



**GNUTTI
CARLO
GROUP**

Drive to
Excellence

SUSTAINABILITY REPORT




2023



Gnutti Carlo Group
SUSTAINABILITY REPORT 2023



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A message to our stakeholders ^[2-22]

Dear Stakeholders,

As we reflect on another year of progress, we are pleased to present our Group's 2023 Sustainability Report, developed in alignment with Global Reporting Initiative (GRI) standards.

In 2023, our Group navigated economic challenges and a complex market landscape, shaped by rising costs of materials, labor and financing. In the face of these challenges, we sustained our business operations and seized the opportunity to critically analyze our practices, enhancing our commitment to improve efficiency through innovative approaches. This report reflects our dedication to understanding and mitigating our impact on society and the environment, supporting the industry's transition toward smarter, balanced, and forward-thinking sustainable solutions.

A key focus for 2023 has been expanding our Greenhouse Gas Emissions Inventory to encompass direct and indirect emissions from upstream activities—a significant step toward capturing emissions across our entire value chain. This detailed tracking provides essential insights into emission sources and patterns, enabling us to design impactful strategies for the future. Already, several of our facilities have achieved meaningful reductions in emissions through energy efficiency initiatives and the adoption of renewable energy, as evidenced by PV installations and selective sourcing of electricity suppliers.

We recognize that our employees are instrumental to our success. In 2023, we enriched the training programs offered by the Gnutti Carlo Academy, our dedicated industrial school, which supports the development of all employees, from apprentices to senior leadership. We also intensified our investment in comprehensive health and safety training, with a focus on sharing best practices to prevent injuries. Ensuring a safe, healthy work environment for all is fundamental to our mission, and we remain committed to identifying risks and implementing proactive safety measures.

With a global presence, we are fully aware of our responsibility to protect the environment and contribute positively to society. We are proud of the progress we have made and look forward to continuing our journey toward a sustainable future. The world is evolving rapidly, and we are committed to being active participants in this evolution through investments in research, innovation, sustainable practices and, in essence, responsible behavior.

Claudio De Conto,

Gnutti Carlo CEO



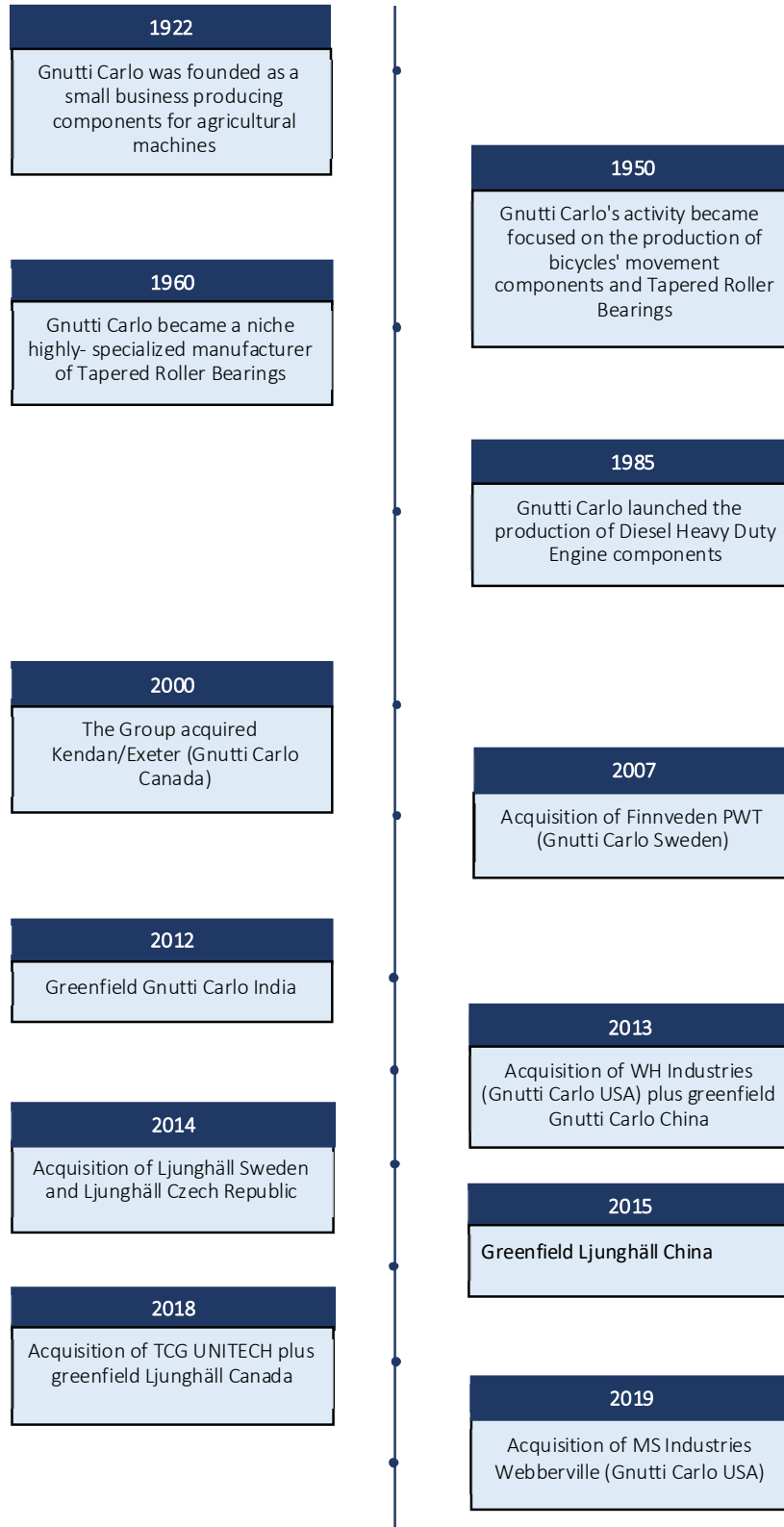
A close-up photograph of a green leaf, showing its intricate vein structure and numerous small, glistening water droplets scattered across its surface. The lighting is soft, highlighting the texture of the leaf and the clarity of the droplets.

1.

**GNUTTI CARLO GROUP:
history, values, and
sustainability approach**

1. Gnutti Carlo Group: history, values, and sustainability approach

1.1 Gnutti Carlo Group timeline



1.2 Introduction ^[2-1, 2-6]

Gnuttì Carlo Group (from now on also “the Group”) is a world-leading player in the automotive industry, operating in the powertrain sector with the development and production of components for Valve Train (rocker arm groups) and fuel injection components. Partner of several OEM's operating in the automotive, truck, earthmoving, motorbike, marine, power train, and e-mobility sectors, the Group is also a reference player in the supply of complex aluminium and magnesium high pressure die-cast components for the automotive industry, in the injection moulding of thermoplastic materials and in the development and production of oil pumps and coolant pumps.

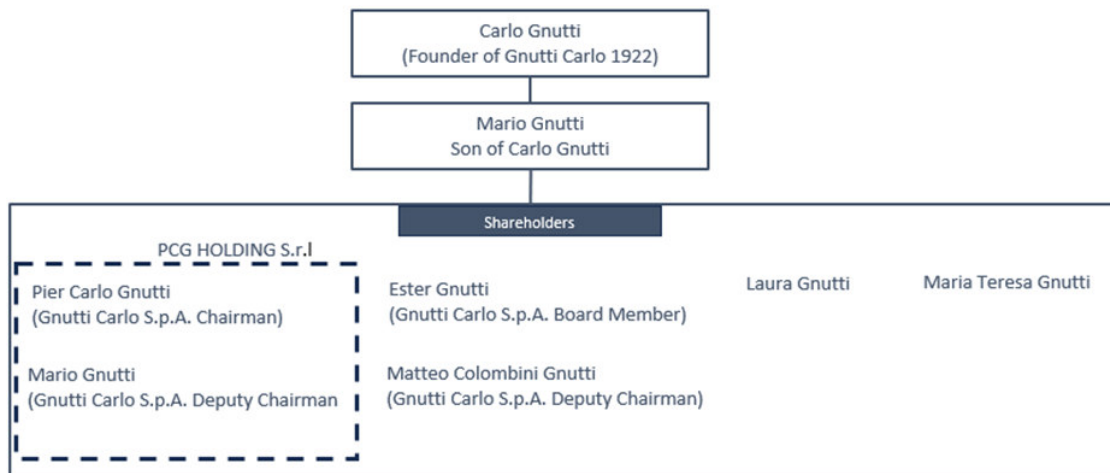
The holding company (Gnuttì Carlo S.p.A.) and the Group Headquarters are based in Maclodio, Brescia, Italy. The privately held Group employs more than 4.000 people in 12 plants located worldwide¹.

