed this technology with the University of Toronto, is proud to contribute to this milestone, **reflecting our dedication to innovation and the energy transition**.

Twin-chamber Furnaces for Aluminum

Aluminum's many useful qualities have made it ubiquitous across all areas of modern life. Additionally, its recyclability makes it a highly valuable waste material. **Recycling aluminum uses up to 95% less energy than it would take to mine virgin material**, creating fewer emissions. Tenova has created new technologies to further enhance the environmental benefits of recycling aluminum. Our **Twin-Chamber Melting Furnace (TCF®), a Tenova LOI Thermprocess technology**, enables the remelting of up to 6% organically contaminated aluminum or other scrap metal without pre-treatment. Its dual-chamber design includes a post-combustion process to completely incinerate contaminants and use the resulting energy generated for furnace processes, thus reducing consumption of external energy. Our TCF® technology has **30 installations worldwide**, producing approximately 1,500,000 MT of liquid aluminum every year. And for existing casthouses, the application of TCF® to the recycling of post-consumer scrap can significantly reduce the overall CO_2 emissions of the plant, as the process generates only 80 kg of additional CO_2 per ton of liquid aluminum.

Magnesium Production from Coal Ash

As global demand for magnesium metal rises, **Latrobe Magnesium Limited (LMG)** in Australia uses Tenova's technology to **harvest this metal from fly ash byproduct** – a hazardous waste material deriving from brown coal power generation. Originally developed to have a zero-waste pickling process during steelmaking, our pyrohydrolysis process was adapted to suit LMG's unique situation to **recover magnesium**. The related emissions from this technology are roughly half of those of conventional magnesium production plants. Launched in 2022, LMG is currently building its 1,000 tons per annum magnesium demonstration plant in the Latrobe Valley of Victoria integrating the Tenova Spray roaster unit. From the production experience acquired through this initiative, LMG eventually intends to develop a commercial scale operation producing 10,000 to 40,000 tons of magnesium metal per year.

Mining advancements

DELKOR Thickeners

In 2024, DELKOR secured a significant contract to supply equipment to the world's largest thickened tailings project, located in Chile. DELKOR's thickener technology provides a **safe and sustainable dewatering solution for tailings management**. As part of this key project, DELKOR will supply seven 60 meter diameter DELKOR High-Density Thickeners, together with a multitude of DELKOR Shear Thinning Systems to the copper tailings facility. This important project represents a long-term strategy for the safe and effective disposal of copper tailings, establishing what will become the **largest thickened tailings project globally**.

The use of DELKOR thickeners will enable **significant water recovery**, allowing water to be reused in processing. This approach greatly reduces freshwater consumption and will ensure continued mining operations for all the client's northern mining sites, which would otherwise face significant challenges in securing sufficient water for the concentrator plant operation.

The current copper tailings from two large mining sites are discharged into an existing tailings dam whose lifespan, though extended, is nearing the end of its useful life. To meet projected production demands, the new facility is scheduled to commence operation in the first half of 2027, enabling more effective and improved tailings storage, higher water recovery rates, and a reduction in particulate emissions.

DELKOR's high density thickener technology will help the mining operation reduce freshwater intake and operate more safely. Its position as a leading global provider of high-performance dewatering solutions is essential for water recycling, for increasing safety and for reducing the environmental footprint of tailings facilities in arid regions such as Antofagasta, Chile.

DELKOR Horizontal Belt Filters (HBFs)

In line with circular economy principles, **DELKOR horizontal belt filters (HBFs)** offer an efficient solution for resource recovery and waste reduction across various industrial processes. These high-capacity vacuum filtration systems are capable of dewatering a wide range of materials, enabling both **water reuse** and more **sustainable residue management**. DELKOR pioneered the application of belt filters in acid filtration, and this technology is now widely used for tailings filtration as well. By supporting closed-loop processes and reducing the need for fresh water, HBFs help improve overall operational efficiency and environmental performance across sectors.

DELKOR Filter Presses

DELKOR Filter Presses offer an effective solution for reducing waste and enhancing the reuse of water in both mining and industrial operations. By applying **high pressure** to dewater a wide range of commodities, these systems produce a dry filter cake that can be safely handled, stored, or even reused, depending on the application. Commonly deployed downstream of mineral processing plants, as well as in chemical, fertilizer, and wastewater treatment facilities, DELKOR filter presses support the **sustainable management of tailings and sludge**. Their ability to recover water and significantly reduce waste volumes contributes directly to greater resource efficiency and a lower environmental footprint.

Impact Monitoring

As a responsible company, we recognize the importance of monitoring the impact of our products and services on the environment and human health. We commit to improving our processes and products to ensure their impact is accounted for throughout their entire life cycle.

Pomini Digital Texturing™

Our **Pomini Digital Texturing™** (PDT™) equipment covers an extensive range of **surfaces for work roll texturing** in cold rolling mill applications for both the steel and aluminum sectors. With up to four state-of-the-art lasers and no need for ancillary equipment, the process requires **minimal power** consumption. A simple digital process, based on modern **fiber-optic laser** heads, PDT™ enables an unparalleled range of surface possibilities compared to any other existing texturing technology.

PDT™ offers **benefits beyond energy efficiency**. It does not have adverse impacts on human health. Other texturing technologies may require, as a post-process in many applications, the use of significant quantities of hexavalent chromium, a highly carcinogenic material which can be difficult to remove from the environment. PDT™ makes it possible to significantly reduce, and even completely **eliminate hexavalent chromium**, making it a much safer and less toxic alternative.

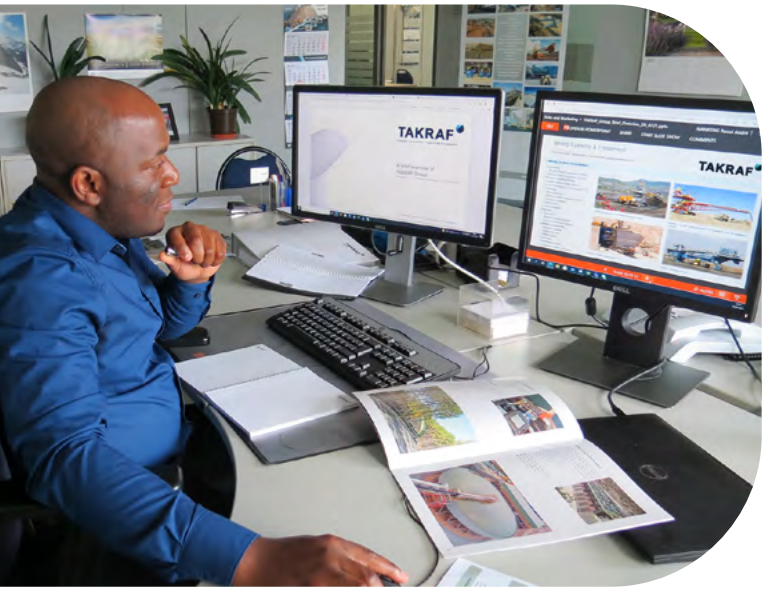
Looking ahead, Pomini Tenova foresees **several impactful potential uses** for the revolutionary PDT™ technology. One potential use we are currently exploring is in the field of electrolyzers - machines that convert water into hydrogen to be used as a clean-burning fuel, a key enabler of a low-carbon future. A second area of development is in electric vehicle batteries. We are exploring the use of PDT™ on aluminum foil to obtain a reduction in intrinsic resistance characteristics through texturing. We look forward to sharing more about these and other potential applications in the future.

PDT™ becomes "Product Category Rule" through Life-Cycle-Assessment (LCA) as per ISO 14025:2006

In 2021, Pomini Digital Texturing™ (PDT™) became the first machine in the metal surface finishing sector to complete a lifecycle analysis (LCA). As a result, the technology was certified as complying with the ISO 14025:2006 standard. The LCA analysis was registered on the EPD® Portal – the platform of the International EPD® System, the world's leading global LCA program operating in accordance with the ISO 14025, ISO/TS 14027, and ISO 14040, among others, standards, and is **now accessible to all users.** Subsequently, thanks to the experience gained through the LCA process, Pomini Tenova legitimately takes on the position of the "Product Category Rule", the rules, requirements, and guidelines to develop a high-quality EPD for a specific product category, ensuring that functionally similar products are assessed and compared in the same way when measured through an LCA.

Delivering **Safe Products by Design**

Tenova Group encourages employees at every level to focus on eliminating potential dangers before they emerge. This means **safety starts at the design stage**, leveraging the experience, know-how, and innovative approaches of our experts and engineers to **build safety directly into products** from the start. This unwavering attention to detail has enabled us to build an extensive, multi-decade track record of safe and high-performing products, systems, and facilities.



Safe Technology for Clients

A tech-forward approach, focused on digital technologies, data gathering, data analysis, and dedicated training, enables us to deliver products with considerable safety advantages. We build monitoring features, including robotics, smart sensors, and AI, directly into our products. We collect digital data on facility performance and production errors and compile digital report cards for maintenance effectiveness and troubleshooting. These innovations provide real-time and predictive analytics to **enable clients to prevent accidents** and reduce potential harm to their employees.

Metals – Safe Technologies

Our **iBOF Intelligent iSDS® Slop Detection System** closely **monitors vibrations** in the BOF route and **alerts technicians** when the risk of slopping, or an overflow, increases past a set threshold. iSDS® technology significantly reduces the number of slopping events through effective prediction of such occurrences and advanced alarming to the furnace operators. Accurate slop prediction is a critical tool in the BOF operation that provides an additional protective system to increase yield and productivity while reducing operating costs and minimizing fugitive emissions. Preventing slopping reduces potential harm to workers from direct contact or slop emissions, while reducing product loss. Three iSDS® systems have been successfully commissioned by ArcelorMittal South Africa between 2023 and 2024, and all three have been in continuous operation, steadily achieving expected performances.

Our **Water Detection System (WDS)** enables EAF process monitoring optimization by measuring the sound of the water flowing in the water-cooled sidewalls. Additionally, our WDS monitors leaks and alerts plant operators when higher-than-normal water conditions are present in the EAF. Tenova's WDS is the only commercially available system that is capable of continuously interconnecting with the EAF off-gas for both H2 and H2O vapor. The real-time EAF process information and NextGen® off-gas hardware include full spectrum analysis of the water conditions in the EAF, which are evaluated for abnormalities.

Our **Submerged Arc Furnaces (SAF)** provide more **reliability and safety** when processing **Platinum Group Metals (PGMs)** concentrates than other furnaces. Because they use electricity as an energy source, our SAFs provide high process efficiency at low energy utilization levels. Furthermore, Tenova has developed a patent that covers the use of graphite with copper cooling to prevent the sulfide corrosion of the copper cooling elements in a furnace sidewall. The use of graphite helps to protect the copper cooler from corrosion caused by free sulfur present in the furnace sidewall adjacent to the concentrate feed layer. Advances in robotics have enabled Tenova to develop an automated casing addition solution for Søderberg electrode. Poor casing addition practices are one of the main contributors to electrode failure; the new development therefore has multiple benefits – not only does it remove personnel from a potentially hazardous environment, but it also contributes to more stable and safer plant operation with higher quality standards for electrodes casing welding.

MEGtec™, Tenova's alternative cooling medium system, drastically **reduces the risk of explosions** caused by leaks from furnace equipment such as sidewall coolers, taphole block, and electrodes. Minimal equipment changes to the existing equipment are needed, and the technology is well suited to adoption in existing operations. In 2024 tests were conducted using this technology, showing that no explosion in liquid metal occurs - even with substantial leaks from the side walls or copper coolers that use this system.

Pomini Digital Texturing™ (PDT™), presented in the "Impact monitoring" paragraph (p. 37), is inherently fire risk-free and fully enclosed, thus reducing the exposure of workers to internal processes.

Our **SAFE+ (Safe Plus) EAF configuration** allows **operators to remain in a comfort area** and **detect several possible critical situations**, like water leakage. The introduction of several robotized operations and remote control of the furnace improves the working conditions of operators in the melt shop, particularly in the area surrounding the furnace.

Tenova, through its Business Unit Tenova Material Handling (TMH), is developing some main R&D projects with the aim of improving the value for clients in terms of safety and workers' wellness.

SafeForPorts is a **pioneering initiative** that leverages **Virtual Reality (VR) and AI** to revolutionize **port operations**, prioritizing **safety** in the maritime industry. The project is part of the Istituto Italiano di Tecnologia's (IIT) RAISE (Robotics and AI for Socio-economic Empowerment) and is implemented under the Italy's National Recovery and Resilience Plan, funded by the **European Union – NextGenerationEU**, highlighting its significance in driving innovation and safety within the maritime sector.

A combination of digital twins and VR allows company stakeholders to immerse themselves in port operations and fully understand data, providing solutions. Digital twins enable companies to show their technical teams the global layout of the equipment and train for the operation that will be required. All of this can be presented concisely through the interlinking digital twins with virtual and augmented reality. This allows the **operators to train** without the stress of incidents and builds confidence for when they will operate on real machines.

Thanks to **remote control**, **the TMH machine** can be operated **remotely**, typically in a building. This allows operators to work in more comfortable conditions and increases machine availability, reducing the time for shift changing and allowing the machines to work in poor weather conditions.

The project has gained significant momentum thanks to the **synergies** between **automation teams** in Tenova. A pilot system has been implemented to assess the confidence level of a skilled operator while **driving the ship unloader remotely**, i.e., without a direct view of the working area. The goal is to determine whether the working environment reproduced at the remote station provides a **sensory experience comparable to direct view** operation. The evaluation focused on key factors such as visual details, granularity, and realistic perception of each piece of equipment as well as dimensions and sounds. Thanks to all the sensors and cameras installed, the operator is allowed to experience optimized visibility from a remote station as if he were on board the unloader.

Full Automation represents the most ambitious goal that TMH wants to achieve. The target is to reach **unmanned operation of TMH Port Machines**. The expected results are: an **optimization** of the **operation sequences** with a consequent **energy consumption reduction, better operating conditions for operators** who will have to supervise the activities but in less stressful conditions, and a **reduction** of overall operating time.

Mining – Safe Technologies

Tenova Group prioritizes safety in all its designs, including the mining industry: both **TAKRAF and DELKOR promote a holistic maintenance philosophy** that enhances safety, operational efficiency, and reduces the total cost of ownership by integrating maintenance requirements from the earliest engineering stages.

Chute maintenance is a typical high-risk task: replacing liners is hazardous and time-consuming. TAKRAF mitigates this by designing modular or rotatable chute sections, allowing maintenance to be performed in a much safer manner and reducing downtime from a full shift to just 60 minutes. Another smart solution TAKRAF has developed is the ability to replace liners safely from outside the chute. Techniques such as external ultrasonic wear measurement enable planned **maintenance without entry into confined and dangerous spaces**.

For elevated and/or steep belt conveyors, TAKRAF has developed a maintenance cart that can safely and quickly access any point along a conveyor. This solution has been successfully deployed at major copper projects in North and South America, significantly enhancing safety and efficiency, even in complex terrains with elevated sections and curves.

At Tenova Group, safety is a **non-negotiable** priority and prioritizing it can mean turning down opportunities that do not meet our standards.

In **2024**, TAKRAF declined to bid on an important project with a major global mining company **on grounds of safety**. TAKRAF engineers deemed the required technical operating parameters of the machine too extreme and outside of what would be considered safe parameters for slope steepness and technical feasibility. TAKRAF proposed an alternative solution to reduce slope steepness so as to arrive to suitably safe operating parameters, but this was rejected. At this point, **TAKRAF declined to bid, citing significant safety concerns** regarding the operation of such a machine within the required technical operating parameters and harsh operating conditions of the mine site.

The following content provides some further background on some of the **innovations and challenges** that TAKRAF continued to develop during 2024, proving that **safety and efficiency can complement one another**.

TAKRAF X-TREME Class Sizer: Redefining Maintenance, Safety and Productivity

As mining operations adopt more advanced equipment and face tougher conditions, there is an urgent need for maintenance concepts that are both safe and efficient to protect workers and minimize downtime. While traditional views suggest that increased safety complicates and slows down maintenance, TAKRAF's X-TREME Class Sizer challenges this assumption.

Designed according to TAKRAF's holistic maintenance philosophy, **the brand's X-TREME Class Sizer combines durability and abrasion resistance, together with a modular-type design to minimize wear and simplify maintenance**. Its components allow for quick and adaptable servicing, from replacing individual crushing teeth to roll segments or even entire rolls with reduced disassembly and downtime.

Key features such as a quick-release system, split housing for shaft removal, and integrated sliding units all contribute to increased safety and reduced maintenance times. **TAKRAF emphasizes that safety and efficiency in maintenance are complementary goals, with safer operations leading directly to higher productivity**.

The TAKRAF Sizer Hot-change Method

Another prime example of increased safety and efficiency is TAKRAF's sizer hot-change method, which allows for safe and quick swapping between an operational sizer and a spare on the same platform, minimizing downtime. For larger operational setups, a checker-type arrangement enables multiple sizers to share a common spare machine, which can be supported by an optional bridge crane for handling, further boosting efficiency.

These solutions allow maintenance activities to occur separately from operations, **improving safety and ergonomics while reducing time pressure that can lead to unsafe shortcuts**. While such systems may require higher initial investment, they ultimately reduce overall ownership costs by enabling safer and faster equipment reintegration, maximizing production time.

TAKRAF's commitment to separating operation from maintenance exemplifies how safety and efficiency can go hand-in-hand, proving that smarter maintenance solutions are able to combine both increased safety and increased efficiency, without compromise.

Innovative Tie Rod Replacement on a Ship Unloader: TAKRAF Brazil's Safe and Efficient Solution

A few years ago, TAKRAF Brazil was tasked with replacing the tie rods connecting the main boom to the counterweight boom of a Continuous Ship Unloader (CSU) commissioned in 2002. The challenge was to complete the work safely, efficiently, and within tight time and budget constraints.

Traditional tie rod replacement involves extensive scaffolding to support the machinery, but this method was unsuitable for the project's tight schedule. TAKRAF Brazil's engineering team devised an **innovative solution by employing a temporary tie rod to maintain stability, eliminating the need for scaffolding altogether**.

This approach allowed the project to be completed in less than 15 days, 60% faster than by using a traditional approach with scaffolding, and reduced costs by nearly 50%. Importantly, the work was carried out without any accidents and without disrupting other critical equipment, such as the jetty conveyor beneath the CSU.

This project is just one of many examples that highlight **TAKRAF's commitment to innovative, safety-first solutions that optimize efficiency**. This project exemplifies how creative maintenance strategies can simultaneously enhance safety and operational efficiency.

TAKRAF's Advanced Remote and Condition-Based Maintenance Systems

Bulk material handling systems are critical to mining operations, linking mines to processing plants, stockyards, and markets through reliable and efficient material movement and storage. Any disruption in this chain impacts productivity, making maintenance essential. To address this, **TAKRAF develops automated solutions that maximize safety and efficiency in maintenance across mining, material handling, and mineral processing equipment**.

TAKRAF's equipment features advanced Programmable Logic Controller (PLC)/ Distributed Control System (DCS)-based control systems with built-in protection to reduce operator errors and support troubleshooting. These systems integrate with clients' asset management, Enterprise Resource Planning (ERP), and Manufacturing Execution System (MES) platforms to plan preventive maintenance effectively. Remote access and support enable software updates and expert assistance via smart glasses, augmented reality tools, and web-based dashboards, showing key performance indicators and maintenance schedules.

Condition-oriented maintenance is facilitated through sensors and advanced monitoring tools that track component health, such as idler bearings and belt conditions. Additionally, intelligent lock-out procedures enhance safety by allowing maintenance teams to securely isolate power, increasing safety, and reducing downtime during troubleshooting and repairs.