The origins of the Group trace back to 1922, when Carlo Gnuttì founded a business dedicated to manufacturing components for agricultural machines. Over the years, the Group has undergone several strategic shifts: notably, in 1985, it began producing parts for Diesel Heavy Duty Engines, and in 2014 it ventured into the High Pressure Die Casting sector. The Group's growth has been a combination of organic expansion, acquisitions, and the greenfield construction of new facilities in India, China, and Canada. Currently, the Group operates primarily in two sectors — Powertrain and High Pressure Die Casting — supplying major industry players as either a Tier 1 or Tier 2 supplier and managing all aspects of production from design to manufacturing and continuous improvement.

With a legacy that extends across four generations, the Group has become synonymous with high-quality products; indeed, each step of the production process and the quality control stages is carried out with a steadfast dedication to upholding the highest standards of quality and safety. The Group employs cutting-edge processes and best practices to ensure that each component is thoroughly inspected, ensuring optimum performance and dependability. Embracing digital transformation, the Group has embarked on a path to transform its plants into smart factories by integrating advanced technologies such as the Internet of Things (IoT), artificial intelligence (AI), and automation to boost efficiency and productivity. Furthermore, the Group places a strong emphasis on its people, prioritizing workplace safety and skill development through continuous training programs offered by its internal Academy.

¹ The sustainability report only includes the 3,241 directly employed workers

The Shareholders



The Group's business segments ^[2-2]

The Group is structured into two business segments: Powertrain and High Pressure Die Casting. Each segment is specialized in the production of different components and serves different markets; the High Pressure Die Casting business segment has been organized in two divisions - TCG UNITECH and Light Metals.

The Powertrain business is headquartered in Maclodio, Brescia, (Italy), hosted at one of the Plants of the Group. The Plant, which covers 23,000 square meters, also hosts the Group's Headquarters' offices. In this segment, the Group is a world leader in the development and production of valve train components, mainly rocker arm groups, lifters, roller tappets, and injectors. It partners with major OEM's active in the truck, construction, agricultural, motorbike, and marine sectors.

Starting from 2014, the Group ventured into the High Pressure Die Casting business, through the acquisition of **Ljunghäll** industries: established in 1917, Ljunghäll's Plants in Czech Republic, China, Canada and Sweden provide die-cast aluminum components to the automotive sector (trucks and passenger cars). Its acquisition enabled the Group to offer complete Valve Train systems to the market, encompassing both the camshaft carrier and rocker arm assembly.

In 2018, the Group acquired **TCG UNITECH**, an Austrian-based group mostly dedicated to the automotive sector (passenger cars and light commercial vehicle) since its establishment in 1958. With TCG UNITECH activities and expertise, the Group spread into new sectors and productive processes such as magnesium manufacturing, thermoplastic injection moulding, and the design and production of oil and coolant pumps. The acquisition strengthened the Group's presence into the premium cars market, further consolidating its position in such segment

Today, the Group is present in 9 countries with 12 production facilities, spreading over Europe, North America, and Asia:

Powertrain:

- Gnutti Carlo S.p.A., Maclodio, Brescia, Italy;

- Gnutti Carlo Sweden AB, Kungsör, Sweden;
- Gnutti Carlo Canada Ltd, Huron Park, Ontario, Canada;
- Gnutti Carlo India Ltd, Ranipet, Tamil Nadu, India;
- Gnutti Carlo (Wuxi) Engine Components Co., Ltd., Wuxi (Jiangsu), Xishan, China;
- Gnutti Carlo USA, Webberville, Michigan, United States.

High Pressure Die Casting:

- Metallfabriken Ljunghäll AB, Södra VI, Sweden;
- Ljunghäll s.r.o., Čáslav, Czech Republic;
- Ljunghäll (Wuxi) Die-Casting Co. Ltd, Wuxi (Jiangsu), Xishan, China;
- Ljunghäll Canada Ltd, Huron Park, Canada.
- TCG UNITECH GmbH, Kirchdorf an der Krems, Rohr im Kremstal, Micheldorf, Austria;
- Jepsen TCG Automotive Systems (Dalian) Co., Ltd, Dalian, China (a joint venture Company between TCG Unitech and Jepsen Automotive Technik).

The Group also comprises a Sales Company in Germany (Gnutti Carlo Germany GmbH), and a customer support location in the United Kingdom (Gnutti Carlo UK Ltd)².



The Group aims at granting the delivery of state-of-the-art technologies to its customers and to ensure the highest levels of quality. To achieve this, the Group employs cutting-edge techniques for product testing to meet and exceed customers' expectations. Advanced engineering is supported by laboratory testing conducted in soundproofed cells, equipped with benches specifically designed for dynamic engine tests. Additionally, the Group utilizes specialized equipment to fulfil specific client requirements, new materials testing, leak tests, and friction tests.

² Both UK and Germany offices are excluded from the reporting perimeter of this 2023 Sustainability Report.

These procedures are designed to ensure that each component undergoes in-depth functional testing to guarantee optimal performances and reliability.

1.3 The Group's identity and organizational structure

"Drive excellence"

The motto of the Gnutti Carlo Group describes its commitment to the ethical and sustainable creation of value, while ensuring the highest quality standards and operational excellence. The Group's decisions are driven by strong values and founded on the nine principles embedded in the Group's value structure. Indeed, the Group's success is based on both the reactivity with which it addresses present and future challenges and on its vocation towards operational excellence and transparency.



The Group constantly works with its clients to help them achieve their goals and to be a valuable partner for their businesses, trying to understand their processes, business models, and how they create value for their stakeholders.



The Group is committed to be more agile and cost-effective, and it works to consistently decrease complexity, "think lean," and enhance efficiency.



The market is shaped by several themes, including macroeconomics, regulation, innovation, and local requirements and restrictions. The Group's business is becoming more complex because of this. One key success factor is mastering complexity better than others.



Integrity is the foundation of the Group's business conduct. Even in challenging situations, the Group is committed to acting morally, fully dedicated to its business and stakeholders.



The Group highly values the significance of everyone's contribution and actively promotes a culture of personal accountability.



The Group aspires to be a team of really engaged individuals, proud to be part of a successful firm, where everyone is working for common goals.



The local footprint of the Group in different regions enables to embrace unique perspectives and to build synergies beyond geographical borders.



Inspired by the 3Ps strategy, the Group aims to achieve long-term profitability and wealth creation, reduce its environmental effect, and contribute positively to the communities where it is situated.



The Group is capable to transform challenges in opportunities leveraging its innovation and resilience capabilities.

The Group is thus committed to satisfy its customers by supplying products that are tailored to their unique requirements while operating quickly and effectively, as well as investing in innovative solutions and favoring simplicity over complexity.

Corporate functions and technical committees

The Group is administered by centralized corporate functions that guarantee coordination among its two businesses and local activities: the twelve Plant's Managing Directors report directly to the Group's Chief Operating Officer ('COO'), who in turn reports to the Chief Executive Officer ('CEO'). The Chief Technology Officer of the High-pressure Die-casting business, the Technical Director of the Powertrain business, the Powertrain Research and Development Director and the Quality Director also report to the COO. The objective of this governance structure is to facilitate strategic alignment and the sharing of results and best practices, while ensuring operational independence to quickly respond to market needs and local inputs.