R&D and Sustainable Innovation

At Tenova Group, we enhance existing technologies in the metals and mining sectors, while also designing and producing innovative solutions that minimize the environmental impact of our clients' facilities and boost their efficiency and performance. Our solutions reduce CO_2 emissions to some of the lowest levels in the metals industry. We create cutting-edge technologies that **reduce fine particles, NOx emissions, dioxins, and other hazardous substances**. We strongly believe in the potential of alternative and renewable energy sources, incorporating them into our solutions wherever possible. We have already put **hydrogen-ready technologies** on the market, and many of our solutions are designed around the concept of **recovery, reuse, and circularity**, from dispersed energy to reutilized residues and more, fostering an effective circular economy.

Our innovation process begins with **research, an open-ended, creative ideation phase**, and is followed by development, where ideas with high potential are turned into prototypes of future products. Finally, once tested and finalized, the product is produced and marketed to customers. This process cuts across a number of teams and business units, including engineering, functional units, sales, and more. Our attention to sustainability has been a successful driver of business growth for Tenova Group. We are coordinating our **R&D&I** (Research, Development, and Innovation) **efforts across Business Units and Product Lines**, to find integrated, synergistic solutions through collaboration.

Our R&D&I focus areas for 2022-2024 were **energy transition, local environment, process flexibility and efficiency, raw materials and residual valorization, safety, and final product quality**. We have identified how each of these focus areas contributes to the United Nations Sustainable Development Goals (UN SDGs). The UN SDGs serve as a useful guide for businesses and society to align on to advance sustainable development. To further our impact, we also participate in national and regional working groups, including EU ones, on sustainable topics like circular economy and decarbonization to generate projects, roadmaps, and partnerships.

Metals - 2024 R&D projects

Between 2023 and 2024, Tenova submitted 14 proposals for EU and Italian funding for projects covering several areas of interest and involving different business units. Of these, six were selected for funding and have kicked off:

iSteel Expert

Funded by the EU Research Fund for Coal and Steel (RFCS) program, it aims to **implement a remote virtual expert system to improve the management of steel production operations**. The IoT-based system will be used to monitor events and suggest actions, reducing the need for physical presence around the furnace area at the Pittini Siderpotenza plant in Potenza, Italy. Additionally, it supports the preservation and transfer of industrial knowledge through a knowledge-based tool that includes interactive training, fostering the continuous evolution of industry expertise.

SafeForPorts

Explored in the "Safe technology for clients" chapter, is funded by RAISE (Robotics and AI for Socio-economic Empowerment) with support from the Italian Ministry of University and Research (NextGeneration EU funding). It is a **Virtual Reality (VR) simulator for remote training** and on-field assistance for smart and sustainable ports.

AI DRAFT

Funded by the MADE Competence Center 4.0 with support from the Italian Ministry of Enterprise and Made in Italy (NextGeneration EU funding), it focuses on **AI-driven automation for technical design**. The project aims to apply AI and design of experiment (DoE) technologies to **improve EAF** shell design by:

- Enhancing energy efficiency, reducing CO_2 emissions, and minimizing energy and material consumption by revising component designs (e.g., cooled panels, injectors).
- Extending component lifespan and improving reliability.
- Reducing the time to market for innovative components.
- Minimizing residue generation.
- Preventing operational issues.

Simulation Driven Design for Tenova Consteel

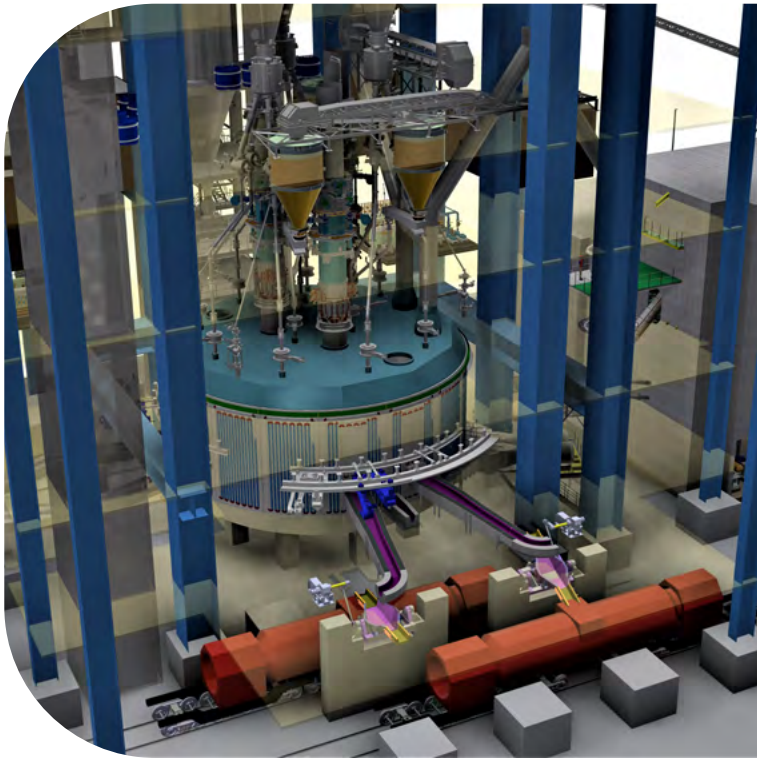
Funded by MADE Competence Center 4.0 with support from the Italian Ministry of Enterprise and Made in Italy (NextGeneration EU funding), it focuses on **developing a Reduced-Order Model (ROM)** for the Consteel® Conveyor. The aim is to simulate the behavior of the Consteel® Conveyor under repeated loads in a very short time, within a specific "design space." This design space represents the set of parameters or variables that define a system, product, or process, and includes all possible combinations of factors influencing the design or process outcome. By enabling these simulations, this project helps **reduce environmental impacts** related to trial-and-error testing, improving the overall sustainability and efficiency of our steelmaking technologies.

LIFE H2Reuse

Funded by EU LIFE-CLIMA, the project focuses on the **sustainable decarbonization** of the bright annealing process in the steel industry by **recovering and reusing hydrogen** (H2) as fuel in H2 burners. Specific goals include reducing CO_2 emissions, preventing H2 waste, lowering energy consumption, demonstrating the new process, and evaluating its cost-effectiveness and business potential. The innovations will be developed and tested in a real environment to assess their technical, environmental, and socio-economic impacts.

Extracting Value from Black Slag

Black slag is a by-product of the EAF steelmaking process. Due to the oxidizing operating mode of the EAF, the slag contains up to 30% FeO. An **Open Slag Bath Furnace** (OSBF) is the perfect solution for processing black slag, and due to the reducing environment of the OSBF, we are currently studying how the slag could be modified, producing **pig iron**, and a **white slag** that can be sold to the cement industry. The technology is complementary to the Direct Reduction Process-EAF (DRP-EAF) processing route and is not a substitute for the primary steelmaking process.



Moreover, three additional projects have been selected for funding, and now the administrative formalization is ongoing with the EU Commission:

- **EU Research funded by RFCS's Big Ticket call PRISMA** – PRISMA is pioneering sustainable practices in the European steel industry, aligning with the Green Deal and Twin Transition objectives. Central to PRISMA is the development of a Unified Environmental Data Model (UEDM), streamlining environmental reporting and analysis across the steel value chain. Leveraging modern digital infrastructure and platforms, PRISMA aims to quantify and mitigate steel production's carbon footprint through, for example, dynamic life cycle assessments (LCAs) and digital product passports (DPPs).
- **EU Research funded by RFCS's Big Ticket call SLAG2BUILD** - Forced air granulation of Ladle Furnace SLAG to enhance its hydraulic properties and allow its re-use as a replacement of Portland Cement in the Building sector.
- **EU Research funded by Horizon Europe - SYRIUS** - The Syrius project aims to integrate a SOEC (Solid Oxide Electrolyzer Cell) to produce green hydrogen within a real Electric Arc Furnace steel plant, advancing circularity in the steelmaking process. The system also incorporates heat and water recovery, as well as steam generation, to enhance efficiency.

Case Study: Tenova with TenarisDalmine and Snam for Hydrogen Testing in Nation First

On July 3, 2024, Italy began its first test of hydrogen use in steel production. The project, led by **Snam**, **TenarisDalmine**, **and Tenova**, aims to explore solutions for decarbonizing hard-to-abate industries by utilizing hydrogen to support the green energy transition. The primary goal is to use hydrogen produced on-site to fuel an H2-ready burner developed by Tenova and installed in a reheating furnace at Tenaris's plant in Dalmine, Bergamo. Over six months, the trial assessed hydrogen's performance in an industrial setting, focusing on the steel sector, while developing safety guidelines and plant management procedures to reduce CO_2 emissions.

TenarisDalmine provided the plant site and reheating furnace, contributing its expertise in steel plant operations. Snam supplied an alkaline electrolysis system to produce hydrogen and support its transportation. Tenova provided the hydrogen-powered burners, while Techint Engineering & Construction managed the installation, risk analysis, and safety compliance.

Snam also introduced its Hydrogen as a Service program, offering leasing options for electrolysis systems to help companies adopt decarbonized hydrogen with reduced risk. This collaboration strengthens Techint Group's expertise in decarbonization technologies for hard-to-abate industries.

Furthermore, in 2024 we have made significant progress on the following projects:

HyTecHeat

In 2022, Tenova was awarded a Horizon Europe project to demonstrate blended green hydrogen and fossil fuel firing in industrial furnaces. The HyTecHeat project aims to **advance hybrid heating technologies by evaluating their effects on steel product quality, refractories, and overall heating processes**. Industrial tests on real burners across three European sites will support the steel sector's transition to hydrogen. Tenova's demonstrator at T-LAB has been selected as a key example for hydrogen use in industrial reheating furnaces.

Initially, Tenova combined modeling and experimental testing to develop industrial burners capable of using hydrogen with conventional fuels in varying ratios. We will also provide an industrial-scale combustion system fueled by green hydrogen to validate its technical feasibility in industrial furnaces.

At T-LAB, existing equipment currently supports full-scale combustion systems using natural gas. Adapting the facility for hydrogen involves two approaches: hydrogen trailers or on-site hydrogen production. Due to capacity limitations of trailers, continuous on-site hydrogen production is preferred. Accordingly, Tenova plans to install a 1.5 MW alkaline electrolyzer, supplied by **De Nora's advanced Dragonfly® system**, **producing green hydrogen from renewable electricity**. The hydrogen is stored in pressurized buffer vessels at 30 bar, then expanded to 0.3 bar before feeding the hydrogen-ready TLX burner prototype (350 kW) installed on the test furnace. This burner operates under real industrial conditions with natural gas/hydrogen blends and oxygen-enriched air.

The combustion system's PLC integrates control and safety signals with the electrolyzer's PLC and hydrogen buffer pressure loop, decoupling hydrogen production from consumption. This design allows the hybrid burner to closely follow furnace thermal demands while overcoming electrolyzer turndown limitations.

Additionally, **the project integrates a comprehensive hydrogen storage system provided by Snam, ensuring safe and efficient handling of hydrogen produced on-site**. This setup is part of a broader HyTecHeat initiative, **funded with €3.3 million by the EU**, which includes multiple demo cases focused on hybrid burners and the progressive transition to 100% hydrogen use in steel reheating. The project targets significant reductions in Scope 1 CO_2 emissions, with potential EU-wide savings of 7.5 to 25 million tons annually.

The demonstrator highlights critical challenges in green hydrogen adoption at industrial sites, including:

- Flexibility of hydrogen production and consumption.
- Integrated control of combustion and electrolyzer systems.
- Efficient storage of surplus green hydrogen for later use.

By encompassing the entire production chain - from green energy generation via photovoltaics to hydrogen production, storage, and furnace operation - HyTecHeat sets a benchmark for safe, efficient, and scalable green hydrogen integration in sustainable steel manufacturing.

ReMFra Project: Recovering Metals and Mineral Fraction from Steelmaking Residues

The **ReMFra project**, part of the Clean Steel Partnership (Horizon Europe), aims to develop and validate an efficient industrial scale pyrometallurgical process for **recovering metals and minerals from various steelmaking residues**. The process consists of two main sub-processes: a plasma reactor for processing coarse residues like scale, sludge, and slag, and the RecoDust process for fine-grain residues. Tenova will develop the technological process for the plasma reactor and size the main equipment involved in the system, and will also participate in the dissemination and exploitation program by sharing research results with potential users. Some of the targets of this project include the development and implementation of highly efficient technologies for recovering metals and mineral fraction from steelmaking residues, enabling the use of obtained slag in higher value applications, and the reduction of CO_2 emissions.

iSlag

iSlag was a project started in 2020 and concluded in 2024, focused on improving the **valorization of slag from the electric steelmaking** route by promoting best practices and enabling industrial symbiosis. Slag, which makes up around 90% of steelmaking byproducts, plays a central role in the steel industry's efforts to align with the EU's circular economy goals, as emphasized by ESTEP and the Clean Steel Partnership.

Efficient slag recycling requires accurate knowledge of its chemical composition. However, steelworks generally prioritize the monitoring of steel quality over slag characterization. This oversight can result in missed opportunities for cost savings or environmental gains. A major barrier is the absence of affordable, real-time systems for analyzing both liquid and solid slag. While slags are often stored and later assessed for reuse, the lack of fast, specific tools, especially when slag from different steel grades is mixed, limits their full valorization potential. The challenge is even greater with uncommon steel grades, where slag properties are not prioritized. iSlag aimed **to address these gaps** by supporting technological advancements that enhance slag management and promote more effective reuse. Tenova played a crucial role in achieving these objectives, by designing and implementing **the diagnostic systems for real-time slag analysis**. In fact, we developed and field tested – at TenarisDalmine's EAF meltshops and **Sidenor Aceros Especiales Basauri** plants – the **Laser Induced Breakdown Spectroscopy (LIBS) system**, a powerful analytical technique used to determine the composition of materials by focusing a high-energy laser pulse onto the surface of a sample. To enhance the accuracy of the LIBS system and process the data collected by it, Tenova also developed a **Machine Learning (ML) workflow**. By using advanced algorithms like **Support Vector Regression (SVR) and Extreme Gradient Boosting Regression (XGBR)**, the ML workflow delivers precise and reliable predictions.

NGEN Project

The **ArcelorMittal Dofasco-led consortium**, in partnership with Tenova, developed a smart technology platform to digitally transform the secondary ladle metallurgy facility at ArcelorMittal Dofasco. The project enhanced the understanding of digitalization in heavy manufacturing, an area that often lags behind other industries. Key insights were gained in process execution for **implementing intelligence, establishing data flow standards, and understanding the impact on the workforce**, crucial as global industrial economies move toward digital transformation.

InSGeP

The InSGeP project, "Investigations of Slags from Next Generation Steel Making Processes," is a European research initiative co-funded by the EU Research Fund for Coal and Steel (RFCS), launched on July 1, 2023. As the steel industry shifts to low-emission processes like direct reduced iron, hot briquetted iron, hydrogen plasma smelting reduction (HPSR), and electrical smelting, understanding byproducts like slag is crucial for maintaining a zero-waste approach.
The project aims to **identify slags produced by future steelmaking processes** and explore their **valorization** within the **existing value chain**. It seeks to define innovative applications for slag to ensure a smooth transition without disrupting industries that rely on it, such as road construction and cement production.

The project involves 13 partners from Austria, Belgium, France, Germany, Italy, and Spain, including 5 steelworks, 6 research organizations, and 2 suppliers. It will use limited quantities of slags from next-generation steel production and conduct laboratory, pilot-scale, and industrial-scale tests. The slags will be evaluated for their chemical, mineral, environmental, and physical properties, with various cooling and granulation methods applied for different applications. Testing will include using slags in road construction, cement production, liming material, and 3D printing.

iSteel-Expert

iSteel-Expert is a remote virtual system that **monitors steelmaking operations 24/7**, analyzes data, and suggests actions to optimize the process. Acting as a human expert, it collects and analyzes furnace data, **improving maintenance and decision-making**.
Powered by IoT, it enhances human management by detecting relevant events and identifying their impact. The system integrates a **knowledge-based approach** through an interactive, immersive training tool, helping preserve, transfer, and evolve the company's knowledge base. The main objectives pursued are the preservation and evolution of the company's knowledge, increasing process efficiency, improving equipment condition and maintenance, and reducing environmental impact.

LIFE H2Reuse

In the production of **seamless stainless steel and nickel alloy precision tubes**, bright annealing is crucial for achieving the desired properties. This process, conducted in a vacuum or controlled atmosphere with reactive gases, minimizes surface oxidation, resulting in a brighter surface, a thinner oxide layer, reduced hardness, increased ductility, and fewer internal stresses. It also lowers the risk of corrosion, cracking, and distortion. Bright annealing is performed in a hydrogen (100% H2) atmosphere at temperatures between 1,040°C and 1,200°C, followed by rapid cooling. In continuous plants like LOI's at SMSTI, hydrogen is dispersed after use, leading to wasted resources.

The LIFE H2Reuse project aims to **mitigate the environmental impact** of bright annealing by recovering and reusing wasted hydrogen as fuel in hydrogen burners. This innovative solution, still under development, will be tested in real environments to meet technical, environmental, and socio-economic KPIs.

The process will be applied to Tenova's roller hearth furnace plants, which also use hydrogen-rich atmospheric gas, offering the potential for reduced carbon footprints, resource savings, and cost reductions. The main targets concern emission reduction, energy savings, and resource efficiency.

GHG Emissions:	Resource Efficiency:	Energy Savings:
Baseline: 990.23 tons of CO_2eq/year **Project-End**: 618.34 tons of CO_2eq/year **Savings**: 372.75 tons of CO_2eq/year	**Baseline**: 0 tons/year **Project-End**: 32.65 tons/year of hydrogen recovered	**Baseline**: 1.85 GWh/year **Project-End**: 0.98 GWh/year **Savings**: 870 MWh/year

Mining – 2024 R&D projects

In 2024, our mining business continued fostering a co-creation culture and bottom-up innovation through the **"Innovation Challenge"** open to all TAKRAF and DELKOR employees across all global business units. In consideration of the business's commitment and sustainability statement, the Innovation Challenge focuses on ESG-aligned themes, namely: energy-efficient technologies, environmental impact reduction, circular economy, and low-carbon transition.

An unprecedented 89 applications were received, highlighting the growing internal commitment to developing sustainable and forward-thinking solutions. Winning projects ranged from a **semi-mobile dewatering plant for Dry Stack Tailings (DST) to a modular and reusable platform for process plant design, and a portable pilot plant** to test the performance of DELKOR's BQR MAXGen-equipped Flotation Cells across various applications.

This initiative aims to support the business's sustainability goals and, at the same time, develop a culture of shared value creation where employees are the fuel of the business, and strengthen the alignment between people and vision.

TAKRAF Systems focused its R&D activities on the following internal projects:

- **SmartSpreader:** The aim of this project, which started in 2022 in collaboration with the University of Queensland (UQ) in Australia, is to drastically reduce costs for supplementary dozer operation by automating the continuous dumping process of a spreader.
- **Conveyability Test Rig:** For this project, the phases of development, design and detailed engineering were completed, with the device expected to become operational in 2025. The test rig, which is intended to define the conveyability of bulk materials on conveyor belts, is attracting great interest, particularly in the area of Dry Stack Tailing (DST). Since a DST system significantly reduces water consumption, this initiative directly contributes to our Environmental goals in the ESG framework.

TAKRAF products also focused its R&D activities on two internal projects:

• **Wearing Green:** The project, started in 2021 in collaboration with the Brandenburg Technical University in Germany, and was completed in 2024. It aimed at a specific **Finite Element Analysis (FEA)** model that represents the inhomogeneities of a structure that is built up of several welded layers. Whereas rolled or forged steel can be modelled in FEA by just a few mechanical parameters determined by standard tests, the project showed that for 3D-welded structures, the parameters of the welding process itself must also be considered. By enhancing the accuracy of structural modelling for complex welded components, the project supports material efficiency and contributes to product safety and reliability.

• **Crushing:** The newly developed concept of a **smooth roll sizer** was successfully tested in the field and has the potential to further enhance the application range of TAKRAF's sizers. Under specific conditions, a smooth roll sizer can achieve similar small product sizes within a **smaller footprint, improve energy efficiency, and at a lower CAPEX** compared to other fine crushing or grinding equipment.

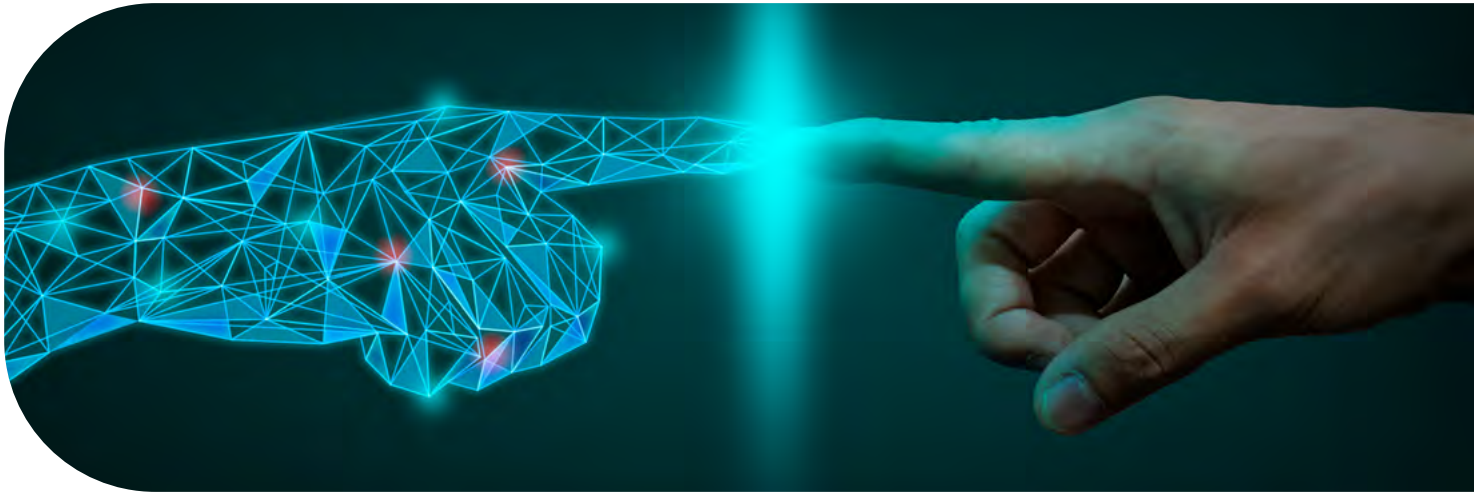
DELKOR continued with the great advances it made in the development of high-torque thickener drives, with this project now nearing completion. The project, which was launched in 2023, aims to support the industry in tackling one of the most pressing environmental challenges: **sustainable management of large tailings facilities and water conservation**. A testament to the good work carried out by DELKOR and the brand's R&D work was the recent award, by Codelco, the world's largest producer of copper, to supply seven DELKOR high-density thickeners to the world's largest thickened tailings project.

Furthermore, two internal projects were also launched:
• **Coarse Particle Recovery:** A research program was initiated to develop a method for **recovering valuable coarse particles** from diverse mineral slurries. Coarse particle recovery is currently receiving a lot of attention due to its advantage of rejecting unwanted minerals from the process circuit at an early stage. In doing so, the energy required to process material is lowered together with lowering the hydraulic capacities of downstream equipment, which results in further **energy efficiencies, decreased environmental impact, and improved sustainability**. The project has now entered the literature review stage, which will serve as a firm foundation for the subsequent stages of new product development.

• **Classification:** A classification project to return to basics and grasp the working principles of a specific type of particle classifier, to prepare for the inclusion of this equipment into the DELKOR product range..

Digital Transformation

Digital technologies have the potential to **revolutionize the metals and mining industries**. This is why Tenova Group not only integrates digital solutions into many of its technologies but has also created a digital strategy and team to stay ahead of the curve. Our strategy places customer value and sustainability at its center, helping us stay focused in this rapidly evolving space. It leverages technologies such as AI, machine learning, and data analytics to increase efficiency and reduce environmental impacts for our clients.



Adopting a Digital Mindset

To continue to optimize productivity through our new hybrid working model, we encourage our employees to adopt a **digital mindset**, seeking digital solutions to solve problems across categories from smart working to Industry 4.0 integration. The ambition of our digital mindset mentality is to **promote a deep cultural change** wherein our teams understand and harness the pioneering modern technologies that could revolutionize our industries.

Some of our activities to advance a digital mindset have been around the deployment of specific tools and technologies to educate employees and raise their awareness about digitalization processes. We have several technological systems in place to support remote collaboration in Tenova and with our business partners as well, including the **Project Collaboration Portal and the Supplier Portal**, all accessible on multiple, user-friendly devices.

Our project management platform provides an accessible central repository of all project information, such as relevant documents and procurement plans, which set up Tenova's teams for success. For the near future, we are planning to **enhance the platform with AI features** to reduce repetitive processes, therefore increasing efficiency.
We value the introduction of new tools and support our employees with **additional training** to familiarize them with these innovations, enhancing their connection with one another, while also emphasizing the importance of protecting sensitive information through high cybersecurity awareness and a thorough understanding of Tenova's procedures and guidelines. We have also successfully realized the **first pilot project using GenAI** (Generative Artificial Intelligence). The adoption of this transformative new technology will enable our employees to optimize their daily work and to focus on activities with real added value.

Support Client Engagement

In addition to the digital features embedded in our products, we want to provide the best possible customer service, so we have created several systems to help employees communicate effectively with customers. Customers have access to our **Tenova Digital Portal** where they can request support for specific products and order spare parts. The portal is regularly updated with new features. Among these services, the **ESPC (Electronic Spare Parts Catalog**) allows clients to browse and request spare parts efficiently through an interactive digital catalog. For Pomini customers, the **IPA (Inspektor Performance Analyzer)** service provides advanced data analysis derived from the Inspektor system. The **T-LAB Experiments section** offers access management and reporting functionalities for experiments conducted within the T-Lab research environment. Furthermore, the **Product Portal section** gives customers the ability to consult user and maintenance manuals for selected Tenova products. Lastly, **the Slag Granulation tool** allows users to perform detailed analyses of slag granulation potential based on its chemical composition, supporting a more informed and sustainable decision process.

Some of the proprietary digital tools we have developed include:

- **Tenova IIoT Platform** is the IIoT platform developed in partnership with Microsoft, which facilitates communication with our customers. Its purpose is to **retrieve plant data and analyze** it to develop new services and **AI applications** which help customers **use and maintain their equipment**.

- **Tenova EDGE** is the **field gateway** developed by Tenova, which allows the customer's plant to connect in a standard and secure way to our IIoT Platform. The EDGE device also has the capability to host and automatically **manage the update of developed machine learning** models and AI applications.

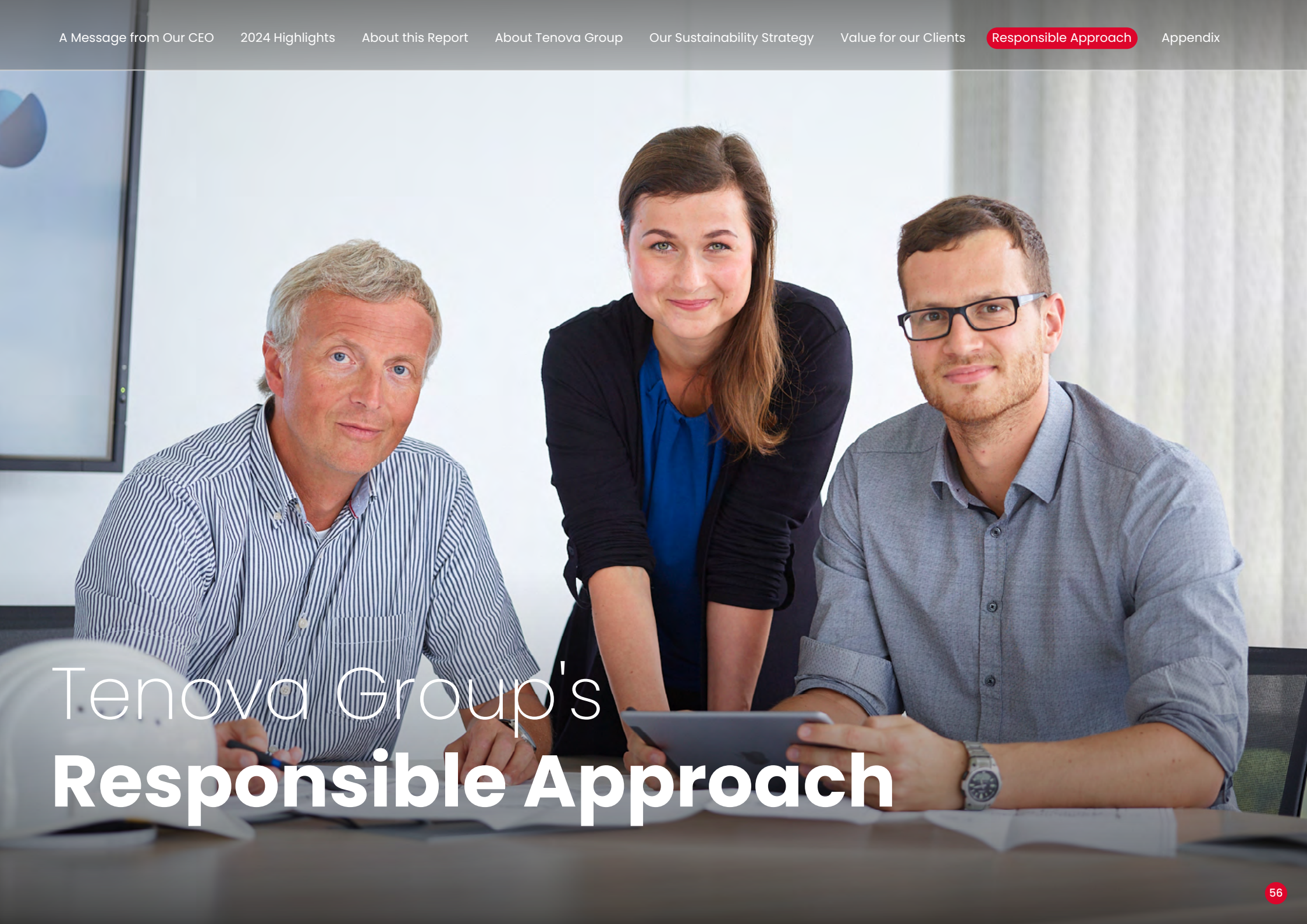
- **Tenova adVISOR** is a **virtual assistant** that provides suggestions on **product maintenance and operation**. It can be used on a mobile device and provides real-time updates. The tool's remote assistance feature, available on mobile and wearable devices, offers support to field operators.

- **Tenova Electronic Spare Parts Catalog** enables customers to easily **select spare parts** with fewer mistakes by connecting to the customer's portfolio database, accurately identifying the required part.

In addition to projects related to the digital transformation of processes, Tenova strives to develop digital solutions that reduce the environmental impact of our customers' plants and launch these solutions on the market. Notable launches have included the inauguration of **TenovaLAB in Castellanza**, established to conduct experiments and R&D in burner development, facilitating the completion of our Smart Burner platform.

Additionally, the adoption of the Tenova IIoT platform enables the application of our proprietary mathematical models, including those used for the thermal simulation of reheating furnaces. This innovative use of models also allows us to provide new services to our customers: for instance, the thermal model of reheating furnaces could be used by our customers as a simulator to gain insights on possible improvements in equipment operation.

One of the new features introduced to the Tenova IIoT Platform is the **Emission Impact Dashboard**. This tool is designed to track the emissions produced by the cloud services utilized by the platform. Consequently, it enables the monitoring and demonstration of the environmental impact of Tenova's products and technologies across the entire value chain, extending beyond the equipment installed at customer sites.



Tenova Group's **Responsible Approach**

Our **Environmental Impact**

As a Group, Tenova has long recognized the harmful impacts that climate change has on the planet. That is why **we strive to help clients mitigate that impact through our products, technologies, and services**. Alongside helping our clients, we are also taking steps to monitor and reduce the **environmental impact of our own operations**[5].

Due to the nature of our core business, the Group's own **energy consumption** and direct **CO_2 emissions** largely stem from a **few productive sites and laboratories** (located in Canada, Germany, India, Israel, Italy, and Poland) which account for most of the Group's energy consumption, and our **corporate offices**. Due to the **minor scale** of our **in-house consumption**, our **direct carbon footprint** can be considered negligible when **compared to our value chain**.

Nonetheless, to provide a transparent view to all our stakeholders as well as to gain a clear understanding of where to focus our adaptation efforts internally, the Group actively **monitors and reports information** related to **energy consumption and emissions** within the organization.

Furthermore, the Group's commitment to reducing its environmental impact has led to it being **ISO 14001 – Environmental Management Systems** certified in the Castellanza and Genoa (Italy) sites of Tenova, as well as for TAKRAF's Leipzig and Lauchhammer (Germany) and Australian sites.

[5] Tenova East Europe LLC (Tenova's subsidiary based in Russian Federation) is currently not integrated into centralized monitoring initiatives. Thus, it is not included in this Report.

Our **Energy Consumption** and Emissions

Completion of the **H_2 Electrolyzer** construction site at Castellanza HQ for research and development activies

5,570 tCO_2e Scope 1 + Scope 2 Location-based emissions

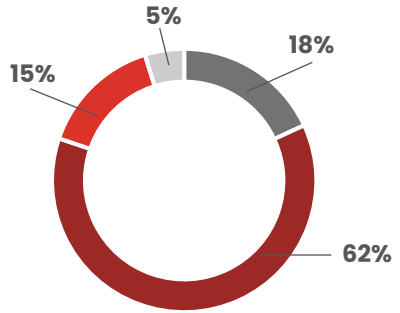
1,010,000 kWh generated by our **solar panels**

Energy Consumption

The **Energy consumption** of Tenova Group is relatively limited, as its core business is not related to energy-intensive activities. Most of the energy consumption is attributable to energy derived from **fuels used** for fleet vehicles that are owned or long-term leased by the Group, amounting to 97,463 GJ, which represents about 62% of total energy consumption. Then, in descending order of impact on the total, are fuels used for productive purposes (28,467 GJ), **electricity consumption** (23,647 GJ), and **steam consumption** (7,602 GJ).

To minimize our environmental impact and contribute to the transition towards a more sustainable energy model, the Group has implemented **self-production systems for electricity** using exclusively **renewable sources**. During 2024, over **1,000,000 kWh of green energy** were generated, approximately **16% of which was fed into the national power grid**, thereby helping to increase the share of renewable energy available at the local level and reduce dependence on fossil fuels.

Breakdown of Energy Consumption within the Organization (2024)



- Fuels used for productive purposes
- Fuels used for fleet vehicles owed by the Group or long-term leased
- Electricity Consumption
- Steam Consumption

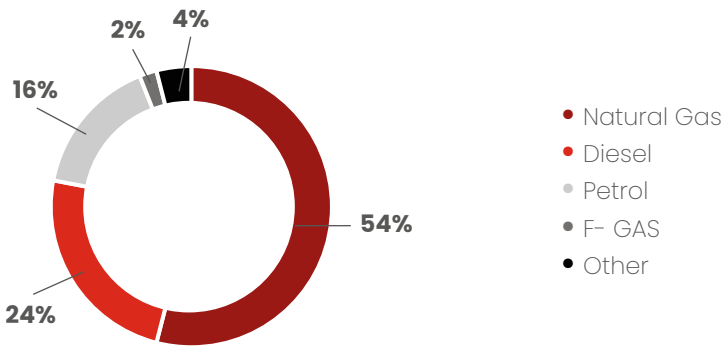
Our Emissions

Tenova Group has intensified its efforts toward the definition of a decarbonization pathway aimed at limiting its environmental impacts through the development of a structured **greenhouse gas emissions monitoring system**. In particular, during 2024 the Group took a significant first step by quantifying **Scope 1 and Scope 2 emissions** across all its operations[6]. Furthermore, Tenova Group is committed to progressively developing its emissions monitoring system to **include emissions** that occur in the **value chain: Scope 3 emissions**.

Scope 1 emissions include emissions considered as direct, deriving from the combustion of **sources owned or controlled by the Group** for activities such as heating and vehicle use. In particular, in 2024 Scope 1 emissions amounted to **1,836 tCO_2e**, with **59%** originating from **stationary assets**, such as offices, plants, or other fixed installations, and **41% from vehicles use**. The **primary sources** of emissions derive from the **use of natural gas** (54%), diesel (24%) and petrol (16%), while the residual part is due to F-GAS (2%) and other emissions (4%).

As previously mentioned, Scope 1 emissions are mainly attributable to energy consumption occurring in **production sites** and vehicle usage. Specifically, **Tenova S.p.A.** (Italy) represents the most impactful entity overall in terms of emissions (1,231 tCO_2eq), followed by **Tenova Advanced Technologies** (Israel) with 156 tCO_2eq emissions, entirely attributed to vehicle usage.

Scope 1 Emissions by Source (2024)

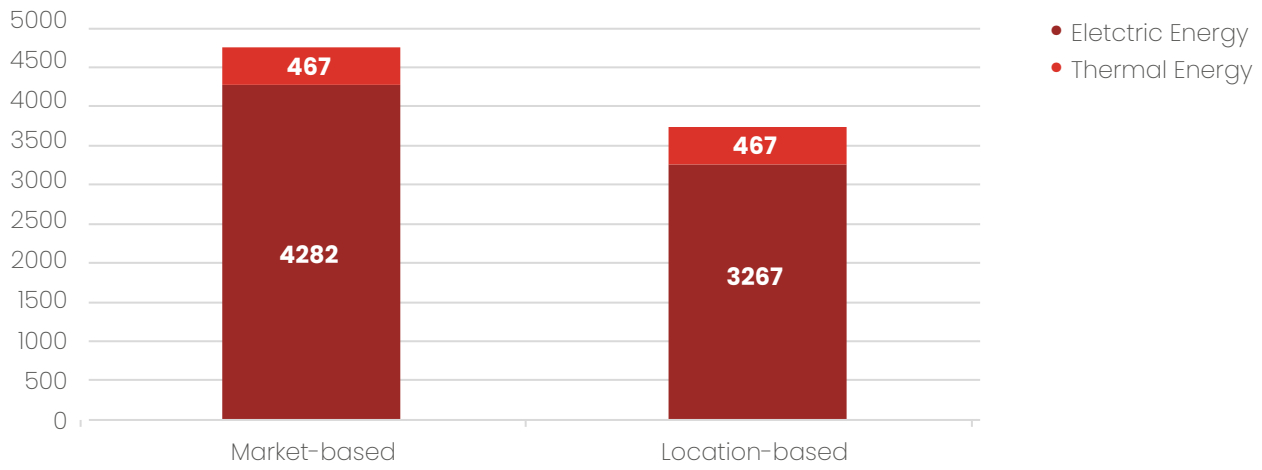


[6] For the Scope 1 and Scope 2 analysis, are included all the Companies within the Group that either hold utilities or own vehicles in their fleet.