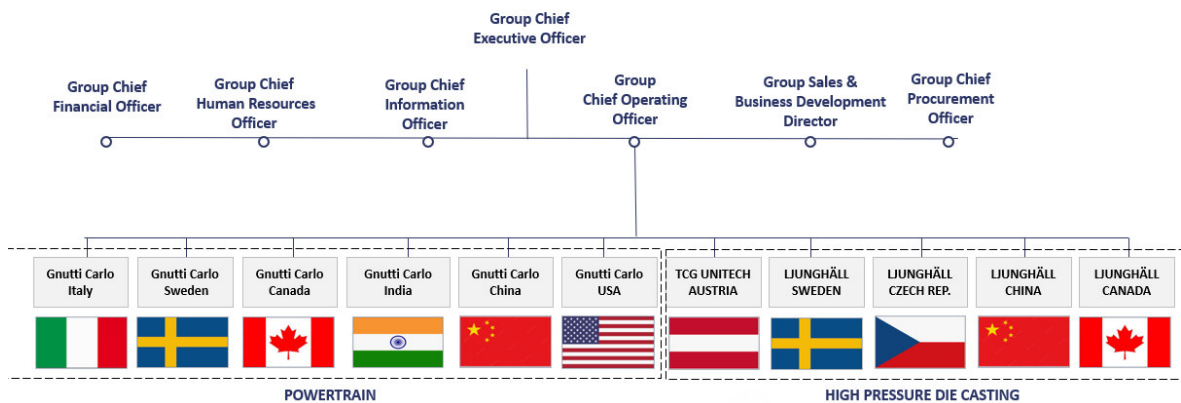
While daily operations, engineering activities, product development and quality control are delegated to local Plants, six corporate functions assist Plants' managers and local functions in aligning their activities with the Group strategy and sharing best practices.

The main responsibilities of the six corporate functions are:

- **Finance:** responsible for the integrity of the Group financial statements - ensuring both legal compliance and accurate financial reporting to the Stakeholders – over-seeing the cashflow in and out of the organization, reporting on the financial performance of the different Companies of the Group, developing effective financial strategies to help ensuring the success of the Group.
- **Procurement:** defines, plans, and controls the supply chain of the Group, ensuring that the businesses have the appropriate supplier base to manufacture their goods in line with the Customers' demand and expectations. Procurement also has the responsibility to develop the vendor base to be used for significant investments in production assets.
- **Operations:** leads, manages and runs the operations activity of the Plants of the Group, leading key initiatives, and implementing Group-wide strategies. Its duties include implementing the Operational Excellence Journey across the Group and maintaining the Group's conversion costs under control, in addition to the management of the Maintenance and Assets activities at Group level. Together with Human Resources, it manages the Gnutti Carlo Group Academy that has the ambition to reskill and up-skill the Group's personnel. HSEQ also belongs to this function to get uniformity in the Health, Safety, Environmental and Quality Systems across the Group.
- **Human Resources:** responsible for all the aspects related to the nurturing of the Human Capital of the Group, from hiring to training and development, to compensation and retention of the Group's employees
- **Information and Communication Technology:** supports the business' needs in all tasks and processes. This function oversees scouting, defining, maintaining, developing tools and new functions, always fitting with the context. ICT is a technological enabler for business processes

and a source of ideas for new technologies and digitalization, being actively engaged in the convergence process of IOT (Information Operation Technologies). ICT incorporates a risk-based approach, compliant with laws and standards, and it is in charge of setting a reliable Infrastructure and Cyber Security environment to provide continuous services.

- **Sales and Business Development:** sets go-to-market plans and organizes the Group’s strategies for top customers. It is in charge of spotting emerging trends in the automotive sectors as well as potential chances for the Group to continue growing in a sustainable way.



To better manage the needs and requirements of the business units, the Group CEO appointed two Operational Committees (the **High Pressure Die Casting Operational Committee** and the **Powertrain Operational Committee**).

These Operational Committees, established in November 2022, meet monthly and are focused on supporting the operational activities of the business of the Group, looking at:

- Operational performances (Financial, Sales/Backlog, OEE, Engineering, Quality, Inventory), performing reviews, analysis, and setting up follow-up actions.
- Requests for Quotations, Industrial Capacity and Investments proposals.
- Organizational topics.
- Investment authorization process.

Governance structure [2-9, 2-10, 2-11]

As per the governance structure, the Holding Company of the Group, Gnutti Carlo S.p.A., is governed by a five-member Board, comprising the Chairman of the Board of Directors, the CEO, the two Deputy Chairmen of the Board, and one Board member. The duration of their tenure, determined at the time of appointment, doesn’t exceed three financial years, with the possibility of re-election.

Board members - Gnutti Carlo S.p.A.

Pier Carlo Gnutti	Chairman of the Board
Claudio De Conto	Chief Executive Officer
Mario Gnutti	Deputy Chairman of the Board
Matteo Colombini Gnutti	Deputy Chairman of the Board
Ester Gnutti	Member of the Board

The powers, duties, and responsibilities of the Board of Directors are determined by government regulations (including the jurisdiction's corporate law), and the organization's constitution.

The Board is responsible for defining the CEO's compensation package: this package is composed by a fixed and a variable component, in terms of Management By Objectives (MBOs) and Long-Term Incentives (LTIs), which are tied to the attainment of specific economic and financial performance targets³. The Holding Company's Board of Directors is responsible of the M.B.O. Policy approval for the Group employees participating to the MBO Variable Compensation Program. The remuneration packages for other roles and positions are primarily influenced by the fixed remuneration component, therefore are more stable. [2-19] [2-20].

The Group has not at present implemented specific policy or guidelines to manage or prevent any cases of conflicts of interests within the Board of Directors, and in the reporting period no instances of conflicts of interest have been reported [2-15].

Stakeholders and membership associations [2-28, 2-29]

The Gnutti Carlo Group is characterised by a broad and complex value chain, and the stakeholders impacted by and responsive to its business activities reflect this complexity.

List of stakeholders

Employees	NGOs
Competitors	Universities and research institutes
Category associations	Local communities and territories
Investors and shareholders	Suppliers
Consumers and clients	Media and public opinions
Regulators and governmental bodies	Trade unions

³ Currently, bonuses and rewards based on sustainability objectives are not included, but the Group, coherently with its sustainability path, is considering their implementation in the coming years.

The methods of engagement set up to manage a dialogue with a large number and variety of stakeholders, public and private, includes different approaches depending on the category involved. These includes associations and platform, at national and international level, that promote networking, collaboration, and knowledge sharing among industry peers, aimed at facilitating collective growth and mutual development.

The Group is also an active member of several industry associations aimed at drafting guidelines, coordinating and promoting collaboration among different players in the automotive and metalworking industries. Lastly, the Group is a member of economic, financial (e.g., Chambers of Commerce) and technical associations, to foster product innovation and development within the industry.

In particular, the Group's Plants have joined the following associations of local and international interest:

List of association	
TCG UNITECH GmbH	Austrian Federal Economic Chamber
	Plastics Cluster
	Automotive cluster
	Industriellenverein Österreich
	Business Upper Austria
	Technology Innovation Center – Kirchdorf, Austria
Metallfabriken Ljunghäll AB	Österreichische Gießereiindustrie - ÖGI
	Teknikföretagen - Association of Swedish Engineering Industries - member of Svenskt Näringsliv, Confederation of Swedish Enterprises
Ljunghäll (Wuxi) Die-Casting Co. Ltd	China Foundry Association
	Shanghai Die Casting Technology Association
Ljunghäll Canada Ltd.	NADCA – North American Die Cast association
Gnutti Carlo Canada Ltd	HMA – Huron Manufacturers Association
	EMC – Excellence in Manufacturing
Gnutti Carlo USA	Michigan Manufacturing Association
	IMA (Institute of Management Accountants)
Gnutti Carlo Sweden AB	Scandinavian Association for Suppliers to the Automotive Industry
	Svenskt Näringsliv – Confederation of Swedish Enterprises
Gnutti Carlo S.p.A.	Confindustria - Brescia
	Heavy Duty Business Forum – Europe

	ANFIA (Associazione Nazionale Filiera Industria Automobilistica)
	Federmeccanica
Gnutti Carlo india Ltd	Export Promotion Council for EOUs & SEZs (EPCES) by the Ministry of Commerce & Industry, Government of India
Gnutti Carlo (Wuxi) Engine Components Co., Ltd.	China-Italy Chamber of Commerce

1.4 Group compliance and business ethics ^[2-23, 2-24, 2-25, 2-26]

The Group is dedicated to full communication transparency and compliance with laws and regulations in force in all countries where it operates. In particular, it has developed a set of internal documentation designed to prevent non-compliance with laws and regulations and to guide the behavior of its employees in their day-to-day activities.