Regarding **Scope 2 emissions**, deriving from the consumption of **electricity and heat purchased** from renewable or non-renewable sources, the analysis was conducted according to both **location[7] and market-based[8]** methodologies.

In 2024, Scope 2 emissions according to the **location-based** methodology amounted to **3,734 tCO_2e**, while those calculated using the **market-based** methodology totaled **4,749 tCO_2e**. Overall, energy needs are predominantly met through **non-renewable sources**, for which the main source of emissions is electric energy, followed by thermal energy.

Scope 2 emissions - market and location-based (2024)



The highest Scope 2 market-based contribution can be attributed to Tenova's main production site in **Castellanza**, with **1,192 tCO_2e**. Therefore, Italy represents the country with the highest Scope 2 market-based emissions (1,550 tCO_2e). Germany and India, which host TAKRAF's production sites, are among the top-emitting countries of operations, respectively with **931 tCO_2e** and **845 tCO_2e**.

Alongside our commitment to monitoring and disclosing energy consumption and emissions, we have also implemented concrete actions to actively reduce our energy footprint.

Since **2018**, we have been operating an **energy monitoring system** at our **most energy-intensive site** in **Castellanza** and established a working group focused on reducing energy and gas consumption across our Italian operations. In **2024**, we took **further steps**: we replaced traditional lighting with LEDs across various sites, mitigated HCFC (Hydrochlorofluorocarbon) leaks, promoted smart working to cut transportation emissions, and approved energy-efficient renovations. In Castellanza we completed the renovation works on the Avancorpo building, while we expect the Crono building to be completed by 2027. Looking ahead, we invested in a **980 kWp photovoltaic system on the 9,000 sqm roof of our Pomini workshop**. Operational since September 2023, the system includes 1,781 high-efficiency monocrystalline panels and **generated 1,010,000 kWh in 2024**, exceeding expectations. Around **84% of this energy is self-consumed**, helping reduce our carbon footprint and powering key processes like roll grinding. The solar field is set to power the electrolyzer, which will be used to divide hydrogen from water, allowing its use for industrial applications, further reducing the impact of this green source. We are also considering sustainable building approaches as we renovate older facilities, particularly at our Castellanza site.

[7] Location-based methodology: emissions calculation using the average electricity generation mix of the local grid where the energy is consumed, regardless of the company's procurement choices.
[8] Market-based methodology: emission calculation based on the company's energy procurement choices, such as contracts with renewable energy suppliers or green energy certificates.

We are steadily progressing on this journey, with our latest initiatives reflecting a tangible step forward in reducing our environmental footprint:

- **Pomini's New Compressor:** A new **Industry 4.0 compressor** is expected to cut **energy consumption for compressed air production**. Thanks to this innovation, we expect to register a 40% boost in energy efficiency for compressed air production in the Castellanza workshop.

- **Hydrogen Electrolyzer:** In 2024, we completed the construction site for an **H2 electrolyzer** for research and development activities (which is fed, in particular during the weekend, by production surpluses from the photovoltaic plant).

- **Energy Task Force (Castellanza):** We have created a **permanent working group on energy efficiency**, led by our QHSE Coordinator, together with the Operations Manager of the Pomini Workshop and Maintenance Managers of the workshop and offices. The group holds monthly meetings and develops specific projects.

- **Electric Vehicle Charging:** In 2024, we delivered 33 MWh to our Castellanza **charging stations for electric and hybrid cars**.

- **Photovoltaic Plant:** In 2025, building on the successful energy savings of 2024, we will launch the **second phase of development of our photovoltaic plant** on the roof of Pomini's workshop in Castellanza. An additional 880 kW system with improved thermal insulation is expected to further reduce heating needs.

- **Officina BIO:** In the first months of 2025, we intend to replace the synthetic **oils in use at the Pomini workshop, as much as possible with oils of vegetable origin**. Currently, both our PDT and cooling circuits of the Innse-Berardi milling machine use oils of vegetable origin.

- **Smart LED lighting at TAKRAF (Germany):** We have installed **LED lights** equipped with **daylight and movement sensors** that automatically regulate light activation, allowing **savings of up to 70% in electricity consumption**.

In addition to efforts to optimize energy consumption and reduce emissions, Tenova Group is committed to the **efficient management of other environmental resources**. Although these do not represent a material topic due to their limited use within the company's core business, the Group promotes initiatives and projects aimed at their **efficient and responsible use**. In particular, we recognize **water** as a vital and increasingly scarce resource, and therefore adopt **responsible management** practices aimed at limiting its use wherever possible. At the same time, we pursue strategies to **minimize waste** across our operations.

Our approach to **water management** is fully aligned with applicable environmental regulations and guided by **principles of sustainability and conservation**.

At our Castellanza site, for example, water is withdrawn from an on-site well to load the fire tank that feeds hydrants, to irrigate landscaped areas, and load hydraulic power units to test roll grinders. If water is mixed with oil or other solvents, it is discharged temporarily into a tank and subsequently disposed of as wastewater, following regulatory guidelines. For our Genoa and Castellanza sites, water for daily employee use is withdrawn from the aqueduct and discharged into the sewer. Water withdrawn from wells and discharged water quality are monitored through chemical analysis on an annual basis. Wastewater is monitored through chemical analysis every six months. Data is shared with management every year.

Additionally, we have installed water refilling stations and offer reusable, dishwasher-safe cups to encourage the use of reusable bottles over single-use plastic ones.

Over in India, TAKRAF's plants are equipped with **rainwater harvesting facilities**, so as to capture and store this precious resource during rainy seasons. Additionally, plastic water bottles have been replaced with reusable and recyclable glass bottles to reduce plastic consumption.

Waste management is also a key area of focus for Tenova Group within its broader environmental and sustainability strategies. Our approach is based on responsibility, efficiency, and **full compliance with all applicable local laws and regulations**, ensuring that all waste generated by our activities is managed in a safe, traceable, and environmentally sustainable way.

Given that most of our operations are located in office buildings, with only a few small-scale manufacturing sites, **the majority of the waste we produce is non-hazardous**. However, in cases where industrial waste is generated, it is handled by authorized and specialized third-parties that ensure proper treatment and disposal.

In line with our commitment to **a circular economy** and reduction of environmental impact, we continuously **seek innovative solutions to minimize waste generation** at the source. We actively promote the reuse of materials within our processes whenever technically feasible and foster a **culture of recycling** among our employees and collaborators. At TAKRAF sites, we aim to **reduce the amount of waste sent to landfills** by encouraging practices that extend the lifecycle of materials and lessen the overall environmental footprint. In parallel, at Tenova, we have **increased** the number of **waste collection points** in our office locations. We also compact our waste to reduce its overall volume. Moreover, we are currently exploring ways to improve the separation of waste types. Looking ahead, we aim to conduct in-depth research on our waste pathways downstream to further improve our diversion rate.

Our **People**

Empowering our employees and reinforcing mutual trust with all our stakeholders

An average of **18 hours of training** per employeee

83% response rate to our 2024 **Employee Opinion Survey**

TAKRAF **Women in Mining** communication campaign

At Tenova Group, we believe that our people are the foundation of everything we do. They are the driving force behind our innovation, the engine of our daily operations, and the embodiment of the values that define us. It is thanks to our people that we are recognized as a global leader in sustainable technologies and engineering solutions for the metals and mining industries.[9]

Therefore, we are deeply committed to **protecting, nurturing, and empowering our workforce**, aiming to create an environment where our people can feel safe, valued, and able to focus on what truly matters: each one's personal and professional growth.

Our workforce consists of **2,516 employees** as of December 31st, 2024, of which 1,535 are employed at Tenova and 981 at TAKRAF, distributed across 33 locations in 18 countries and 5 continents. As we strongly believe in the quality and security of employment, a solid **88%** of our employees are employed under **permanent work contracts**. Furthermore, where **collective bargaining agreements** are in place, we adopt them in our contracts: 38% of our employees are under collective bargaining agreements, such as the *Contratto Collettivo Metalmeccanico* in Italy, the Union Agreement for Trade in Austria, and the *Tarifvertrag Metall and Elektroindustrie NRW* in Germany.

Our approach values long-term collaboration; thus, we count a relatively small number of **non-employee** workers.

[9] Tenova East Europe LLC (Tenova's subsidiary based in Russian Federation) is currently not integrated into centralized monitoring initiatives. Thus, it is not included in this Report

We want **our people to grow and thrive in Tenova Group**, so we ensure they have the best opportunities to develop skills, while safeguarding their well-being. This goal is not only a matter of responsibility but also a strategic choice to stay competitive in a rapidly-evolving sector.

In particular, we focus on four main areas:

Occupational health and safety - ensuring a secure and healthy work environment for workers in all areas.

Talent - investing in employees' growth through training, upskilling, and career opportunities.

Diversity, equity and inclusion - fostering a culture of inclusion and where differences are valued.

Benefits and well-being - providing concrete support through welfare, benefits, and initiatives.

Occupational **Health** and **Safety**

Safety is a fundamental value at Tenova Group. We are deeply committed to ensuring the well-being of our people and all those we interact with, through our **"Safety First"** approach. This approach is deeply embedded in our culture and operations: in practice, it means maintaining a strong focus on **prevention and awareness in all matters related to health and safety**, making it a **core element** of our activities across all roles, functions, and entities within the Group.

Regardless of the location of operations or the local regulatory requirements, **Tenova Group consistently applies**, and wherever possible, exceeds **regulatory requirements** and promotes industry best practices.

The Group is strongly committed to maintaining and continuously improving its **Health, Safety, and Environment (HSE) management system**, which encompasses all employees and operational processes, including the design, manufacturing, and commissioning of plants, equipment, and auxiliary machinery. In this regard, at the Castellanza site, we organize **monthly safety meetings** involving workshop operations. The workers' representative from the workshop participates to monitor planned and ongoing actions and report any situations requiring intervention. This strong focus is institutionalized in the two policies that guide health and safety across the organization: **Tenova's HSE (Health, Safety, and Environment) Policy and TAKRAF's QHSE Policy (Quality, Health, Safety, and Environment)**.
A key part of the "Safety First" approach is the gradual extension of **ISO 45001 - Occupational health and safety management systems** certification, internationally recognized as a standard for occupational health and safety, across **all our sites**.

Currently, the Group holds this certification for its **Castellanza and Genoa** sites in Italy for the metals business. On the mining side, TAKRAF sites in **Germany** (Leipzig and Lauchhammer), **South Africa** and **Australia** are certified under ISO 45001, with the **Indian** site in Chennai joining in 2024. To support this effort, we **regularly measure and review** our Health and Safety **performance** through **audits and inspections** to ensure the system remains effective, up-to-date, and continuously evolving.

In some countries, our subsidiaries have developed **additional H&S management systems or procedures** to ensure complete coverage of their specific regulations and risk scenarios. For example, **Tenova Goodfellow Inc.** developed a **Health & Safety Manual** which outlines the responsibilities of the employer and workers, and which is guided by the regulations set forth in the (OHSA) Occupational Health and Safety Act, R.S.O. 1990 of the Province of Ontario. This legal entity, via the Joint Health and Safety Committee, conducts **monthly office/plant workplace inspections** to ascertain work-related hazards, assess risks, and to offer recommendations to management for the remediation and resolution of any real and perceived hazards.
To further strengthen its HSE framework, Tenova Metals maintains a **permanent Health and Safety Working Group** at the Pomini plant in Castellanza. This group meets monthly to review illness and injury data, evaluate new regulations, propose updates to company policy, and conduct routine audits to assess and improve existing safety standards.

In 2024, the Group recorded a total of **13 work-related injuries, with only 2 classified as high-consequence** events[10]. While these figures reflect a generally stable safety performance, the Group remains firmly committed to **continuous improvement,** with ongoing efforts to foster a **culture of prevention and care** across all operations.

We believe that real impact comes when procedures are fully understood and embraced by our people. Therefore, we hold training sessions, specifically for new hires, and encourage active participation in health and safety initiatives to ensure these principles are shared and applied across the Group.

Some of our branches in multiple countries have carried out **mandatory training initiatives** tailored to the needs of their employees or their particular operational context. In Italy, all new Tenova S.p.A. employees are required to complete a **mandatory two-hour safety induction course**, along with **additional role-specific training** where applicable. To foster a culture of safety, we regularly organize additional training sessions and provide all employees with a set of **Basic Safety Rules** to guide daily operations. In **Austria**, we conducted one day of first aid courses, and one day on "Safe handling of chemicals". In Canada, the plant-specific training includes: safety at heights and fall protection; ladder safety; lockout/tagout; first aid training; noise and& hearing conservation, and personal protective equipment (PPE). In **South Africa**, training extends to encompass specific training in firefighting and first aid. In the **USA**, training includes fall protection, electrical safety, bloodborne pathogens, and machine guarding.

[10] The main types of injuries recorded have been the following: crushed fingers, falls from height, knee rotations, and sprains

At **TAKRAF** and **DELKOR's Global Manufacturing Hub** facilities in Germany and India, a proactive approach is embedded in daily operations through initiatives such as regular **safety training, orientation for new joiners, and emergency drills**. Key safety controls include mandatory **PPE usage, Toolbox Talks**, and implementation of **LOTO** (Lock Out/Tag Out) **procedures** for maintenance activities. Additional measures focus on **handling safety, hazardous material management**, and **risk assessment** across all processes. The engagement of management and workers in safety committees, along with the reporting of **64 risk observations and 4 near misses**, reflects a strong culture of continuous improvement and accountability in occupational health and safety.

Furthermore, **Tenova Group is actively engaged in a variety of tangible initiatives throughout the year to promote a strong safety culture**. At the local level, we participate in programs such as Italia Loves Sicurezza, a national Italian movement committed to protecting health and safety in the workplace. Tenova S.p.A. supports the initiative through a network of internal ambassadors and organizes awareness-raising activities in conjunction with the **World Day for Safety and Health at Work**, promoted by the International Labour Organization and the United Nations.

World Safety Day

Since 2015, both Tenova and TAKRAF have hosted an annual Safety Day held on the **World Day for Safety and Health at Work** (April 28). Safety represents one of the core commitments of the company and permeates every activity and project, with the aim of safeguarding the health and integrity of all employees and stakeholders collaborating with us. This is why safety is at the heart of Tenova Group's culture, with the motto **Safety First**, as well as of our technologies, with what we call **Safety by Design**.

On May 15, 2024, we held the tenth edition of our **Tenova Safety Day at our Castellanza** campus in collaboration with Humanitas (the medical partner of the Techint Group). The event was attended by over **400 employees,** both in person and online. In 2024, the focus was on **sleep disorders**, featuring a webinar with two medical professionals who helped raise awareness among our employees on how to take better care of their sleep health.

On April 28, 2024, at **TAKRAF**, we observed World Day for Safety and Health at Work by hosting a variety of initiatives in different countries. In **Germany,** we hosted a digital lecture on the importance of **safety and health awareness**, key actions and processes, with an insight into safety protocols during maintenance activities at projects in West Africa. At our German sites in Leipzig and Lauchhammer—where many employees work both in office roles and in the Product & Service Center—specific training sessions were held, including a bicycle safety course and a forklift operation class. In **South Africa**, our focus this year was on continuous improvement of **near-miss reporting** through a targeted safety campaign.

Furthermore, we strive to adopt a consistent approach across entities. For this purpose, for our metals business we distribute the **Tenova Project Site Safety Rules booklet** throughout our offices, and for mining business we adopt the **HSE Guidelines for Working on TAKRAF Construction Sites**, to maintain uniform standards across the board and further enhance safety awareness across the workforce. Our employees are encouraged and empowered to stop work whenever unsafe conditions arise, and to **report safety concerns**, either anonymously or directly to their managers.

Every reported incident is thoroughly investigated, with root causes identified and corrective actions implemented. We routinely conduct comprehensive risk assessments of all work sites and activities. Considering the Group's **core business activities**, which primarily take place **within office environments**, workplace **hazards** that pose a risk of **serious injury** are **not particularly widespread**. However, the following main categories of risks have been identified, especially at our plants: confined spaces, fire/explosion, moving tools, falling loads/material instability, falls from height, chemicals, plant equipment (electrical and pressurized), manual handling of loads, uneven floors/surfaces, and hand/foot crushing. This assessment is carried out by both internal members and qualified external consultants, such as certified *LAT (Laboratori di Taratura Accreditati)* laboratories in Italy, and includes on-site inspections and employee interviews to identify potential hazards. At our Castellanza and Genoa locations, a **company doctor** is present on-site to support risk assessments and coordinate annual health screenings. Based on inputs from these activities, we define key action points, which for the sites holding an ISO 45001 certification are reviewed during **regular audits** conducted by accredited IRCA (International Register for Certified Auditors) professionals.

Progress in health and safety is built on **active feedback and transparency**. Every **report or concern** raised is promptly **recorded, ensuring that issues are addressed and tracked**. Regular reporting to stakeholders further reinforces this commitment, promoting accountability and a culture where **continuous improvement is a shared responsibility**.

Diversity, **Equity**, and **Inclusion**

At Tenova Group, we consider diversity as a driver for innovation, resilience, and creativity, and we are constantly working toward a more just and inclusive environment. We believe that diversity enhances our capacity to innovate and adapt. That's why we are committed to fostering an inclusive and equitable workplace where every employee feels respected and treated fairly - regardless of gender, religion, ethnicity, nationality, age, sexual orientation, or disability.
Full compliance is our starting point: we strictly follow local and national laws on equal employment opportunities in every country we operate in. While we universally hold values related to fairness and equal opportunity, as stated in our **Code of Conduct**, we understand that respecting diversity means avoiding a one-size-fits-all approach. Thus, we **tailor our diversity and inclusion programs** by country, considering specific, regional **socio-historical contexts**. We want to foster inclusiveness and equality for all our people, keeping in mind the challenges and injustices that women, different social categories and minorities can be subjected to. For example, in India, we maintain a committee working to create awareness against sexual harassment and fostering a safer work environment for female employees.

Our commitment to diversity begins at the **earliest stages** of the employee journey, starting with a **recruitment process** designed to attract and consider candidates from diverse backgrounds. In particular, the Group works to **enhance gender diversity** across its workforce. Industries such as steel, mining, and metals have been **traditionally male-dominated**. An analysis of 66 global companies in these sectors revealed that women represented only between 3% and 29% of the workforce, and for steel production the data is 15%[1]. This underrepresentation stems from numerous complex factors, including social perceptions about working in a sector which has not been historically welcoming towards women professionals, and the broader absence of women in STEM (Science, Technology, Engineering, and Mathematics) academic pathways, especially in graduate and post-graduate degrees. This figure is largely unchanged over the past decade.

As of 2024, the average age of employees is 44.7 years, while **women constitute approximately 17% of our workforce**, in line with the sector average.

When it comes to challenging preconceptions and driving meaningful change, we believe that we are **stronger when we are together**; thus, to achieve real progress and benchmark our progress against our peers, we often participate in conferences organized by the **Association for Iron & Steel Technology (AIST) and the Society for Mining, Metallurgy and Exploration (SME)**. These events provide valuable insights into the development of young professionals and women in the global steel industry, offering practical tools and strategies to effectively address diversity challenges and foster an inclusive workplace.