For instance, Gnutti Carlo S.p.A. actively oversees and regularly revises its **Organizational, Management and Control Model**, a comprehensive framework consisting of principles, regulations, procedures, organizational structures and associated roles and responsibilities. This framework is designed to avert administrative offences in accordance with the provisions of the Italian Legislative Decree 231/2001 ^[2-16].

Group's **Code of Ethics and Conduct**, which draws inspiration from the Universal Declaration of Human Rights and the International Labour Organization's Declaration on Fundamental Principles and Rights at Work for Multinational Enterprises, has been updated by the Board of directors of the Group Holding Company on February 20th, 2023. It outlines the core principles, corporate values and rules that all company representatives, employees, and every individual acting, directly or indirectly, on behalf of the Group must respect to abide to its values. The Group is determined not to enter or continue any relationship with any entity or person who does not comply with the principles set out in its Code of Ethics and Conduct.

The six guiding principles included in Group's Code of Ethics and Conduct are the following:

- **Integrity:** all employees and collaborators are required to comply with applicable local regulations, regardless of any potential cost or benefit to the Gnutti Carlo Group.
- **Responsibility:** each employee is held accountable for their actions and professionalism, which can affect the reputation of the Group. Their professionalism and performance are to be aimed at achieving the goals set by the Group, and this should always be done by following the guidelines outlined in the Code of Ethics and Conduct.
- **Honesty:** all employees shall carry out their actions in accordance with the principles of honesty and diligence upheld by the Group. They should refrain from any unlawful behavior, not only in overt cases, but also in instances involving illegitimate acts or undue advantages arising from conflicts of interest.
- **Fair behavior:** each employee is required to respect the dignity of every other individual, and therefore to reject any kind of discrimination, harassment or use of child labor; in particular, the Group does not engage with business partners which use child labor.

- **Respect for the Law and Regulations:** the Group recognizes the fundamental principle of respecting the laws and regulations in effect in all countries; every employee and every activity must abide by the defined regulations.
- **Respect for the person and diversity:** The Gnutti Carlo Group promotes respect for the physical, moral, and cultural integrity of individuals. It guarantees working conditions that uphold individual dignity and ensure safe working environments; the Group is committed to applying current legislation and labor contracts to its workers.

The Group has also adopted a **whistleblowing system** and **dedicated channel**⁴, which provides a platform for reporting actions that are unethical, illegal, or in violation of policy, and allows individuals to disclose concerning matters that may otherwise remain undisclosed.

To ease this process, a designated online platform has been launched in 2022 to allow internal and external stakeholders to submit complaints. According to established protocols of the Group, when a complaint is reported, the local HR managers are accountable for documenting the incident, decide on the necessary actions to take to resolve the issue. The complaint is reported to the Group Whistleblowing Committee, made up by the Group Chief Human Resources Officer and by the Group Chief financial Officer, who assesses whether there is a need to involve the CEO⁵.

During 2023, two potentially critical concerns have been reported via the online platform: both have been promptly addressed and resolved within a few days.

The Group has also drafted dedicated policies and documents with the aim of making its workspaces welcoming, safe and inclusive for its employees and collaborators, to whom they are addressed:

- **Quality, Health, Safety, and Environmental Policy**⁶: the Policy has been implemented as an integral part of the Group's activities, and with the aim of achieving the greatest level of customer satisfaction by delivering products in line with the highest quality standards, according to a zero-defect principle. A second goal of the Policy is to continuously improve the Group's performance both in terms of occupational health and safety and environmental protection, through the removal or mitigation of present risks: healthy working conditions and safe workspaces, fire protection, responsiveness in cases of emergencies of any kind, and all those aspects aimed at reducing the Group's impacts on the environment, including the proper use of raw materials and resources.
- **Information & Communication Technologies Policy**⁷: the policy aims to outline the main methods for managing the Group's IT resources, with the primary objective of safeguarding sensitive information and personal data. It seeks to decrease and mitigate the potential for human error and to deter the risk of fraud by enhancing security awareness among all employees.
- **Gnutti Management System Handbook and Central Directives for Health, Safety, Environment and Quality**: the Group has established a unified Management System across its plants to

⁴ [Whistleblowing mechanism](#)

⁵ For the time being, communication of grievances reported is not a regular topic discussed at Board level: if deemed relevant, only significant cases are addressed during BoD meetings. Once a year the Group Whistleblowing Committee produces a report summarizing the cases, shared with the BoD and the Organismo di Vigilanza of the Group Holding Company.

⁶ [Quality, Health, Safety, and Environmental Policy](#)

⁷ [Information Security General Policy](#)

standardize procedures and promote a shared approach that emphasizes Health, Safety, Environment, and Quality.

- **Suppliers' manual:** the Group adopts a broad strategy in its business operations, extending its oversight beyond immediate operational control to encompass the entire product value chain. This strategy begins with the supply chain management, where the Group rigorously selects its suppliers through audits, site visits, and performance assessments: the goal is to forge partnerships with suppliers who share the Group's core values. To this end, the Group has developed a specific **Supplier Manual** that ensures that all suppliers of raw materials or semi-finished goods uphold the standards that have positioned the Group as a leader in its industry. The manual's purpose is to raise the supply chain's consciousness regarding health, safety, environmental, and quality matters, as well as international norms related to ethical business practices, workplace safety, labor rights, health, and environmental stewardship. The document sets clear expectations, guidelines, criteria, and vital processes that are crucial for maintaining a fruitful business partnership with the Group.

In 2023 no cases were recorded regarding violations of internal norms and regulations related to business ethics. The Gnutti Group places great importance on the management of business ethics and the upholding of high transparency standards. These elements are considered essential for fostering trust and credibility among stakeholders and for encouraging fair and responsible business conduct that can lead to a beneficial impact on society.

Certifications

The Group has consistently dedicated considerable attention and effort to ensure the ongoing enhancement of its manufacturing processes and operational framework. Throughout the years, the Group's facilities have secured numerous international certifications related to their industry and production methodologies. In particular, the plants have formalized and implemented the following management systems and have acquired the corresponding certifications:

- **ISO 9001:** certification in Quality Management Systems is designed to enhance the quality of products and services while reliably fulfilling the demands of the Group's customers;
- **IATF 16949:** the certification for Automotive Quality Management Systems is designed to prevent defects and minimize variation and waste within the automotive supply chain by focusing on the quality of processes.;
- **IATF 16969:** the certification provides guidance and tools for companies and organizations aimed at ensuring that their products consistently meet customer requirements, and that quality and customer satisfaction are improved and enhanced;
- **ISO 14001:** Environmental management system which offers practical instruments for handling environmental obligations and ensuring compliance;
- **ISO 45001:** Occupational Health and Safety Management Systems equip the Group with the means to create secure and health-conscious work environments while enhancing its performance in health and safety;
- **TISAX:** Trusted Information Security Assessment Exchange guarantees the protection of information security and the secure handling of confidential data with the automotive sector.

As the table shows, the obtained certifications differ based on the plant's level of maturity and the requirements stemming from their distinct customer bases. In recent years, there has been a

progression in the certification standards achieved by the Group's plants. TISAX certification was obtained in 2023 from Gnutti Carlo spa, Metallfabriken Ljunghäll AB, Ljunghäll s.r.o., and Ljunghäll (Wuxi) Die-Casting Co.Ltd. Ljunghäll Canada Ltd. plans to obtain ISO9001 and IATF16949 certifications in 2024, while ISO14001 certification in 2025.

Gnutti Carlo Group	ISO9001	IATF16949	ISO14001	ISO45001	TISAX
Gnutti Carlo Spa		0	0	0	0
Gnutti Carlo Sweden AB		0	0	0	
Gnutti Carlo Canada Ltd	0	0	0		
Gnutti Carlo India Ltd	0	0	0		
Gnutti Carlo (Wuxi) Engine Components Co., Ltd.	0	0	0		
Gnutti Carlo USA	0	0	0		
Metallfabriken Ljunghäll AB	0	0	0		0
Ljunghäll s.r.o.	0	0	0		0
Ljunghäll (Wuxi) Die-Casting Co.Ltd	0	0	0		0
Ljunghäll Canada Ltd.	0	2024	2025		
TCG UNITECH GmbH	0	0	0	0	0

1.5 Sustainability governance and impact materiality ^[3-1] ^[3-2]

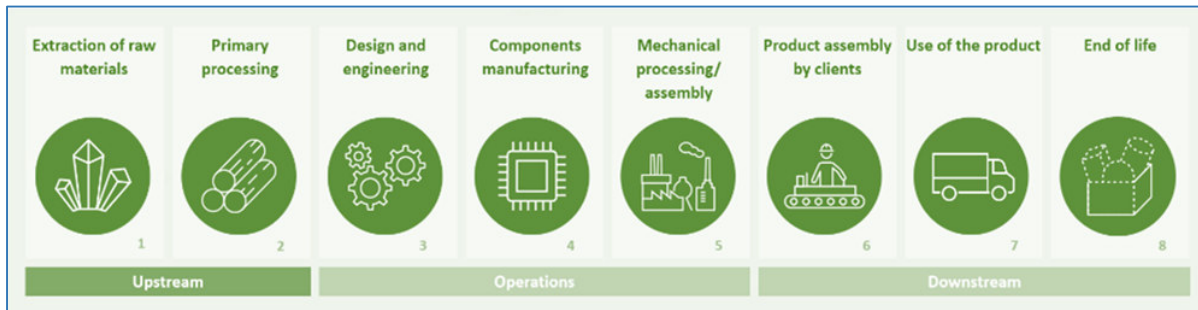
The Group, continuing the path undertaken in 2022, has drawn up its Sustainability Report in accordance with the GRI Standard 2021. As per the methodology required by the Standard, the Group identified the most relevant sustainability impacts, actual or potential, negative or positive, that it generates. Impacts can be negative, when they produce harm to individuals, society, and the environment, or positive if, conversely, they generate a positive contribution to sustainable development. The relevant topics covered in this Sustainability Report were identified using an **impact materiality process**, consisting of the following, consequential steps:

- an understanding of the context in which the Group operates;
- the identification of the current and potential negative and positive impacts that the Group and its value chain have or may generate;
- an evaluation of the significance of each impact, based on its severity and likelihood, as well as a prioritization of the impacts;
- the identification of the material topics associated with the impacts identified as pertinent in the preceding steps;
- the validation of the impacts identified by the Group's top management⁸, according to their perception and relevance to the Group itself.

The Group's value chain ^[2-6]

To identify the impacts generated by the Group, all stages of the Group's value chain were mapped, including both upstream and downstream activities.

Considering the different processes carried out within its business units, the Group's value chain encompasses multiple stages. It begins with the extraction of raw materials, followed by design and engineering phases, manufacturing processes, and ultimately extends to the end-of-life of the products sold. In the light of this complexity, having a comprehensive understanding of the characteristics and operations at each step of the value chain is vital to ensure a thorough application of the highest quality standards.



⁸ Furthermore, a centralized working group ^[2-13] has been established to oversee the Group's sustainability path and coordinate the related activities. The Board of Directors and the Managing Directors of each of the 12 plants participated in a dedicated workshop held in November 2022, aimed at fostering their knowledge about ESG topics, the regulatory context and applicable Standards, and how to report sustainability information accordingly ^[2-17] ^[2-18].

The mapping of the Group’s value chain is the starting point for the identification of the main upstream, direct, and downstream impacts of the Group. These impacts were identified through an analysis focused on the sector in which the Group operates, on the sustainability issues brought up by the media, and on a benchmark of the impacts of the Group's main competitors and comparable companies. The comprehensive identification of impacts in the value chain is a key step towards their mitigation, through Group initiatives, policies and actions. Upstream impacts in the value chain are addressed by the Group through the Suppliers’ Manual, which – as illustrated above – guides the supplier selection process, as well as audits and performance assessments, to raise awareness of sustainability issues and establish expectations, rules, and requirements for a successful relationship. The Manual addresses the impacts of the value chain on human rights by expecting and requiring all suppliers to respect human rights, fight any form of discrimination and restrain from using any form of forced and/or compulsory labor.

Identification and evaluation of significant impacts [2-25]

The impacts identified along the Group’s value chain were addressed and prioritized by an assessment of their **significance**, based on different attributes:

- **Severity:**
 - **Scale:** how severe the impact is and the external context in which the impact occurs, including geography.
 - **Scope:** how widespread and how can be measured in terms of impact on the value chain.
 - **Irremediable character:** how difficult it is to counter or remedy the resulting damage.
- **Likelihood:** the likelihood of an impact considers the measures taken by the company to prevent the impact and mitigate it. It considers the risks associated with a specific context, such as the level of governance safeguards, the presence of procedures for the management of human and workers' rights, due diligence processes on sustainability issues, etc. In addition, geographical risk is considered which could increase the likelihood of an impact occurring.

The output of the impact prioritization process is shown in the following table. Each impact has been associated with a specific GRI Disclosure, defining the list of indicators the Group reported on throughout this Sustainability Report. The whole process was validated by a dedicated workshop carried out with the Top Management of the Group.

Impact	Description	Value chain	GRI
Impact on climate change within and outside (es. supply chain) the organization due to energy consumption and other GHG emission sources.	Metal production and processing are energy-intensive operations, generating GHG emissions and contributing to climate change.	Upstream	305-1
		Core	305-2
		Downstream	302-1
			302-3
Improper management of waste and/or limited quantity of waste sent to recycling/reuse.	Mismanagement of waste can pose a significant threat to human health and ecosystems, while also reducing contribution to circular economy.	Upstream	306-1
		Core	306-2
		Downstream	306-3
			306-4
			306-5

Damage to ecosystems due to the consumption of virgin raw materials and land use change	Ore extraction and metal processing and production cause the depletion of virgin raw materials and are associated, in the extraction phase, to land use change.	Upstream Core	301-1
Unavailability of water resources due to consumption in water-stressed areas	Metal processing and production can impact local water resource availability, thus impacting local communities, particularly in water stressed areas.	Upstream Core Downstream	303-1 303-2 303-3
Pollution of water resources due to spillage of hazardous substances	Metal processing and production can pollute local water resources, thus impacting water quality.	Upstream Core Downstream	303-1 303-2 303-3
Human rights violation and environmental damages in the supply chain	Supply chain risks feature in all aspects of the manufacturing sector including supply of raw materials, component assembly, transportation of components or finished products, impacting on human rights along the value chain.	Upstream Core Downstream	Non GRI
Working conditions and impacts on employees' health and safety	An unsafe working place or working conditions can impact workers, resulting in hazards risks associated with the industry, leading to injuries or work-related diseases.	Upstream Core	403-1 403-2 403-3 403-4 403-5 403-6 403-7 403-9
Positive impact on social and economic growth of local areas and communities	Engagement and enhancement of local communities creates value for local economy and favor economic development and job opportunities.	Upstream Core	405-1 2.7
Positive impact on the development of employees' skills	Employees' training and development improves people skills and supports the organization's business goals.	Core	Non GRI
Safeguarding of employees' wellbeing	Wellbeing can refer to mental and physical health, as well as more complex aspects such as satisfaction and engagement.	Core	401-1
Violation of internal norms and regulations on business conduct and ethics	Compliance with socio-economic & environmental laws and regulations is pivotal aspect for companies involved in globalized markets, thus ensuring their success in conducting efficient operations.	Core	Non GRI