[1] For further information on the subject of women in the metals and mining business, please visit www.responsiblesteel.org

To support our diverse employees and communities, we hold regular **events and campaigns** to educate and engage employees on diversity, inclusion, and equal opportunities. Since launching our first awareness campaign in honor of the **International Day for the Elimination of Violence Against Women** in 2021, Tenova has continued to foster a culture of engagement and inclusion year on year. In 2024, the campaign took on new strength under the motto **"Raise a Hand: Make a Stand"** encouraging employees worldwide to actively participate by leaving a red handprint, personalized or signed, as a visible statement of support across our offices.

In parallel, TAKRAF promotes female empowerment within the mining sector through its ongoing campaign **"Women in Mining"**, featuring interviews and stories on the intranet, website, LinkedIn, and mining publications to highlight the importance of women in the company and the mining industry[12]. Moreover, some of TAKRAF subsidiaries have introduced local initiatives on equality, such as TAKRAF South Africa's adherence to the **Broad-Based Black Economic Empowerment (B-BBEE)** policy, which addresses gender, diversity, and age in compliance with South African legislation.

Despite our efforts to promote diversity, equity, and inclusion, in 2024, a **single case of discrimination was reported** at Tenova's South African branch. The incident was promptly **identified**, **officially recorded and reviewed**, and has been **resolved** as per our internal procedures. For us, transparency and accountability are essential for continuous improvement. This case served as a **learning opportunity for the entire Group**, reinforcing our commitment to prevent these accidents and strengthening our ability to manage them effectively should they arise. Every challenge can be seen as a chance to do better: we remain dedicated to fostering a respectful, inclusive, and safe working environment for all.

Talent

In order for Tenova to succeed as a Group, our employees must be able to learn the necessary skills in an industry that is constantly evolving. We pride ourselves on providing a supportive work environment where employees can grow and develop in their careers while promoting inclusive local employment practices to generate high value in the territories in which we operate.

Empowering People Through Training and Career Development

Learning is the foundation of our progress. We upskill and reskill our employees through on-the-job training, cultural exposure, and education to **meet the evolving needs** of our business and employees. Our initiatives are designed to **enhance professional competencies** by fostering a **digital mindset**, enabling all to adapt to innovation and **contribute actively to the Group's goals**.

Tenova Group encourages an **open and participatory environment** where employees are actively involved in **shaping learning courses** to foster a relevant and inclusive experience.

At Tenova, in 2024, our Training & Development function carried an inclusive learning strategy by providing every employee with access to curated digital content through the dedicated module **My Learning** on the **HR Platform**.

This approach aimed at boosting key competencies needed to face the complexity and new trends of the evolving industry landscape. The broader course also responds to feedback from the 2023 Global Employee Opinion Survey, where a demand for more structured and accessible learning pathways emerged.

Training activities in 2024 focused on the following areas:

Cybersecurity awareness - with our new mandatory Cybersecurity awareness course provided through our dedicated platform, further described in the Compliance and Ethics chapter.

Technical topics - from steelmaking and rare earths to financial administration, reporting, people management and digitalization, we are continuously investing in improving the technical knowledge of our employees to ensure that we maintain a consistent standard of excellence in the metallurgical and mining industries and to meet the needs of an ever-changing marketplace.

Health and Safety - our Health and Safety training prepares our people to identify, evaluate, mitigate, and, wherever possible, eliminate safety risks. Newly hired employees in Italy are required to complete a mandatory two-hour safety induction course, along with additional role-specific training where applicable. H&S training initiatives are further described in the Occupational Health and Safety Chapter.

Diversity and inclusion - with courses on workplace violence and harassment prevention.

Some of our programs include:

INTERNSHIPS

We offer internship opportunities worldwide to undergraduate and postgraduate students, allowing them to gain valuable hands-on experience. Moreover, we collaborate with local high schools for school-work rotation initiatives in every office, in particular in Italy, where tens of students are involved every year. Interns can gain hard and soft skills by interacting with Tenova employees. In addition, TAKRAF Germany has an **apprenticeship program** to train students after school in the profession of a cutting machine operator at our Product & Service Center in Lauchhammer. In India, some students were offered an **intensive two-week internship** with DELKOR in 2024. This program is the first of its kind and was launched in collaboration with the Department of Mineral Processing at Vijayanagara Sri Krishnadevaraya University (VSKU).

T-READY

Launched in 2019, T-Ready is the Italian headquarters' initiative talent development program targeting recent graduates. The two-year program assigns new hires to a global Techint Group office for the first year and Tenova headquarters for the second. The participants follow a tailored individual development path supported by a dedicated tutor.

HIGH TECH PROGRAM

Our High-Tech Program is a two-year global internal training initiative designed for a select group of high-potential, talented junior professionals. The program focuses on developing managerial and business skills through hands-on learning and strategic exposure. During the program, participants work on an innovation or implementation project aimed at improving Tenova's processes, products, or overall business performance. At the conclusion of the two years, the final projects are presented to Tenova's top management.

TENOVA CORPORATE ACADEMY

We relaunched the **Tenova Corporate Academy**, streamlining its structure around four core training areas that reflect the strategic needs of the Group: institutional corporate guidelines, technical skills, managerial development, and language training. The Academy plays a central role in **equipping our people with the knowledge and tools** they need to thrive in an evolving business landscape. A key focus is to keep employees up to date with emerging trends in innovation, digitalization, sustainability, and process excellence. As part of this renewed approach, we introduced the **Tenova Leadership Lab**, a dynamic extension of the Tenova Corporate Academy designed to foster continuous learning across the organization. Each year, the Lab delivers two new online courses focused on trending or employee-requested topics, supporting the development of relevant skills in a flexible format. Since 2023, this initiative has also included a global in-person component, offering soft skills training sessions across Tenova offices, facilitated by the Academy.

Several **branches** hosted **training initiatives** specifically **tailored to the local needs** of their employees:

For the second consecutive year, our **Canada** branch served as a local hub for the Tenova Leadership Lab, organizing three soft-skill workshops focused on *Building Resilience in the Face of Stress, Collaborative Intelligence,* and *Time and Stress Management* for the management team.

In **China**, two workshops were held on Collaborative Intelligence and The Art of Leading People, reflecting the local team's interest in strengthening interpersonal leadership capabilities.

In the **United States**, the local branch hosted two workshops: Cross-cultural Communication and Change in Mentality and Collaborative Intelligence.

These sessions were particularly well-received by employees, sparking meaningful dialogue and offering valuable insights into the challenges and opportunities of working in a global, multicultural environment.

In 2024, the Group delivered at least **45,200 hours of training**, corresponding to an average of **18 hours per employee**. The **highest average** training hours per capita were recorded in areas where intensive upskilling programs were delivered for **newly hired employees**. As a matter of fact, Tenova Group displays **significant learning efforts** to ensure that **individuals are fully prepared** and sufficiently **confident** to take on their roles effectively.

At Tenova Group, **career development** is seen as a collaborative path **built together** with our people. It starts with listening to individual aspirations and continues through structured initiatives that support learning, development, and progression over time. An essential aspect of this approach is our **mentoring program**, which pairs **junior and senior employees** to bridge generational gaps, strengthen digital and technical capabilities, and foster stronger internal networks.

Furthermore, we have a **structured performance review system** in place that ensures regular performance and career development reviews for **2,290 employees**, namely 100% of TAKRAF staff and 91.1% of Tenova employees. These reviews are fundamental tools for **aligning individual goals with organizational priorities** since they are based both on **company-wide objectives and specific development parameters** agreed with each employee at the beginning of the year. This agreement allows for the identification of personalized growth and training opportunities and ensures continuous alignment throughout the employee's journey. At TAKRAF, local legal entities are responsible for managing the performance evaluation processes, but the process is currently under review to design a **global performance management program**.

Looking ahead, we are committed to further **integrating learning and development into the broader employee experience**, including the definition of a core curriculum tailored to each career stage, from onboarding to leadership development, ensuring that every employee has the right tools and guidance to realize their full potential.

Promoting Employment

The Group is fully aware of its dual role in society as both an employer and a driver of innovation, and is firmly committed to generating **positive impact in the communities it operates in**. This commitment is evident through our approach to hiring, aimed at minimizing heavy relocations and enhancing the integration of the company into local social and economic systems.

In 2024, Tenova Group **hired 275 new employees**, with a particular focus on technical positions and young professionals, reflecting its ongoing investment in the future of the industry, while employee **turnover was around 8%**.

To further support local recruitment and promote youth employment, the Group collaborates actively with **local universities** and industry **foundations**, which offer opportunities for training, professional networking, and talent acquisition. The Group participates regularly in **Career Fairs** at leading universities worldwide, typically twice a year, as part of its employer branding strategy to attract high-potential candidates. Among these, a long-standing relationship with the Politecnico di Milano supports various activities hosted at our Castellanza Campus, further strengthening our connection with the academic world.

Tenova's Digital Employee Experience

In 2024, we developed a project scheduled to go live in spring 2025 and which will affect all our employees: the Digital Employee Experience. This platform aims to replace our corporate intranet gradually, putting instead the employee at the center. Through this portal, our people can access a range of welfare services offered according to their role, in a user-friendly and accessible way.

Benefits and Well-being

Well-being is a way of working at Tenova Group: we believe it is a cornerstone to building a resilient and progressive organization. For us, attracting and retaining the right talent includes **creating a package of benefits that proves our commitment to creating an equitable and supportive workplace** - one that allows all our employees to collaborate effectively, feel part of a community, and thrive in line with our values.

This begins with a **competitive salary**. **Our compensation policy** ensures fair and consistent salary practices across all Group companies, in line with our commitment to meritocracy and internal equity. The **annual salary review** process is conducted **globally**, using standardized tools and procedures.

It takes into account factors such as **inflation rates, market benchmarks, individual performance, and the strategic relevance of roles**. Salary adjustments and merit increases are proposed within allocated budgets and approved through a structured governance process involving HR, business leaders, and corporate management. The process aims to retain key talent, reward high performers, and maintain a balanced pay structure across the organization.

A **variable compensation** component is included in our total reward structure, designed to reflect individual performance and the results of the annual performance review. The structure and application of this component may vary depending on the country and local practices, in alignment with applicable laws and collective agreements.

All full-time employees receive a full suite of standard benefits, in line with local standards in their country of residence. Tenova Group has always been sensitive to employees' benefits and well-being; therefore, we comply with local rules and follow **high well-being standards**. Employee well-being extends beyond a standard salary, which is why we offer employees **additional benefits and services** based on regional norms.

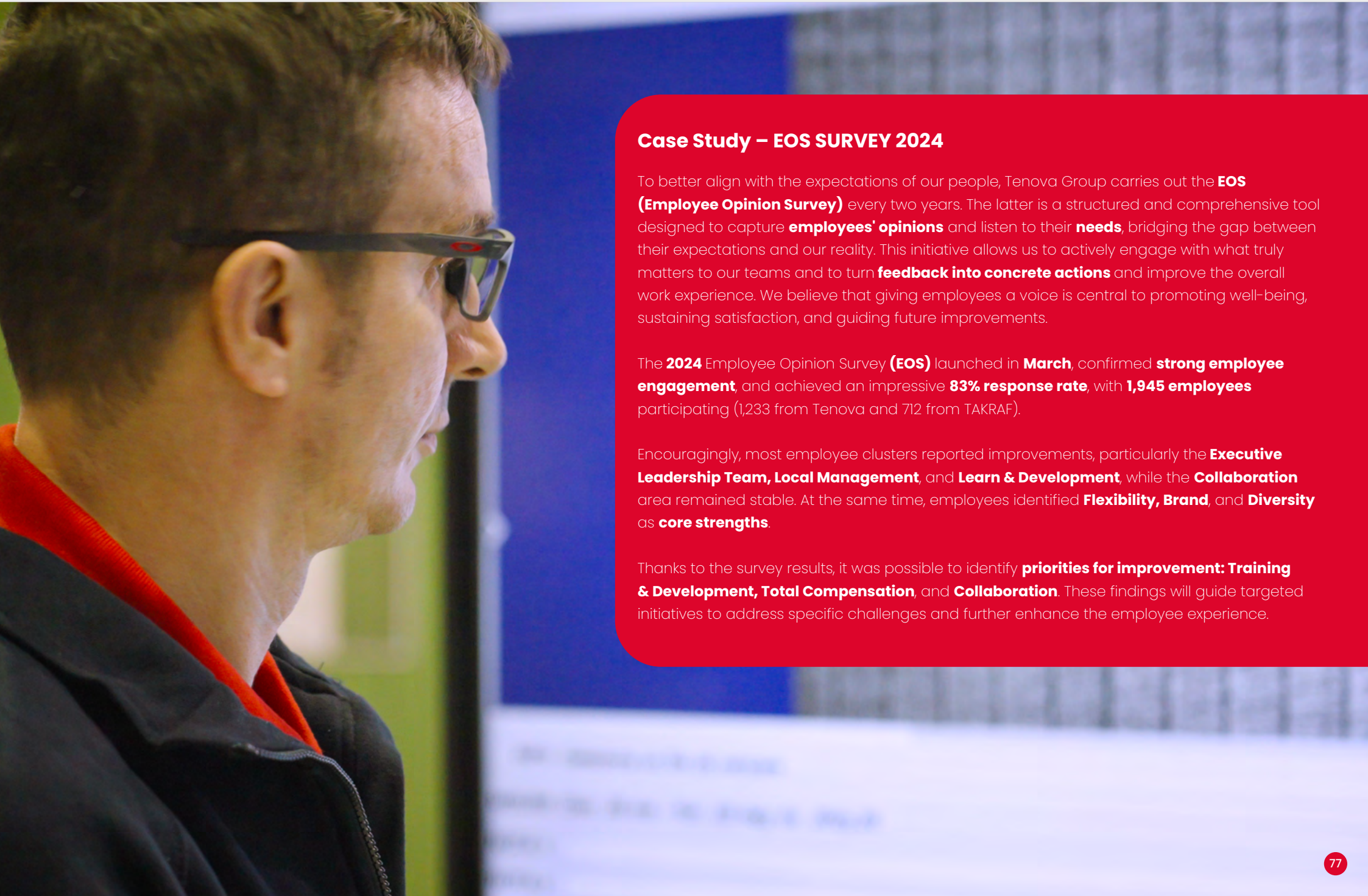
For example:

- We provide **educational support for employees' children** and supplemental life insurance, and counseling services.
- In **Italy**, we provide employees with access to a **campus gym** and **cafeteria**, shuttle **transport** to our offices, and annual flu **vaccinations**.
- As part of our corporate well-being initiatives, we provide top-tier **health insurance** for Tenova employees in **Italy**, and - in collaboration with our sister company Humanitas - a dedicated **plan of prevention** for our executives.
- In **India**, we subsidize **transport** to our campuses, and provide access to an on-campus **cafeteria**.
- In the **US**, we provide the **highest quality health insurance** and coverage for our employees. In **2024** we introduced inclusive **travel health insurance**. We also provide free access to the company **gym** and fresh fruit every day. To foster a sense of belonging, every Friday we have breakfast together in the library.
- In **Germany** and the **US**, we offer standing desks to support physical well-being, increase energy levels, and encourage movement.
- Wherever possible and compatible with their roles, in most of our countries of operation we continue to offer our employees up to two **work-from-home days** per week; this approach reflects our commitment to listening to the **evolving needs** of our people, especially in a post-Covid context, where **flexibility** has become the norm. We recognize that a better work-life balance and greater autonomy are important and we strive to offer solutions that support both individual well-being and team effectiveness.
- TAKRAF Australia supported "R U OK?", a national initiative dedicated to encouraging meaningful conversations about **mental health**.

The well-being of our employees is reflected above all by the working environment in which they carry out their daily activities, which must be pleasant and comfortable. Many of our offices, especially the newer ones, are modern and bright, with large open space areas, including kitchen and cooking spaces, which also encourage (in-)formal exchange among colleagues.

We believe that real well-being also stems from the health and the wealth of the communities in which our employees live. Thus, the Group has also mobilized to contribute to **positive social change**. This commitment is in line with our dedication to supporting health and well-being for all within and beyond our community. TAKRAF South Africa partnered with a local electricity supplier to donate soccer kits to eight schools in Mpumalanga, reinforcing our commitment to social inclusion and equal opportunities for children in underserved communities. In a similar spirit, we became the official sponsor of the F60 Triathlon in Lusatia, Germany, a region where TAKRAF has deep historical roots. The sixth edition of the event took place in September 2024 beneath the iconic F60 conveyor bridge, symbolizing our lasting bond with the local community and our belief in the unifying power of sport.

Although most of the Group's hires are made on a local basis, global mobility can be an important enrichment to community-based growth. By combining **workforce development** with inclusive and **ethical hiring practices**, Tenova Group creates long-term value for both the company and society, reinforcing its commitment to diversity, equity, and inclusion.



Case Study – EOS SURVEY 2024

To better align with the expectations of our people, Tenova Group carries out the **EOS (Employee Opinion Survey)** every two years. The latter is a structured and comprehensive tool designed to capture **employees' opinions** and listen to their **needs**, bridging the gap between their expectations and our reality. This initiative allows us to actively engage with what truly matters to our teams and to turn **feedback into concrete actions** and improve the overall work experience. We believe that giving employees a voice is central to promoting well-being, sustaining satisfaction, and guiding future improvements.

The **2024** Employee Opinion Survey **(EOS)** launched in **March**, confirmed **strong employee engagement**, and achieved an impressive **83% response rate**, with **1,945 employees** participating (1,233 from Tenova and 712 from TAKRAF).

Encouragingly, most employee clusters reported improvements, particularly the **Executive Leadership Team, Local Management**, and **Learn & Development**, while the **Collaboration** area remained stable. At the same time, employees identified **Flexibility, Brand**, and **Diversity** as **core strengths**.

Thanks to the survey results, it was possible to identify **priorities for improvement: Training & Development, Total Compensation**, and **Collaboration**. These findings will guide targeted initiatives to address specific challenges and further enhance the employee experience.

Our Commitment to **Transparent Governance**

Being transparent within our organization and with our stakeholders

Impact Materiality Assessment at Group level

72% of purchase budget spent **locally**

Revised **Tenova Group Code of Conduct** + Introduction of **Code of Conduct for Suppliers**

At Tenova Group, we believe in **leading by example**. We recognize that the leadership position we have earned in the global metals and mining industries comes with significant responsibilities. We aspire to be a **trustworthy partner** for our stakeholders and a driver for **exemplary behavior** within our industry. Aware of the **active role we play in the societies** where we operate, we are strongly committed to acting in compliance with local laws and regulations and promoting them in local communities[13]. Ultimately all our efforts to promote good corporate governance are aimed at protecting our most precious asset: **Tenova Group's healthy corporate culture**. This ambition is made tangible through comprehensive, far-reaching internal policies that govern both the behavior of our employees and our relationships with external stakeholders. This section illustrates **how transparency is embedded in our governance structure and policies**, which guide our people to act ethically and consistently with our company values every day.

[13] Tenova East Europe LLC (Tenova's subsidiary based in Russian Federation) is currently not integrated into centralized monitoring initiatives. Thus, it is not included in this Report.

Governance and ESG Management

Ethical governance at Tenova starts with **the highest governance bodies**. Their leadership and dedication to transparency shapes the Group's decisions, strengthening stakeholder trust.

The Tenova S.p.A.'s Board of Directors is composed of five members, with a combination of **executive and non-executive roles, selected** based on **shareholders' views**, who bring together a **range of technical and managerial skills** focused on relevant disciplines including HR, finance and accounting, business and markets. To ensure a strong and informed local presence across the local Tenova Group companies, **local Boards of Directors** are present and typically composed of the local business manager, the head of the relevant business unit and the local CFO.