<p>Negative impact related to the violation of existing law on socio-economic and environmental compliance</p>	<p>Compliance with socio-economic & environmental laws and regulations is a crucial aspect for companies involved in globalized markets, thus ensuring their success in conducting efficient operations.</p>	<p>Core</p>	<p>2.27</p>
<p>Positive impact due to technology progress, knowledge, and skills to promote sustainable development and create shared value.</p>	<p>Technological progress refers to the introduction of new methods of producing goods or process, thus contributing to innovation within the applicable sector.</p>	<p>Core</p>	<p>Non GRI</p>



The background of the slide is a dense, close-up photograph of various green fern fronds. The fronds are layered and overlap, creating a rich, textured appearance with varying shades of green, from bright lime to deep forest green. The lighting is natural, highlighting the fine details of the leaflets and the central rachis of the fronds.

2.

LIFECYCLE APPROACH IN CLIMATE CHANGE MITIGATION

2. Lifecycle approach in climate change mitigation

2.1 Fostering tomorrow's power systems and energy source solutions

The Gnutti Carlo Group recognizes the potential implications of its business activities and products on society and on the environment. To minimize these effects, the Group's production sites are actively engaged in the exploration of cutting-edge **manufacturing technologies** to foster the upkeep of machinery and continuous supervision. The Group's testing laboratories and operational departments are dedicated to developing lower impact solutions that allow for lower emissions, as well as strategies to curtail the generation of waste and the consumption of energy, water, and raw materials.

In addition to adopting sustainability-oriented practices in its production processes and activities, the Gnutti Carlo Group also places a strong focus on the design of its products and is extremely attentive to the evolution of the market and its demand for increased "electrification".

Being aware that **electric and hybrid vehicles** are key to progress towards a more sustainable mobility, the High Pressure Die casting Business has been dedicated for years to the supply of die-cast aluminum components and oil and water pumps suitable for hybrid and full electric power systems. In addition, in 2018, the Powertrain division was contracted to produce a 'full electric' transmission component. These two milestones have placed the Group in a competitive position on the market, laying the groundwork for further potential orders in the field of **e-mobility**.

The Die casting business team is also focused on providing solutions for solar panel systems, green source energy integrated in both the manufacturing of the vehicles and in the battery charging during the life of the vehicles.

The adoption of sustainability-driven principles goes further than just electric and hybrid vehicles; it also involves the development of fuel engine technology. This includes working together with customers to improve the efficiency of engines, especially for heavy-duty transport, which ultimately leads to decreased fuel consumption. To achieve these objectives, the Group has put into place the following strategic approaches:

- **Engine downsizing:** by working on the geometry of parts, the Group aims at making them as light as possible in relation to the efforts and mechanical strength they must ensure;
- **Decreased lubrication:** the Group uses techniques that guarantee a decrease in friction, wear, and contact phenomena when lubrication is decreased. This enables the development of goods that operate at lower pressures and with low viscosity lubricants, which are less polluting as they do not include additives. Utilizing smaller oil pumps also reduces the need for auxiliary systems, which is beneficial to CO₂ reduction.
- **Engine brake systems:** the creation of a variable geometry system allows the engine's braking power to be boosted while using less energy than in conventional braking systems;
- **VVA Systems:** variable geometry systems (i.e., cylinder deactivation, valve lift variation), have been developed to increase the thermodynamic efficiency of the engine;

- **Hydraulic tappets:** they allow to give up on the need for repeated valve clearance adjustments, by guaranteeing the long-term maintenance of the optimal setting that lowers harmful emissions.

The Group consistently establishes objectives to enhance its operational procedures and reduce the environmental impact of its activities, with the final aim to guarantee that every one of its entities and business sectors collaborates effectively towards reducing their impact on climate change.

2.2 GHG emissions and energy consumption ^[302-1, 302-3, 305-1, 305-2, 305-3]

The Gnutti Carlo Group's dedication to environmental stewardship is reflected in its focus on decreasing **energy consumption** and the related **greenhouse gas (GHG) emissions**. In pursuit of mitigating the effects of energy usage, the Group makes conscious choices regarding energy sources, favoring renewable options over fossil fuels whenever feasible. Additionally, the Group undertakes measures to lower its total energy consumption through actions and initiatives tailored on the characteristics of its facilities and machinery.

Enhancing **energy efficiency** is a key component of the Group's environmental strategy, enabling the reduction of energy usage, the decrease of operational expenses, and the alleviation of risks linked to energy reliance. The Group's goal to boost energy efficiency primarily hinges on the dedication and participation of essential personnel, including plant directors and managers. These individuals are engaged in an ongoing dialogue designed to synchronize efforts and exchange information on plant configurations that support energy-saving measures, best practices, and heightened awareness.

At **Gnutti Carlo's plant of Macclodio (Italy)**, a comprehensive LED revamping project was executed over the past few years, targeting the replacement of all lighting fixtures with more energy-efficient LED lamps. The facility is not only building on initiatives recently implemented such as the monitoring of smart meters to track energy usage and identify inefficiency hotspots, but it has also planned the replacement of all air compressors with more efficient units and it has committed to routinely conducting air leakage assessments and corrective actions, as well as performing comprehensive energy audits.

Since 2022, employees at **TGC Unitech Austria** have been involved in the "TGC Contest", an annual initiative that rewards the best suggestions made by employees to reduce energy consumption. In 2023 the facility focused on monitoring energy consumption and efficiency while planning for 2024 the substitution of the fire protection gas and the first phase of the Induction Furnace project, which involves the installation of two ovens.

As part of its energy optimization efforts, **Metallfabriken Ljunghäll Södra Vi**, has installed two frequency converters which have decreased the energy use for hydraulic pumps. Furthermore, the factory has enhanced the efficiency of its cooling system and a portion of the lighting in the production area has been upgraded to LED technology. Among initiatives planned for the future is the installation of more frequency converters and the implementation of additional heat recovery systems.

Other important energy efficiency related initiatives implemented by the Group in its facilities are related to upgrading compressors with frequency converters, automating air conditioning and

implementing improved venting control, including gate closure and heat distribution, energy diagnostics and installation of smart meters to monitor energy-intensive equipment.

Overall, the distribution of energy sources used by the company remained constant, with electricity as the primary source of energy consumed.

Energy consumed within the organization (GJ) ^[302-1]

	2023	2022	2021
Electricity	808,440	781,157	781,116
Natural gas	296,698	281,551	310,449
Propane (LPG)	91,610	78,011	83,102
District heating	25,278	22,566	28,916
Diesel	8,063	8,698	7,851
Diesel (emergency generator)	567	1,676	1,362
Gasoline	1,168	1,138	849
Total energy consumed	1,231,824	1,174,796	1,213,644

The Gnutti Carlo Group operates within an energy-intensive sector and has consequently embarked on a path to identify, track, and ultimately diminish its energy usage and associated emissions, reflecting its commitment to energy conservation and environmental responsibility.

The Group's energy intensity, considering the increase in sales from 2022 (809,658 k€) to 2023 (861.261 k€), has been constantly decreasing, as a result of the path taken by plant managers to reduce energy consumption and associated emissions.

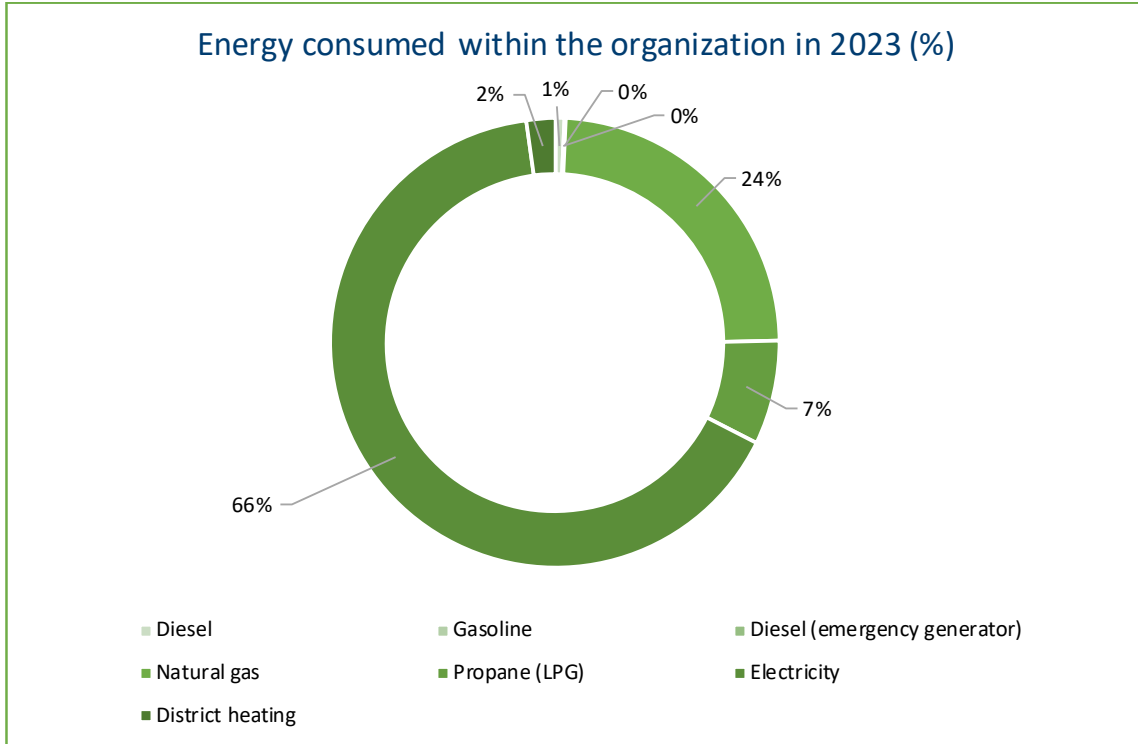
Energy consumed within the organization (GJ/k€) ^[302-3]

	2023	2022	2021
Energy intensity	1.43	1.45	1.73

Natural gas ranks second among energy sources, at 24%, and is predominantly utilized for melting processes and heating the Group's plants and operational spaces. Propane is the third key energy

source, representing 7% of the Group's total energy consumption for 2023, and is mainly employed for melting processes at the Metallfabriken Ljunghäll AB site in Södra VI, Sweden. A smaller fraction, approximately 1.9%, is used by Gnutti Carlo's subsidiaries in Canada and the USA, including Gnutti Carlo Canada Ltd, Ljunghäll Canada Ltd, and Gnutti Carlo USA, for production-related activities.

The diesel utilization for the operation of the Group's vehicle fleet and emergency generators constitutes a relatively minor proportion of the total energy expenditure, accounting for 0.7% of the Group's aggregate energy consumption.



Electricity, the primary energy source for the Gnutti Carlo Group, constitutes a significant 66% of its overall energy usage. This energy powers essential assets and critical production processes at facilities like Metallfabriken Ljunghäll AB in Södra VI, Sweden, and TCG UNITECH in Austria. The total electricity consumption of the Group in 2023 increased by 4.4% compared to both 2022, in line with the increase in revenues.

Electricity consumption (kWh)

	2023	2022	2021
Electricity purchased from the grid	224,566,702	216,988,052	216,976,714
<i>Of which from certified renewable sources (Certificates of Origin)</i>	65,282,345	73,532,197	80,635,797
Self-generated electricity	2,067,103	12,537	-

<i>Of which sold into the national grid</i>	81,203	860	-
<i>Of which consumed</i>	1,985,900	11,677	-
Total electricity consumed	226,552,602	216,999,729	216,976,714

In 2023, the Group covered 29% of the electricity purchased from the grid with Certificates of Origin which ensure that the energy purchased comes from renewable sources. In particular, respectively 85% and 83% of electricity purchased by the Sweden Kungsör and Sodra-Vi plants in 2023 was covered by Guarantees of Origin from renewable sources while the remaining part of electricity purchased can be traced back to nuclear generation.

Ljunghäll Wuxi joined the Swedish plants on this journey by ensuring 13% of the electricity purchased was generated from renewable sources as well. In line with its environmental commitments, the Group has focused on increasing capacity to self-generate renewable energy through the **photovoltaic plants** installed in its facilities. The sharp increase in 2023 is due to the PV plant at TCG Unitech in Austria being fully operational during the reporting year and, to a lower extent, to renewable electricity being produced at Ljunghäll Wuxi. Additional implementations are planned and well underway as a new photovoltaic system will be installed at Gnutti Carlo's plant of Maclodio during 2024, while an extension of the existing one is planned at TCG Unitech. In India, during 2024, it is under definition a power purchase agreement for the supply of electricity from photovoltaic plants to Gnutti Carlo India.

The Group is dedicated to expanding its use of green electricity in the forthcoming years, with a strategic emphasis on additional key systems in selected facilities.

In three plants (Sweden Kungsör, Ljunghäll Södra Vi, TCG Unitech Austria) of the Group, district heating has been used as an alternative to natural gas for workspace heating. For example, the Ljunghäll Södra Vi plant in 2023 used 5,978 MWh of biobased district heating, and TCG Unitech Austria Plant procures heat from a district heating system, where most of the heat is generated through fuel cogeneration and industrial waste heat.

District heating (kWh)

	2023	2022	2021
District heating	7,021,647	6,268,425	8,032,356

The collection of data related to the Group's energy consumption is aimed at calculating its direct (Scope 1) and indirect (Scope 2) in accordance with the GHG Protocol Corporate Accounting and Reporting Standard and summarized within the dedicated tables below, showing the trend on the three-year reporting period 2021-2023.

Specifically, **Scope 1 direct GHG emissions** cover all those Green House Gases emissions that are directly emitted by the Group through mobile combustion (gasoline and diesel cars), stationary

combustion (natural gas, propane, diesel for emergency generators) and refrigerant gas refills for air conditioning systems.

Direct GHG Emissions (Scope 1) (tCO₂eq) ^[305-1]

	2023	2022	2021
Natural gas	16,600	15,816	17,559
Propane (LPG)	5,975	4,991	5,316
Diesel	569	617	549
F-gas	334	254	357
Diesel (emergency generator)	44	129	103
Gasoline	76	76	57
Total GHG emissions Scope 1	23,598	21,883	23,941

Overall, the Group's direct GHG emissions (Scope 1) increased in 2023, mainly due to higher natural gas and propane consumption, following a decrease between 2021 and 2022, in line with the increase in production.

The slight decrease in diesel consumption for the Group car fleet is associated to the commitment undertaken at TCG Unitech, where the target is to replace 50% of the fleet' units with **green vehicles**. To support this transition, approximately 20 charging stations have been installed, providing a low-cost electric charging option for employees and free of charge for company cars.

Scope 2 Location-based GHG emissions decreased by 23% compared to 2022 because of the update of the Emission Factors used in the calculation, which now provide an updated reflection of the energy mix of the countries in which the Group operates.

Indirect GHG emissions (Scope 2 Location-based) (tCO₂eq) ^[305-2]

	2023	2022	2021
Electricity purchased from the grid	38,447	49,251	49,709
District heating	59	1,070	1,371
Total GHG emissions Scope 2 (Location-Based)	38,506	50,321	51,080

Indirect GHG emissions (Scope 2 Market-based) (tCO₂eq) ^[305-2]

	2023	2022	2021
Electricity purchased from the grid	71,233	66,157	41,307
District heating	59	1,070	1,371
Total GHG emissions Scope 2 (Market-Based)	71,292	67,227	42,678

On the other hand, **Scope 2 Market-based GHG emissions** have slightly increased, due to the overall increase in electricity consumption.