Meanwhile, the **consistency of the overall vision** and alignment of the Group's activities with our values and mission are determined by the **Boards of Directors and the CEO**. In line with our transparency commitment, the **Chair of the Board** holds a **non-executive role**, ensuring independent oversight separate from operational management. For further information on the Board composition please refer to the Sustainability Performance – Board of Directors section (p. 105).

The Board of Directors - in its duty of **overseeing** the management of the **organization's impacts** on the related Compliance risks - is supported by the **Compliance Committee** and the **Supervisory Body** (Organismo di Vigilanza) as per Italian Legislative Decree n. 231/2001.

Sustainability is at the **heart of our business** and our values, and the Board of Directors plays a pivotal role in shaping, approving and updating the Group's strategies, policies, and goals in order to lead Tenova in its transformative journey toward a **more sustainable and responsible future**, both within the organization and as a **player within society**. In this regard, the impact materiality assessment conducted in 2024 enabled a step further in understanding Tenova Group's sustainable development.

We have **three management bodies** to sustain the Board in its duty of benchmarking and monitoring our progress to create goals and cascade accountability on sustainability matters across the organization:

- Our ten-member **Sustainability Steering Committee** devises our overall strategy on sustainability and sets our goals. It determines the right partners to achieve our goals and creates an action plan.

- The Steering Committee is supported by the **Sustainability Project Team** which manages projects created in the action plan, coordinates with relevant partners, monitors progress against KPIs, and keeps projects running on schedule.

- Finally, our **Operative Committee** communicates the strategy, goals, and action plan across the organization and cascades responsibility for projects to the appropriate groups within Tenova.

Progress on sustainability goals and actions is periodically shared with governance bodies by the relevant functions.

Stakeholder Engagement

At Tenova Group, we believe that **strong governance** is built not only on well-defined structures and procedures but also guided by a clear purpose and ability to actively listen to, engage with, and respond to the expectations of **our stakeholders**. Thus, a **constant and solid relationship** with all stakeholders is **fundamental** for the Group, **creating shared value**.

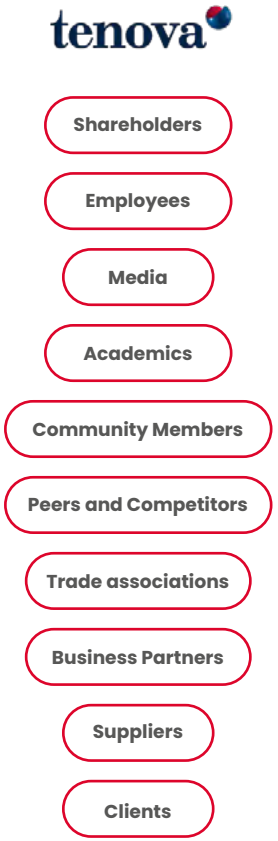
Stakeholder engagement activities stand at the **core of our strategy** and reflect our commitment to accountability, in an increasingly complex global context that requires a deep understanding of **stakeholders' shifting preferences** to predict risks and identify potential opportunities. Overall, engaging with our stakeholders ensures **alignment between the Group initiatives and their priorities**.

Our key stakeholders are **shareholders, employees, suppliers, clients, business partners, trade associations, peers, competitors, community members, academics**, and the **media**. We engage with our stakeholders through **direct outreach, events**, and by soliciting their feedback through **avenues like our materiality assessment**. Tenova Group prioritizes communication with its stakeholders by carefully considering their perspectives on how our business impacts them.

As active players shaping the current landscape of the metals and mining industries, both Tenova and TAKRAF are engaged with **key industry and business associations**. Tenova is a member of the executive board committee of several prominent global organizations, such as the Clean Steel Partnership (**CSP**) and the Association for Iron and Steel Technology (**AIST**), covering advanced manufacturing, combustion, iron and steel technology, and clean steel initiatives. Furthermore, in Italy we are part of the National Cluster "Fabbrica Intelligente" (**CFI**), the Italian Section of the Combustion Institute (**ASICI**), and the Italian Association for Metallurgy (**AIM**). These memberships allow us to collaborate with industry leaders, promote sustainability and ESG priorities, and drive technological innovation.

Similarly, TAKRAF participates in influential business and economic groups such as, at a German level, the Industrie-und Handelskammer (**IHK**) and the Industrie- und Handelskammer (**IHK**) and, at a global level, the Internationaler Wirtschaftssenat (**IVF**), which offer strategic platforms for networking, economic cooperation, and business growth in regional and international markets.

In **2024**, as part of our stakeholder engagement activities, we also carried out a specific initiative directly linked to this Report: the engagement of both **internal and external stakeholders** to identify the **impact Tenova has on its stakeholder ecosystem**. This activity, already described in the previous section "Stakeholders' contribution to our Materiality assessment", provided **essential input to our materiality assessment** and, thus, to the definition of our sustainability priorities.



For further information on Tenova's stakeholder engagement practices, please refer to the section "Stakeholder Engagement" in the Appendix.

Compliance and Ethics

Ethical conduct is a key component of our success, both as a Group operating in the metals and mining industries, and as people in a thriving company.

Our sector is highly regulated and Tenova is fully committed to **complying with all applicable laws and regulations at the local, regional, and national levels**. This section guides us through the key documents that shape the Group's rules and behavior (i.e., the Code of Conduct and the Anti-Bribery Policy) and the organizational structures that support their implementation. Furthermore, we also present the mechanisms that guarantee transparency and compliance with the above-mentioned laws and principles, such as our **whistleblowing channel** and the **Organization, Management and Control Model** in accordance with the requirements of Italian Legislative Decree 231/2001.

As part of our ongoing commitment to fair and transparent business practices, in 2017, we joined the **Metals Technology Initiative (MTI)**, the **anti-corruption collective action** for the metals technology industry. Hosted by the Basel Institute on Governance, MTI provides a collaborative forum for members to develop anti-corruption compliance practices and safeguard fair competition. MTI members pledge to prohibit bribery, maintain robust internal control systems, compete fairly in the market, address key ethical risks in the industry, and share best practices. Through this initiative, we strengthen our commitment to integrity as a pillar of sustainable growth.

Ethics and Integrity Structure

At Tenova Group, we recognize that maintaining **high ethical standards** requires a **robust governance framework** that defines clear roles, responsibilities, and accountability at every organizational level.

Management is the main body in charge of building an **efficient internal control system** aimed at ensuring consistent compliance with applicable laws, rules, and regulations, our Code of Conduct, and policies and procedures. Specifically, the **internal control system** is overseen by the **Compliance Committee** and operates to reinforce the existing compliance-oriented corporate culture. The system consists of a set of principles, rules and procedures designed to guarantee efficient and effective management of all business processes. All our employees and Board Members have access to our policies and procedures available on our internal channels. Our **Compliance Department** supports the Group, participating in the **definition** of the system's **processes** and **controls**, while our **Internal Audit Department** provides independent, objective analysis aimed at monitoring **internal control system design** and **effectiveness**.

Codes of Conduct

In 2024, Tenova Group revised its **Code of Conduct**, which defines principles and standards of integrity and transparency that must be complied by everyone in the Group. Our Code of Conduct outlines our expectations for employee behavior, guaranteeing ethical and responsible conduct company-wide. This includes appropriate interactions with clients, suppliers, and third parties in general, as well as rules against any type of discrimination, and more. **All employees are required to accept our Code of Conduct** at the end of the recruitment and hiring process, as well as periodically during campaigns aimed at reinforcing awareness of the Code and its principles. **TAKRAF**, which fully complies with the Tenova Group Code of Conduct, is currently working on a **company-wide version of the document**, to add procedures and insights tailored to its specific activities and countries of operation. This approach reflects the importance of ensuring that the Code remains as **relevant and applicable** as possible to the **company's actual context**.

In addition to the revision of the Code of Conduct for employees, in 2024 Tenova Group introduced a dedicated **Code of Conduct for Suppliers**. By establishing common rules for both internal teams and external partners, Tenova ensures that suppliers uphold the same standards, making adherence to the Code a key factor in supplier management and evaluation.

Our **Tenova Anti-Bribery Policy** outlines the values, principles, and responsibilities that we adopt to fight corruption. We additionally comply with the OECD Anti-Bribery Convention, the UN Convention Against Corruption, the U.S. Foreign Corrupt Practices Act, the UK 2010 Bribery Act, and Italian Legislative Decree 231/2001.

The Tenova Group Code of Conduct **defines** a real or potential **conflict of interest** as any situation in which an employee's relationship with a third party could influence, or appear to influence, Tenova Group's interests or those of its stakeholders. In such cases, employees are required to prioritize the Group's interests over any personal gain that might benefit themselves, their relatives, or closely associated individuals. This applies to all dealings with customers, suppliers, contractors, competitors, and colleagues. To preserve transparency and integrity, it is mandatory that any actual or potential conflicts of interest are promptly **disclosed in writing** according to Tenova Group's internal policies and procedures. Furthermore, all new hires are currently required to declare any conflict of interest when they are onboarded.

During 2024, **1,051** of our employees attended **mandatory anti-corruption training**. **In particular**, TAKRAF launched a new global online course on anti-corruption, which was rolled out to all employees, achieving a **97% attendance rate**, with only a few absences due to maternity or sick leave. As for Tenova, the training initiative was focused on the **Legislative Decree 231/2001** and the related Organization, Management and Control Model and specifically targeted newly hired Italian employees.

Human Rights

At Tenova Group, we fully commit to compliance with laws and regulations about human rights and respect for workers' rights; we encourage our companies and local subsidiaries to contribute to this effort by adopting additional, company-wide policies and procedures on these matters.

TAKRAF's Employment and Human Rights Policy shares this commitment by establishing principles on **labor rights** such as fair remunerations and work conditions, fair and equal treatment, inclusion and diversity, risks of forced and child labor, modern slavery, and human trafficking. The policy **extends to all TAKRAF's employees, suppliers, and contractors worldwide**, and adheres to international standards based on good industry practices, including the Universal Declaration of Human Rights; the International Covenant on Civil and Political Rights; the International Covenant on Economic, Social and Cultural Rights; the International Labour Organization's (ILO) Declaration on Fundamental Principles and Rights at Work. Furthermore, on a local basis, we enforce specific policies: for example, DELKOR India has adopted an **Equal Employment & Non-Discrimination Policy**, and TAKRAF South Africa has an **Employment Equity Policy**.

Voicing Integrity

To **ensure** that all **employees** and stakeholders can **raise concerns** or address issues of conduct and gain a comprehensive understanding of the reported situation, Tenova has established mechanisms for reporting unlawful or unethical behavior. The existent whistleblowing system allows employees and external stakeholders to report any suspected misconduct, violations of company policies, or unethical behavior. All reports received by Tenova are handled according to the whistleblowing procedure and the Privacy Policy ensuring confidentiality and data protection.

In addition, TAKRAF has **a dedicated webpage** where it is possible for employees or external parties to report non-compliance, ensuring the availability of channels through clear policies and processes for handling grievances and complaints.

The Group will **revise the Whistleblowing Procedure in the first quarter of 2025** to ensure to ensure it remains fully up to date, aligned with international best practices.

A robust governance framework, transparent procedures, and reliable reporting mechanisms ensured a consistent **zero reported cases of corruption also in 2024**, reflecting our ongoing commitment to integrity.

Protecting your Data - Data Privacy and Cybersecurity

In an increasingly digital and deeply connected world, where **personal data is a valuable asset**, Tenova Group has woven **privacy protection and cybersecurity** into our operational fabric. Beyond compliance, our goal is to ensure a relationship of trust with all our stakeholders.

Protecting the data of our employees, customers, and partners and securing our infrastructure from cyberattacks is a top priority for the Group. We adhere to the strictest data protection regulations set by the countries where we operate, including the EU's **General Data Protection Regulation (GDPR)**. To oversee and coordinate our data protection strategy, we have appointed a **Data Protection Officer (DPO)**, who ensures company-wide compliance and is the main contact for privacy-related matters. Furthermore, the Group chooses to invest in secure technologies and internal awareness through dedicated training on the importance of protecting data. Ensuring the best level of privacy for those who visit our website is fundamental. To be as transparent as possible about how we treat the data we collect, we clearly outline how we handle personal information in our **Privacy Policy**, specifying the type of data we collect, how we process it, the measures we take to protect it, and the rights of the individuals whose data we treat.

We have several **policies aimed at mitigating cyber risk**, including a mobile device management policy, an access control policy, and a security incident procedure. With a forward-looking approach and goal of remaining at the forefront of cybersecurity in the coming years, we have developed a **Cybersecurity Roadmap** to steer our initiatives, define key safeguards, and identify emerging threats. At Tenova Group, our approach to cyber risk is comprehensive and proactive, addressing all dimensions of cybersecurity to ensure the availability, integrity, and confidentiality of information, while protecting our strategic know-how. To support this vision, we have adopted **SIEM (Security Information and Event Management)** and **SOC (Security Operations Center)** technologies:

- **SIEM** enables us to **collect, correlate, and analyze security data** from across our IT infrastructure in real time. It helps detect anomalies, flag suspicious behavior, and generate alerts for potential threats—before they can cause harm.
- **SOC** is our dedicated team of cybersecurity professionals who **monitor, investigate, and respond to these alerts 24/7**. SOC ensures that every incident is assessed and addressed promptly, minimizing risk and downtime.

Together, SIEM and SOC empower Tenova to **identify, assess, and react to cyber threats swiftly and effectively**, reinforcing our resilience against evolving attack vectors. In addition, we have implemented a **DLP (Data Loss Prevention)** solution to further protect our intellectual property. DLP tools monitor and control the movement of sensitive data—such as proprietary designs, engineering processes, and strategic documents—ensuring that Tenova's know-how remains secure and is not accidentally or maliciously leaked outside the organization.

In December 2024, **Tenova approved its first policy dedicated to the responsible and secure use of artificial intelligence tools** by its personnel[14]. While recognizing the potential of AI technologies to improve efficiency and productivity, the policy also acknowledges the associated risks, such as the generation of inaccurate content and the exposure of sensitive data. Our core principles to align AI use with the company's values and Code of Conduct are:

1. No Use of Sensitive Information in Generic AI Tools: Personnel and third parties are strictly prohibited from inputting any sensitive or confidential information into non-approved AI tools. Contractual provisions must reflect this obligation for third parties.
2. Mandatory Human Review: AI-generated content must be reviewed for accuracy, completeness, and compliance with intellectual property and ethical standards. Users are fully responsible for any content generated with AI tools.
3. Opting Out of AI Training: Users must opt out of allowing AI tools to use Tenova data for training purposes whenever possible.
4. Information Security Compliance: All use of AI tools must align with Tenova's information security procedures.
5. Adherence to Code of Conduct: All AI-related activities must respect the company's principles regarding data privacy, confidentiality, and intellectual property.

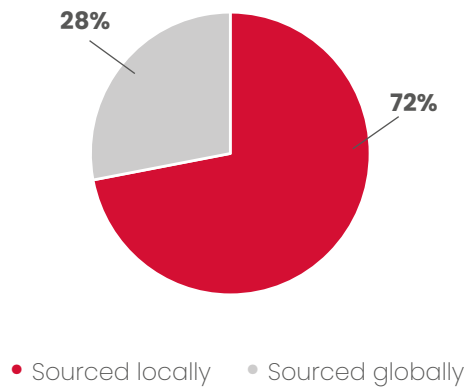
During the year, we developed a platform to **support cyber security awareness**, providing an awareness **course to all Tenova employees** on an ongoing basis starting with new hires for whom it is mandatory. The platform also allows us to monitor the level reached by our employees in terms of awareness through **fake phishing campaigns**. Fake phishing is a common practice that allows us to both measure the level of awareness reached by Tenova personnel and train them through fake phishing attacks targeted on our organization.

[14]The Tenova AI policy is applicable to Tenova S.p.A. and its subsidiaries ("Tenova Group"), with the exclusion of TAKRAF GmbH and its subsidiaries ("TAKRAF Group").

Our Supply Chain

Tenova Group operates on a global scale with an **international supply chain spanning five continents**. We ensure **full compliance with procurement regulations in all countries we operate** or conduct business in and expect our suppliers and partners to adhere to all applicable laws and regulations. Our operations are global but at the same time we are strongly focused on the impact we generate locally. We recognize the importance of job creation and contribution to employment as drivers of communities' growth. Thus, **in 2024, 72% of Tenova Group's purchases were sourced locally**[15], namely in the same country where our legal entities operate, preferring local contractors and suppliers. This local approach positively and directly impacts the territories that host and support our operations.

Tenova Group purchases



Our sourcing strategy is built on two main pillars: **strategic sourcing and supply chain risk management**. Strategic sourcing focuses on bringing procurement closer to our customers and establishing long-term contracts for high-volume, critical components. In parallel, supply chain risk management aims to diversify sources for key materials, strengthen due diligence on existing suppliers, and take proactive measures in logistics and transport optimization.

As a Group, we recognize that **ESG risks are key drivers of financial risks**. To mitigate supply chain risks, we decided to integrate **ESG criteria into our supplier selection process**. Our supplier engagement strategy integrates risk management and sustainability considerations through comprehensive **screening, evaluation, and pre-qualification procedures**. The Group's supply chain is committed to being fully aligned with international **best practices of sustainable supply chain management**, particularly in connection with ESG. Our goal is to develop a network of suppliers committed to minimizing the environmental impact of their activities through responsible use of resources, smart transport planning, reduced waste and emissions, and safe handling of hazardous substances. We also expect our suppliers to uphold high social and labor standards, both internally and across their supply chains, and to fully enforce a robust Code of Conduct.

Specifically, once basic information, core business, and financial data are assessed, suppliers are subject to a second evaluation stage. This includes a **positive screening** based on **questionnaires** addressing quality, environment, health, and safety practices within their operations and across their value chain. To achieve its supply chain goals, the Group applies differentiated supplier assessment questionnaires. The questionnaire for **Tenova**'s suppliers places particular emphasis on **QHSE (Quality, Health, Safety, and Environment)** aspects, evaluating elements such as the supplier's management system, HSE organization, quality control plans, traceability, injury statistics, risk assessments, environmental protection measures, and alignment with Tenova's corporate procedures. All Tenova Metals procurement processes are outlined in our **Procurement Corporate Procedure**.

[15] The reported percentage does not include the legal entity LOI Poland Spolka z.o.o., as the purchasing data were not yet fully integrated into the management system, which has caused difficulties in retrieving the relevant information.

TAKRAF's assessment is structured around five key areas: Supply Chain Management, Corporate Social Responsibility, Health & Safety Management System, Sustainability (including emissions and environmental impact), and Quality Management System. These tools ensure that suppliers meet the Group's standards for both risk mitigation and sustainability performance.

The introduction of an **ESG screening** marked an **important step** in implementing the **Sustainable Supply Chain Roadmap**, launched by Tenova in 2022, which defines long-term objectives and continuous improvement efforts. The roadmap sets goals and annually determines actionable steps to enhance our supply chain with best practices regarding ESG performance.

In 2023, we drafted the **Sustainable SC Program** to better define the objectives that would guide us towards 2027 and established our **Performance Monitoring System**. In 2024, we continued to assign positive evaluations to candidate suppliers based on their certifications and ESG qualifications; those who have been positively rated and qualified have consequently been **trained** on ESG topics, and finally **audited** and shortlisted.

2024

- Preparation of **Tenova Sustainable SC Program**
- **CBAM training** for qualified suppliers
- **Audit** of shortlisted suppliers

2025

- **CBAM set-up** for 2026 EU-CBAM definitive regime
- Selected and qualified **suppliers ESG rating tests**
- Rated, audited and trained **suppliers list extension**

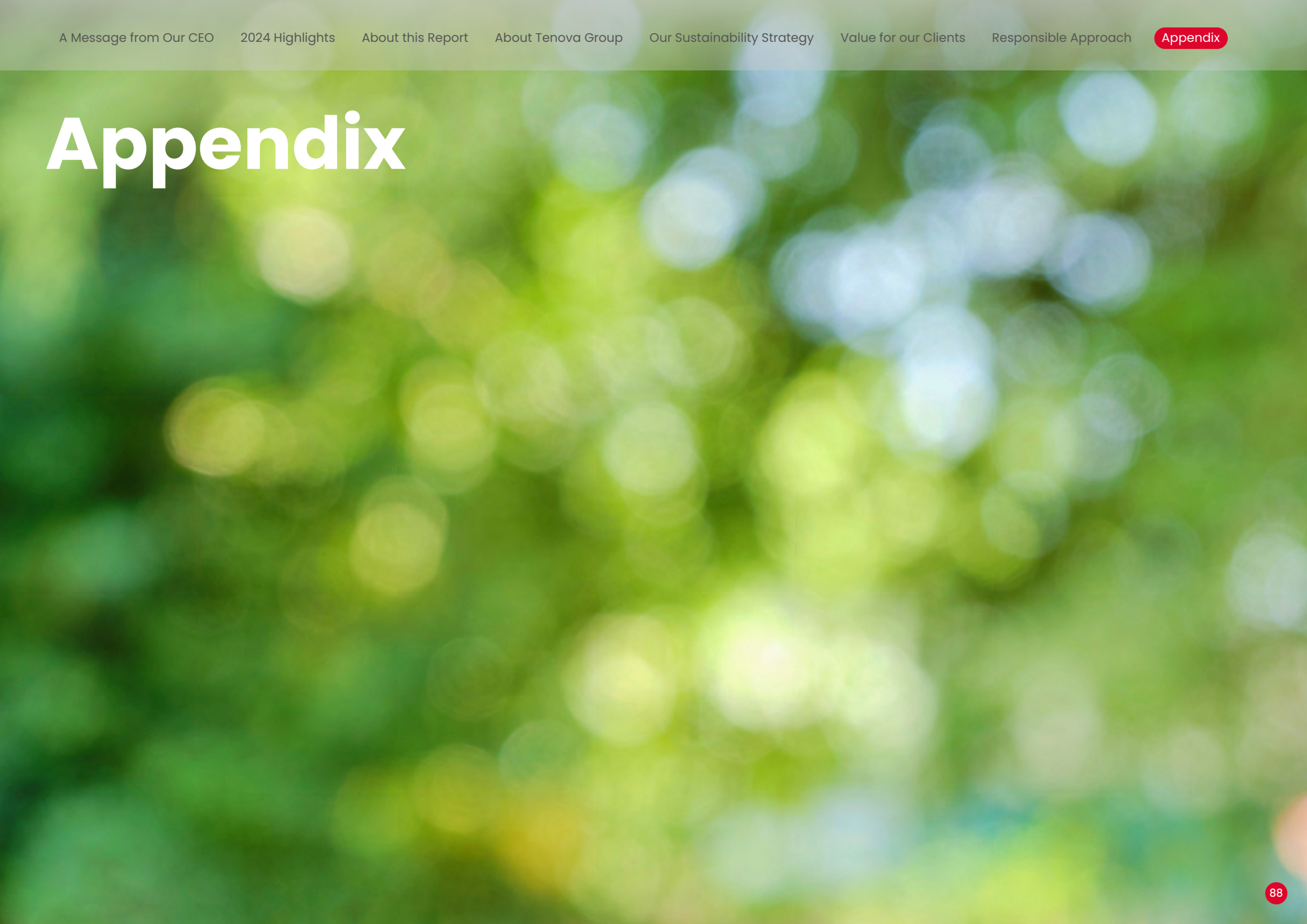
2026

- Awarding of bids weighting **ESG Rating**
- **Suppliers' performance monitoring AI System** (specific algorithm use)

2027

- **CBAM** strategies adopted **compliance check** against the Regulation
- Finalization procedure for bid awarding also based on ESG rating
- Integration of **Supplier Portal: Qualification and Bidding Module**
- Awarding of bids weighting **ESG Rating**

Appendix



2022-2024
R&D&I Focus Areas and SDGs

R&D AREA and SDGs	
Energy Transition	
Local Environment	
Process Flexibility/Efficiency (Opex)	
Raw materials / Residual valorization	
Safety	
Quality of final product	

Our stakeholder **engagement activities in 2024**

A constant and solid relationship with all our stakeholders is fundamental for us and for the creation of shared value. For this reason, we dialogue and collaborate with our stakeholders through several engagement activities. The following table shows a map of our main engagement activities carried out in 2024.

Stakeholders	Tenova	TAKRAF
Employees	• Internal Audit for review of processes and procedures (including follow-up related to audit engagements) • Onboarding programs for new hires • Introduction to internal policies such as Code of Conduct for new hires • Career paths: job fairs, online webinars, assessments • Company intranet • Compliance training on specific procedures/processes/systems/tools • Regular Town Hall Meetings to communicate on company performance, general issues and an opportunity for a Q&A session • Well-being partnership (Humanitas Mater Domini Hospital) and initiatives for Tenova's employees' families i.e. Scholarships for Tenova employees' children (Italy), Christmas presents for employee children under 12 (Italy) • AIST (Iron & Steel Technology) Foundation: a non-profit organization which represents a network of steel knowledge and expertise, constituted of 16,000 members from more than 70 countries • Employee Opinion Survey 2024 • Tenova Leadership Lab • Performance review • Whistleblowing system • Long service awards	• Country specific onboarding processes • Introduction to internal policies and procedures • Company intranet • Compliance training on specific procedures/ processes/systems/tools • Employee survey • Town Hall meetings • Job fairs and collaboration with local universities • Performance reviews and meetings • Health and Safety committees • Whistle-blowing platform • Exit interviews • Internal social media – Microsoft Teams • Long service awards • Well-being and access to mental health organizations • Internal mobility and career pathway dialogues
Suppliers	• Daily business interactions • Cooperation to develop and improve the main technological equipment for digital texturing • Involved in the Supplier Questionnaire • Code of Conduct for Suppliers • Seasonal and annual training • Ethics and Compliance page on the Tenova website • Compliance due diligence on specific categories of suppliers • HSE qualification process includes the utilization of the SCRM portal for the upload and verification of qualification documents which are then validated trough a scoring system (from 1 to 6) • Whistleblowing system	• Daily business interactions • Face to face and virtual meetings with suppliers • Supplier qualification process • Supplier audits and site visits • Supplier questionnaire • Cooperation agreements with key suppliers • Code of conduct • Whistle-blowing platform • Joint innovation and improvement initiatives

Stakeholders	Tenova	TAKRAF
Customers	• Identification and development of joint projects • Participation in working groups • Project collaboration • Employee well-being and development partnerships • Papers and publication • Whistleblowing system	• Daily business interactions • Face to face and virtual meetings with customers • Industry specific expos and conferences • Whistle-blowing platform • Identification and development of joint projects • Project collaboration
Peers	• MTI (Metals Technology Initiative)	• Industry specific expos and conferences • Interaction on projects
Industry associations	• Active participation in roundtables discussion • Exchange best practices • Annual meetings • WEB conferences • Co-develop training/learning programs • Definition of initiatives or projects in collaboration • Confindustria Varese and Assolombarda - in-depth discussion of specific topics	• Industry specific expos and conferences • International Economic Council (IWS - Internationaler Wirtschaftssenat) membership in Germany • Chairman on the Technical Committee on Bulk Material Conveyor Technology of the Association of German Engineers (VDI - Vereins Deutscher Ingenieure)
NGOs	• Open dialogue and specific initiatives with local relevant stakeholders	• Open dialogue and specific initiatives with local relevant stakeholders
Academia	• Training programs • Osservatorio PoliMi • Job fairs webinars • Lectures • Innovation events • Company presentation at universities and high schools • Trainee opportunities • AIST Steel Intern Scholarships (participating as evaluators)	• Job fairs and collaboration with local universities • Apprenticeship, internship and trainee programs • Collaboration and research with multiple universities • Technical advisory role
Regulatory bodies/ Government	• Open dialogue • Institutional meetings • Participation in projects of public utility	• Open dialogue • Institutional meetings

ESG topics and impact scope

The table below presents the results of the impact materiality assessment, listing the most significant sustainability impacts of Tenova Group[16]:

ESG Topic	Related Impact	Impact Description	Own operation / Value Chain	Tenova's Framework
Energy	Energy consumption (own operation)	Energy consumption from renewable and non-renewable sources, with negative consequences on the environment and reduction of the energy stock.	Own operations	WE BUILD TRUST
	Energy consumption (value chain)	Energy consumption from renewable and non-renewable sources, with negative consequences on the environment and reduction of the energy stock.	Value chain	WE BUILD TRUST
Climate change mitigation	Direct and indirect GHG emissions generation (Scope 1 and 2)	Generation of direct and indirect climate-changing energy emissions related to the activities carried out at the Group's offices and sites (e.g. operation of production plants).	Own operations	WE BUILD TRUST
	Indirect GHG emissions generation (Scope 3)	Generation of climate-changing emissions produced in the value chain as a result of the activities carried out (e.g. production and transport of the materials used, sale and transport of the final product).	Value chain	WE BUILD TRUST
Pollution of air	Emission of pollutants into the atmosphere (Upstream - Downstream)	Release of pollutant emissions into the atmosphere in the value chain, with a negative impact on air quality and ecosystems, including human and animal health, such as sulphur oxides (SOx), nitrogen oxides (NOx) and, in particular, particulate matter (PM), volatile organic compounds (VOCs) and carbon monoxide (CO).	Value chain	WE BUILD TRUST
Water	Water consumption (Value Chain)	Water consumption in own production processes (processing materials, cleaning, rinsing, cooling) and along the supply chain. Poorly managed consumption of water for own operations can lead to a reduction in local water reserves, increasing the risk of drought and compromising ecological habitats.	Value chain	WE BUILD TRUST

[16] With regard to the impacts of the value chain, it was not possible to collect complete data at this stage. However, as a preliminary step, an initial assessment has been conducted to identify and estimate relevant aspects. In the coming years, the Group aims to structure its monitoring system to progressively include these data, with the goal of providing a more comprehensive picture of its ESG performance.

ESG Topic	Related Impact	Impact Description	Own operation / Value Chain	Tenova's Framework
Resource inflows, including resource use	R&D - raw materials	Investments in R&D for the development of products that require fewer raw materials and raw materials with a lower environmental impact.	Own operations	WE TRANSFORM BUSINESS
	Depletion of natural resources	Use of natural resources with consequent reduction in their availability.	Value chain	WE BUILD TRUST
Resources outflows related to products and services	R&D - circular economy	Investments in R&D for the development of technologies that will lower impact throughout the entire life cycle of product use, particularly the usage phase, but also disposal.	Own operation, Value chain	WE TRANSFORM BUSINESS
Waste	Waste generation	Hazardous and non-hazardous waste generation resulting in negative environmental effects.	Value chain	WE BUILD TRUST
Working conditions	Inadequate remuneration	Failure to comply with wage agreements or workers' expectations, in terms of inadequate remuneration of employees and contractors.	Own operations	WE BUILD TRUST
	Meeting employee expectations in terms of well-being	Adoption of well-being practices (e.g. flexible working hours) that meet employee expectations, with consequent impacts in terms of employee satisfaction.	Own operations	WE BUILD TRUST
	H&S incidents at work	Accidents in the workplace, with negative consequences for the health of direct workers or external collaborators.	Own operations	WE BUILD TRUST
Equal treatment and opportunities for all	Incidents of workplace discrimination against the workforce	Incidents of discrimination (related to gender, age, ethnicity, etc.), violence, or other non-inclusive practices against the workforce, which may affect the allocation of responsibilities, compensation, and career advancement.	Own operations	WE BUILD TRUST
	Development and enhancement of workers' skills through training activities	Improvement of workers' skills and digital mind-set through training and professional development activities, general and technical programs, also linked to growth objectives and personalized evaluation (e.g. career development plans).	Own operations	WE BUILD TRUST
Other work-related rights	Breach and loss of workforce data	Poor cybersecurity management and failure to apply data management best practices at the expense of the privacy of the workforce.	Own operations	WE BUILD TRUST

ESG Topic	Related Impact	Impact Description	Own operation / Value Chain	Tenova's Framework
Communities' economic, social and cultural rights	Job creation and contribution to employment	Contribution to the development of professional opportunities and hiring workers from the local communities in which the Group operates, with positive impacts on local economies.	Own operations	WE BUILD TRUST
Personal safety of consumers and/or end-users	R&D - quality and safety	Development of new technologies to make the product increasingly safe and follow the highest possible quality standards, with positive impacts for clients and end-users.	Own operations	WE TRANSFORM BUSINESS
Corporate culture	Creating a culture of sustainability and business ethics	Awareness and dissemination of the culture of sustainability, ethics, equity, and inclusion, and respect for human rights among employees (i. e through ESG-linked remuneration) , business partners (i.e. leveraging demand), and other stakeholders.	Own operations	WE ACT TRANSPARENTLY
	Regulatory compliance	Non-compliance with applicable laws, regulations, internal and external standards, resulting in a potential negative impact on stakeholders.	Own operation, Value chain	WE ACT TRANSPARENTLY
Protection of whistle-blowers	Incidents of retaliation against whistle-blowers	Episodes of retaliation on those who report illegal or incorrect behavior, commissive or omissive.	Own operations	WE ACT TRANSPARENTLY
Management of relationships with suppliers including payment practices	Inadequate management of supplier relationships with regard to sustainability issues	Inadequate management of relationships with suppliers, which does not take into account the impacts on sustainability issues generated by them endorse and contribute to such impacts.	Own operations	WE ACT TRANSPARENTLY
Corruption and bribery	Corruption training	Increased employee awareness of corruption-related issues, thanks to the provision of training.	Own operations	WE ACT TRANSPARENTLY
	Incidents of corruption and anti-competitive practices	Anti-competitive behaviour, monopolistic practices, episodes of corruption with negative impacts on the economy and markets.	Own operation, Value chain	WE ACT TRANSPARENTLY
Innovation and digital transformation	Technological innovation of processes and products	Positive impacts on people and economic systems generated by process and product technological innovations and digitalization linked to research and development activities.	Own operations	WE TRANSFORM BUSINESS

Our Sustainability **Performance**

Our Environmental Impact

Energy consumption
GRI 302-1 *Energy consumption within the organization*

Energy consumption within the organization (2024)			
	Uom	**Total**	**Total in GJ[17]**
Fuel Consumption from Non-renewable Sources			**125,930**
Fuels used for productive purposes			**28,467**
Natural gas	m3	482,165	27,638
Diesel	litres	23,358	829
Fuels used for fleet vehicles owned by the organization or long-term leased (only company use)			**97,463**
Diesel	litres	939,981	33,351
HVO	litres	926,029	32,973
Petrol	litres	964,359	31,137
LNG	litres	84	2
Electricity Consumption			**23,647**
Electricity Purchased	**kWh**	**5,719,997**	**20,592**
Purchased electricity from Non-renewable sources	kWh	5,627,392	20,259
Purchased electricity from Renewable sources	kWh	92,605	333
Self-generated electricity consumed from Renewable sources	**kWh**	**848,700**	**3,055**
Total Electricity self-generated from renewable sources	kWh	1,010,000	3,636
Self-produced electricity sold from renewable sources	kWh	161,300	581
Steam consumption	**kWh**	**2,111,772**	**7,602**
Total energy consumption			**157,179**

[17] In order to quantify energy consumption, Tenova Group used the following conversion factors to calculate GJ: *2024 UK Government GHG Conversion Factors for Company Reporting (DEFRA).*

Our Emissions
GRI 305-1 *Direct (Scope 1) GHG emissions* and
GRI 305-2 *Energy indirect (Scope 2) GHG emissions*

GHG Emissions (Scope 1 and Scope 2) (2024)		
	Unit of measure	**Total**
Scope 1 GHG emissions[18]	tCO_2e	1,836
Scope 2 GHG emissions – Location-based[19]	tCO_2e	3,734
Scope 2 GHG emissions – Market-based[20]	tCO_2e	4,749

[18] In order to quantify **Scope 1** emissions, Tenova Group used the following emission factors to calculate tCO_2e: 2024 UK Government GHG Conversion Factors for Company Reporting (DEFRA).
[19] In order to quantify **Scope 2 Location-based** emissions, Tenova Group used the following emission factors to calculate tCO_2e: AIB - European Supplier Mixes (2023), Australian National Greenhouse Accounts Factors, United States Environmental Protection Agency (EPA), IGES 2025, National Inventory Report 1990 –2021: Greenhouse Gas Sources and Sinks in Canada, Terna 2019.
[20] In order to quantify **Scope 2 Market-based** emissions, Tenova Group used the following emission factors to calculate tCO_2e: AIB - European Residual Mixes (2023), Australian National Greenhouse Accounts Factors, United States Environmental Protection Agency (EPA), IGES 2025 National Inventory Report 1990 –2021: Greenhouse Gas Sources and Sinks in Canada, Terna 2019.

Our People

GRI 2-7 *Employees*

Employees per type of contract, gender and region (as of 31st December, 2024)								
Region	**Gender**	**Permanent**	**Temporary**	**Seasonal**	**Full-time**	**Part-time**	**Non-guaranteed hours**	**Total**
Africa	Women	34	-	-	34	-	-	**34**
	Men	104	-	-	104	-	-	**104**
	Total	**138**	**-**	**-**	**138**	**-**	**-**	**138**
Asia	Women	96	13	-	109	-	-	**109**
	Men	616	32	-	646	2	-	**648**
	Total	**712**	**45**	**-**	**755**	**2**	**-**	**757**
Europe	Women	145	65	-	190	20	-	**210**
	Men	717	196	-	892	21	-	**913**
	Total	**862**	**261**	**-**	**1,082**	**41**	**-**	**1,123**
North America	Women	22	-	-	22	-	-	**22**
	Men	158	-	-	155	3	-	**158**
	Total	**180**	**-**	**-**	**177**	**3**	**-**	**180**
Oceania	Women	8	-	-	8	-	-	**8**
	Men	34	-	-	34	-	-	**34**
	Total	**42**	**-**	**-**	**42**	**-**	**-**	**42**
South America	Women	48	1	-	49	-	-	**49**
	Men	225	2	-	227	-	-	**227**
	Total	**273**	**3**	**-**	**276**	**-**	**-**	**276**
Total	**Women**	**353**	**79**	**-**	**412**	**20**	**-**	**432**
	Men	**1,854**	**230**	**-**	**2,058**	**26**	**-**	**2,084**
	Total	**2,207**	**309**	**-**	**2,470**	**46**	**-**	**2,516**

GRI 2-8 *Workers who are not employees*[21]

Workers who are not employees per professional category and gender (as of 31st December, 2024)			
Professional Category	**Women**	**Men**	**Total**
Agency workers	11	35	**46**
Interns/Trainees	2	9	**11**
Sales agents	-	2	**2**
Other	-	6	**6**
Total	**13**	**52**	**65**

Occupational Health and Safety
GRI 403-9 *Work-related injuries*

Work-related injuries - Group's employees (2024)	
Number of injuries	**2024**
Total number of fatalities as a result of work-related injury;	-
Total number of high-consequence work-related injuries	2
Total number of recordable work-related injuries	13
Temporal data	**2024**
Hours worked[22]	3,886,282
Multiplier for calculation	1,000,000
Rates	**2024**
Rate of fatalities as a result of work-related injury;	-
Rate of high-consequence work-related injuries (excluding fatalities);	0.51
Rate of recordable work-related injuries;	3.35

[21] The number of workers who are not employees does not include the contractors working with the Italian sites of Castellanza, Genova and Treviolo, as the current monitoring system only monitors categories such as interns and temporary workers. However, efforts are underway to enhance data collection and reporting capabilities on this subject.
[22] TAKRAF only registered worked hours for operational employees. Where precise data was not available, estimates were made using the best methodologies available. The average estimated hours were calculated with reference to data provided by the OECD (Source: OECD Data Explorer • Average annual hours actually worked per worker).

Diversity, Equity and Inclusion

GRI 405-1 *Diversity of governance bodies and employees*

Employees per category and gender (percentage) (as of 31st December, 2024)			
Professional Category	**Women**	**Men**	**Total**
Executives	4.7%	95.3%	**1.7%**
Managers	11.0%	89.0%	**11.6%**
Employees	19.7%	80.3%	**80.2%**
Workers and intermediates	0.6%	99.4%	**6.5%**
Total	**17.2%**	**82.8%**	**100.0%**

Employees per category and age group (percentage) (as of 31st December, 2024)				
Professional Category	**<30 years**	**30-50 years**	**>50 years**	**Total**
Executives	0.0%	25.6%	74.4%	**1.7%**
Managers	2.3%	49.3%	50.3%	**11.6%**
Employees	13.0%	57.6%	29.4%	**80.2%**
Workers and intermediates	12.0%	54.9%	33.5%	**6.5%**
Total	**11.2%**	**55.9%**	**32.9%**	**100.0%**

Talent

GRI 401-1 *New employee hires and employee turnover*

New Hires (2024)					
Region	**Gender**	**<30 years old**	**30-50 years old**	**>50 years old**	**Total**
Africa	Women	-	2	1	**3**
	Men	2	10	-	**12**
	Total	2	12	1	**15**
Asia	Women	5	4	-	**9**
	Men	36	37	6	**79**
	Total	41	41	6	**88**
Europe	Women	8	8	1	**17**
	Men	28	39	17	**84**
	Total	36	47	18	**101**
North America	Women	1	1	-	**2**
	Men	6	6	1	**13**
	Total	7	7	1	**15**
Oceania	Women	-	1	-	**1**
	Men	-	5	5	**10**
	Total	-	6	5	**11**
South America	Women	5	5	1	**11**
	Men	8	22	4	**34**
	Total	13	27	5	**45**
Total	**Women**	**19**	**21**	**3**	**43**
	Men	**80**	**119**	**33**	**232**
	Total	**99**	**140**	**36**	**275**

Rate of New Hires (percentage) (2024)					
Region	**Gender**	**<30 years old**	**30-50 years old**	**>50 years old**	**Total**
Africa	Women	0.0%	4.0%	4.8%	**3.9%**
	Men	100.0%	25.6%	0.0%	**19.4%**
	Total	28.6%	13.5%	2.4%	**10.9%**
Asia	Women	38.5%	5.6%	0.0%	**8.3%**
	Men	57.1%	8.4%	4.1%	**12.2%**
	Total	53.9%	8.0%	3.6%	**11.6%**
Europe	Women	19.0%	5.4%	0.7%	**5.2%**
	Men	39.4%	9.1%	5.7%	**10.5%**
	Total	31.9%	8.1%	4.2%	**9.0%**
North America	Women	100.0%	10.0%	0.0%	**9.1%**
	Men	33.3%	8.1%	1.5%	**8.2%**
	Total	36.8%	8.3%	1.3%	**8.3%**
Oceania	Women	0.0%	16.7%	0.0%	**12.5%**
	Men	0.0%	20.0%	6,5%	**29.4%**
	Total	0.0%	19.4%	50.0%	**26.2%**
South America	Women	38.5%	19.2%	10.0%	**22.4%**
	Men	16.0%	19.1%	6.5%	**15.0%**
	Total	20.6%	19.1%	6.9%	**16.3%**
Total	**Women**	**25.7%**	**6.7%**	**1.5%**	**7.3%**
	Men	**39.0%**	**10.6%**	**5.5%**	**12.0%**
	Total	**35.5%**	**9.8%**	**4.5%**	**10.9%**

Terminations (2024)					
Region	**Gender**	**<30 years old**	**30-50 years old**	**>50 years old**	**Total**
Africa	Women	-	4	1	**5**
	Men	-	11	8	**19**
	Total	-	15	9	**24**
Asia	Women	-	9	3	**12**
	Men	6	37	8	**51**
	Total	6	46	11	**63**
Europe	Women	1	10	3	**14**
	Men	9	19	21	**49**
	Total	10	29	24	**63**
North America	Women	2	1	1	**4**
	Men	5	4	8	**17**
	Total	7	5	9	**21**
Oceania	Women	-	1	-	**1**
	Men	-	11	5	**16**
	Total	-	12	5	**17**
South America	Women	2	4	-	**6**
	Men	3	9	11	**23**
	Total	5	13	11	**29**
Total	**Women**	**5**	**29**	**8**	**42**
	Men	**23**	**91**	**61**	**175**
	Total	**28**	**120**	**69**	**217**

Rate of Termination (percentage) (2024)					
Region	**Gender**	**<30 years old**	**30-50 years old**	**>50 years old**	**Total**
Africa	Women	0.0%	8.0%	4.8%	**6.6%**
	Men	0.0%	28.2%	38.1%	**30.6%**
	Total	0.0%	16.9%	21.4%	**17.4%**
Asia	Women	0.0%	12.5%	12.5%	**11.0%**
	Men	9.5%	8.4%	5.5%	**7.9%**
	Total	7.9%	9.0%	6.5%	**8.3%**
Europe	Women	2.4%	6.7%	2.2%	**4.3%**
	Men	12.7%	4.4%	7.1%	**6.1%**
	Total	8.8%	5.0%	5.6%	**5.6%**
North America	Women	200.0%	10.0%	9.1%	**18.2%**
	Men	27.8%	5.4%	12.1%	**10.8%**
	Total	36.8%	6.0%	11.7%	**11.7%**
Oceania	Women	0.0%	16.7%	0.0%	**12.5%**
	Men	0.0%	44.0%	62.5%	**47.1%**
	Total	0.0%	38.7%	50.0%	**40.5%**
South America	Women	15.4%	15.4%	0.0%	**12.2%**
	Men	6.0%	7.8%	17.7%	**10.1%**
	Total	7.9%	9.2%	15.3%	**10.5%**
Total	**Women**	**6.8%**	**9.3%**	**3.9%**	**7.1%**
	Men	**11.2%**	**8.1%**	**10.2%**	**9.1%**
	Total	**10.0%**	**8.4%**	**8.6%**	**8.6%**

GRI 404-1 *Average hours of training per year per employee*[23]

Average hours of training (2024)									
Professional category	**N. Hours Women**	**Total Women employees**	**N. hours per capita (Women)**	**N. Hours Men**	**Total Men employees**	**N. hours per capita (Men)**	**N. Hours Total**	**Total employees**	**N. hours per capita**
Executives	35	2	**17.5**	232	27	**8.6**	267	29	**9.2**
Managers	1,041	16	**65.1**	1,428	105	**13.6**	2,469	121	**20.4**
Employees	4,729	256	**18.5**	16,011	1,021	**15.7**	20,740	1,277	**16.2**
Workers and intermediates	1,176	1	**1,176.0**	1,429	107	**13.4**	2,605	108	**24.1**
Total	**6,981**	**275**	**25.4**	**19,099**	**1,260**	**15.2**	**26,080**	**1,535**	**17.0**

GRI 404-3 *Percentage of employees receiving regular performance and career development reviews*

Employees receiving regular performance and career development reviews (%) (2024)			
Professional Category	**Women**	**Men**	**Total**
Executives	100%	92.7%	**93.0%**
Managers	100%	96.9%	**97.2%**
Employees	92.4%	90.7%	**91.0%**
Workers and intermediates	0.0%	81.0%	**80.5%**
Total	**92.8%**	**90.7%**	**91.1%**

[23] For data regarding total training hours at the Group level, please refer to the "Talent" chapter. The data presented in the following tables refers only to Tenova metals, as the breakdown by gender and professional category are not available for TAKRAF.

Our commitment to a Transparent Governance

Governance and ESG Management

GRI 2-9 *Governance Structure and Composition*

Governance composition (as of 31st December, 2024)[24]			
Member Name	**Gender**	**Executive and non-executive members[25]**	**Competencies relevant to the impacts of the organization**
Andrea Alberto Lovato	M	Executive	Business and markets
Federico Metzger	M	Executive	Human resources
Roberto Pancaldi	M	Executive	Business and markets
Gianfelice Rocca[26]	M	Non-executive	Strategy, business
Michele Zerbi	M	Non-executive	Administration, finance, internal controls

Compliance and Ethics

GRI 205-2 *Communication and training about anti-corruption policies and procedures*

Governance body members and employees that have received training on anti-corruption (2024)			
	N. of people that have received training	**Total of the category**	**Percentage of people that have received training**
Governance body members	-	5	-
Executives	14	43	32.5%
Managers	176	292	60.3%
Employees, workers and intermediates	810	2,181	37.1%
Total	**1,000**	**2,521**	**39.7%**

[24] All Board of Directors members are not independent and do not belong to under-represented social groups. Furthermore, they all have a tenure of 1 year and represent their main stakeholder of reference, which are the shareholders.
[25] The term "Executive" is used according to the definition provided by the "Codice di Autodisciplina delle società quotate".
[26] Gianfelice Rocca is the Chairman of the Board, and he is a Board Member in 2 listed companies and in various companies of Techint Group or other institutions in the education realm.

Employees that have received training on anti-corruption (2024)			
	N. of people that have received training	**Total of people in the Region**	**Percentage of people that have received training**
Africa	78	138	56.5%
Asia	424	757	56.0%
Europe	305	1,128	27.0%
North America	54	180	30.0%
Oceania	42	42	100%
South America	97	276	35.1%
Total	**1,000**	**2,521**	**39.7%**

Our Supply Chain

GRI 204-1 *Proportion of spending on local suppliers*[27]

Proportion of spending on local suppliers (2024)		
Local Spend [€]	**Total Spend [€]**	**Percentage of spending on local suppliers**
429,351,223	594,896,074	72.2%

[27] The data does not include the legal entity LOI Poland Spolka z.o.o., as the purchasing data were not yet fully integrated into the management system, which has caused difficulties in retrieving the relevant information.

GRI Content Index

Tenova Group and its fully consolidated subsidiaries operating within the framework of the Tenova Metals business and TAKRAF Mining business have reported the information cited in this GRI content index for the period 1st January 2024 - 31st December 2024 with reference to the GRI Standards. For more detailed information please refer to the "About this Report".

Statement of use	Tenova Group has reported in accordance with the GRI Standards for the period from 1 January to 31 December 2024.
GRI 1 used	GRI 1: Foundation 2021
Applicable GRI Sector Standard(s)	NA

GRI STANDARDS	DISCLOSURE	LOCATION	OMISSION		
			Requirements omitted	Reason	Explanation
GRI 2: General Disclosures 2021	2-1 Organizational details	p. 6, 8, 9			
	2-2 Entities included in the organization's sustainability reporting	p. 5 The fully consolidated subsidiaries operating within the framework of the Tenova Metals business, as of 31st December 2024, are the following: Tenova S.p.A., Tenova Goodfellow Inc., Tenova Technologies (Tianjin) Co. Ltd., LOI Thermprocess GmbH, Tenova Technologies Private Limited, Tenova Advanced Technologies Ltd., HYL Technologies S.A. de C.V., LOI Poland Spolka z.o.o., Tenova South Africa (Pty) Ltd., Tenova Inc. Tenova East Europe LLC is excluded from the reporting perimeter. The fully consolidated subsidiaries operating within the framework of the Tenova Mining business, as of 31st December 2024, are the following: TAKRAF Australia Pty Ltd., TAKRAF Do Brasil Equipamentos para mineracao Ltda, TAKRAF Canada Inc., TAKRAF Chile SpA, TAKRAF Mining Technology (Beijing) Co. Ltd., TAKRAF GmbH, TAKRAF India Private Limited, TAKRAF GmbH - Representative Office, TAKRAF México S. de R.L. de C.V., TAKRAF S.A.C., TAKRAF Eurasia LLC, TAKRAF South Africa Pty Ltd., TAKRAF USA Inc.			

GRI STANDARDS	DISCLOSURE	LOCATION	OMISSION		
			Requirements omitted	Reason	Explanation
GRI 2: General Disclosures 2021	2-3 Reporting period, frequency and contact point	p. 6			
	2-4 Restatements of information	This document is the first Sustainability Report published by Tenova Group with its fully consolidated reporting scope, therefore data comparisons with previous Reports published by Tenova S.p.A or TAKRAF would be improper.			
	2-5 External assurance	This Sustainability Report has not been externally assured.			
	2-6 Activities, value chain and other business relationships	p. 6, 8, 86-87			
	2-7 Employees	p. 63, 97			
	2-8 Workers who are not employees	p. 63, 98			
	2-9 Governance structure and composition	p. 79, 105			
	2-10: Nomination and selection of the highest governance body	p. 79			
	2-11: Chair of the highest governance body	p. 79			
	2-12: Role of the highest governance body in overseeing the management of impacts	p. 79-80			
	2-13: Delegation of responsibility for managing impacts	p. 79			
	2-14: Role of the highest governance body in sustainability reporting	p. 5, 79			

GRI STANDARDS	DISCLOSURE	LOCATION	OMISSION		
			Requirements omitted	Reason	Explanation
GRI 2: General Disclosures 2021	2-15: Conflicts of interest	p. 81			
	2-16: Communication of critical concerns	p. 81			
	2-17: Collective knowledge of the highest governance body	p. 79			
	2-18: Evaluation of the performance of the highest governance body	In 2024 the Group did not carry out a documented evaluation of the performance of the highest governance body.			
	2-19: Remuneration policies		All Indicator Requirements	Confidentiality constraints	In compliance with current regulations, Tenova Group has chosen not to disclose the information requested by the 2-19 indicator for reasons of confidentiality.
	2-20: Process to determine remuneration		All Indicator Requirements	Confidentiality constraints	In compliance with current regulations, Tenova Group has chosen not to disclose the information requested by the 2-20 indicator for reasons of confidentiality.

GRI STANDARDS	DISCLOSURE	LOCATION	OMISSION		
			Requirements omitted	Reason	Explanation
GRI 2: General Disclosures 2021	2-21: Annual total compensation ratio		All Indicator Requirements	Confidentiality constraints	In compliance with current regulations, Tenova Group has chosen not to disclose the information requested by the 2-21 indicator for reasons of confidentiality.
	2-22 Statement on sustainable development strategy	p. 3, 17-18			
	2-23: Policy commitments	p. 17-18 For further information on Tenova Group policy commitments for responsible business conduct, please refer to: Tenova website TAKRAF website			
	2-24: Embedding policy commitments	p. 79, 81			
	2-25: Processes to remediate negative impacts	p. 80-81			
	2-26: Mechanisms for seeking advice and raising concerns	p. 80-81			
	2-27 Compliance with laws and regulations	During 2024 there were no significant instances of non-compliance with laws and regulation nor related fines.			
	2-28 Membership associations	p. 80			
	2-29 Approach to stakeholder engagement	p. 80, 92-94			
	2-30 Collective bargaining agreements	p. 63, 75			

GRI STANDARDS	DISCLOSURE	LOCATION	OMISSION		
			Requirements omitted	Reason	Explanation
Material topics					
GRI 3: Material Topics 2021	3-1 Process to determine material topics	p. 13-15			
	3-2 List of material topics	p. 15, 92-94			
Energy					
GRI 3: Material Topics 2021	3-3 Management of material topics	p. 15, 57-58, 92-94			
GRI 302: Energy 2016	302-1 Energy consumption within the organization	p. 58, 95			
Climate Change mitigation					
GRI 3: Material Topics 2021	3-3 Management of material topics	p. 15, 92-94, 57			
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	p. 59-60, 96			
	305-2 Energy indirect (Scope 2) GHG emissions	p. 59-60, 96			
Resource inflows, including resource use					
GRI 3: Material Topics 2021	3-3 Management of material topics	p. 15, 57, 62, 92-94			
Resource outflows, related to products and services					
GRI 3: Material Topics 2021	3-3 Management of material topics	p. 15, 57, 62, 92-94			

GRI STANDARDS	DISCLOSURE	LOCATION	OMISSION		
			Requirements omitted	Reason	Explanation
Working conditions					
GRI 3: Material Topics 2021	3-3 Management of material topics	p. 15, 63-67, 92-94			
GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	p. 64-66			
	403-2 Hazard identification, risk assessment, and incident investigation	p. 64-67			
	403-3 Occupational health services	p. 64-67			
	403-4 Worker participation, consultation, and communication on occupational health and safety	p. 64-67 A formal joint management-worker health and safety committee is not present.			
	403-5 Worker training on occupational health and safety	p. 65-66			
	403-6 Promotion of worker health	p. 66-67, 75-76			
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	p. 64-67			

GRI STANDARDS	DISCLOSURE	LOCATION	OMISSION		
			Requirements omitted	Reason	Explanation
GRI 403: Occupational Health and Safety 2018	403-9 Work-related injuries	p. 64, 98	403-9 (b)	Unavailability of data	The Group is currently engaged in improving the monitoring system. In this regard, it was not possible to retrieve the data regarding hours worked by non-employee workers for 2024.
Equal treatment and opportunities for all					
GRI 3: Material Topics 2021	3-3 Management of material topics	p. 15, 63-64, 68-76, 92-94			
GRI 406: Non-discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	p. 69			
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	p. 73, 104			
	404-3 Percentage of employees receiving regular performance and career development reviews	p. 73, 104			
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	p. 68, 99			

GRI STANDARDS	DISCLOSURE	LOCATION	OMISSION		
			Requirements omitted	Reason	Explanation
Other work-related rights					
GRI 3: Material Topics 2021	3-3 Management of material topics	p. 15, 54, 84-85, 92-94			
Communities' social and cultural rights					
GRI 3: Material Topics 2021	3-3 Management of material topics	p. 15, 62-64, 74, 92-94			
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	p. 74, 100-103			
GRI 204: Procurement practices 2016	204-1 Proportion of spending on local suppliers	p. 106			
Personal safety of consumers and end-users					
GRI 3: Material Topics 2021	3-3 Management of material topics	p. 15, 39-44, 92-94			
Corporate culture					
GRI 3: Material Topics 2021	3-3 Management of material topics	p. 15, 78, 81-85, 92-94			
Protection of whistleblowers					
GRI 3: Material Topics 2021	3-3 Management of material topics	p. 15, 81-83, 92-94			
Management of relationships with suppliers including payment practices					
GRI 3: Material Topics 2021	3-3 Management of material topics	p. 15, 82-83, 86-87, 92-94			

GRI STANDARDS	DISCLOSURE	LOCATION	OMISSION		
			Requirements omitted	Reason	Explanation
Corruption and bribery					
GRI 3: Material Topics 2021	3-3 Management of material topics	p. 15, 81-83, 92-94			
GRI 205: Anti-corruption 2016	205-2 Communication and training about anti-corruption policies and procedures	p. 83, 105-106			
	205-3 Confirmed incidents of corruption and actions taken	p. 83 During 2024 there were no confirmed incidents of corruption.			
Innovation and digital transformation					
GRI 3: Material Topics 2021	3-3 Management of material topics	p. 15, 44-55, 92-94			

2024

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