To enhance the quality of its sustainability reporting and to provide a detailed analysis of the impacts of its distinct core businesses, the Group has decided to also present the information regarding Scope 1 and Scope 2 GHG emissions according to the two Business segments Powertrain and High Pressure Die Casting. This division allows for a comprehensive examination of the specific contributions and effects of each Business within the overall reporting framework. Specifically, the proposed tables show the breakdown of Scope 1 and Scope 2 GHG emissions for the Business segments mentioned above.

The tables below will detail the distribution of Scope 1 and Scope 2 GHG emissions across the Business Units.

Direct GHG emissions (Scope 1) (tCO₂eq) – By Business Segments

	2023	2022	2021
Powertrain	1,152	1,596	2,286
HPDC	22,446	20,286	21,655

Indirect GHG emissions (Scope 2 – Location-based) (tCO₂eq) – By Business Segments

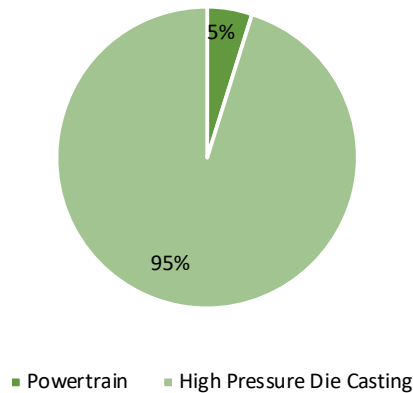
	2023	2022	2021
Powertrain	10,700	12,324	11,987
HPDC	27,806	37,998	39,093

Indirect GHG emissions (Scope 2 – Market-based) (tCO₂eq) – By Business Segments

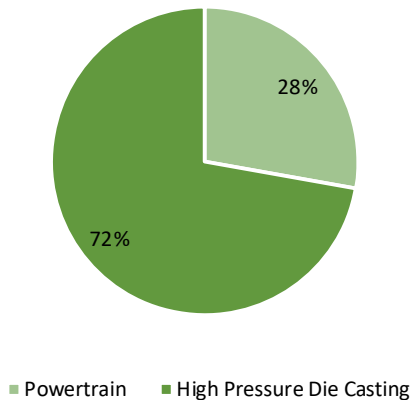
	2023	2022	2021
Powertrain	15,010	14,263	14,234
HDPC	56,283	52,965	28,445

The High Pressure Die Casting business holds the highest impact in terms of CO₂ emissions. This can be attributed to its energy-intensive processes, making it the most energy consuming unit of the Group, both for Scope 1 and Scope 2. Scope 2 GHG emissions are mainly attributed to the Ljunghäll plants for both Location-based and Market-based approach: which, indeed, were responsible for 72% of overall Scope 2 GHG emissions calculated with the location-based method, and for 28% of Scope 2 emissions calculated with the market-based methodology.

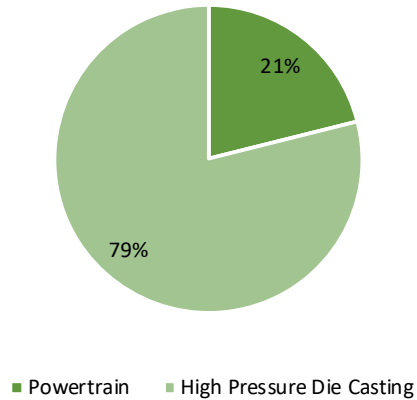
Scope 1 by Business Segment (2023)



Scope 2 Location Based by Business Segment (2023)



Scope 2 Market Based by Business Segment (2023)



Sustainability ambitions for Metallfabriken Ljunghäll AB (Södra Vi, Sweden)

The Swedish plant has been committed to combating climate change for a long time, and throughout the years, it has developed its own sustainability vision. This vision aims to increase awareness among the workforce in its production facilities while setting short-to-medium-term targets for achieving climate neutrality. Additionally, the plant focuses on protecting and effectively managing natural resources and raw materials, as well as enhancing waste management. In particular, it has set goals in the following areas:

Climate

The ambition is to be a climate neutral business by 2040. Metallfabriken Ljunghäll Södra Vi calculates its climate impact according to the Greenhouse Gas Protocol, by considering all Scopes.

Energy

Metallfabriken Ljunghäll AB Södra Vi's ambition is to replace all non-renewable fuels with fossil free alternatives. By 2025 Ljunghäll Södra Vi will have a concrete roadmap to become a fossil free organisation. The ambition is to continuously work on energy efficiency and to be self-sufficient on heat within the factory.

Water use

Drinking water is a valuable resource and Metallfabriken Ljunghäll AB Södra Vi wants to take its own responsibility in reducing the use of drinking water by reusing as much water as possible in its processes.

Raw material and waste

Metallfabriken Ljunghäll AB Södra Vi's objectives include the use of 100% recycled raw materials in its production processes and a strong emphasis on waste minimization. For waste that cannot be prevented, the plant aims to prioritize reuse or recycling methods.

The Group commitment to tackling climate change also comprises the tracking of GHG emissions along our value chain, to provide transparency for all our stakeholders, as well as to accurately plan future reduction targets. For 2023, in addition to Scope 1 and 2 emissions, other indirect emissions (Scope 3 Upstream emissions) were calculated. Aware of the implications of downstream emissions along the value chain the Group commits to complete its Scope 3 GHG Inventory in the near future.

Scope 3 Categories

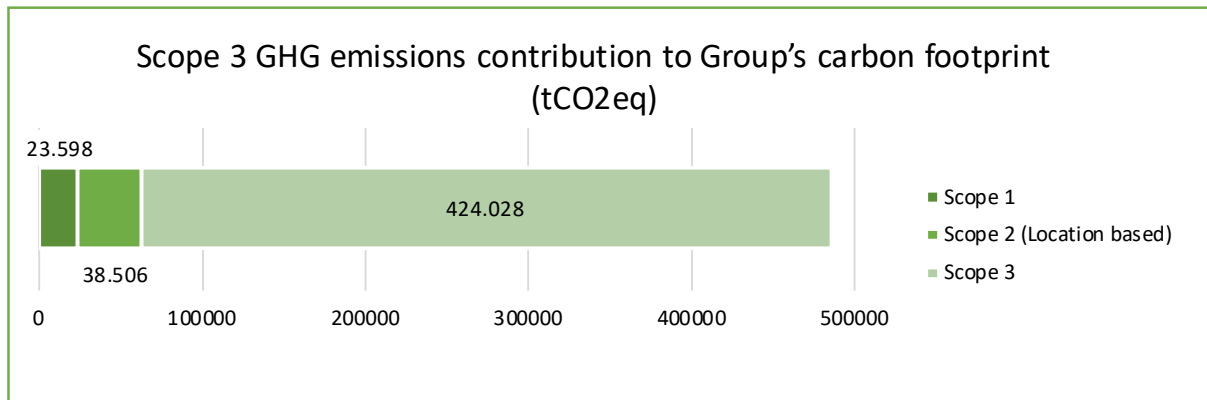
<p>Cat. 1 Purchased Goods and Services</p>	<p>Category 1 includes all upstream (i.e., cradle-to-gate) emissions from the production of products purchased or acquired by the reporting company in the reporting year. Products include both goods (tangible products) and services (intangible products).</p>
<p>Cat. 2 Capital Goods</p>	<p>Category 2 includes all upstream (i.e., cradle-to-gate) emissions from the production of capital goods purchased or acquired by the reporting company in the reporting year</p>
<p>Cat. 3 Fuel-and-energy-related activities not included in Scope 1 or Scope 2</p>	<p>Category 3 includes emissions related to the production of fuels and energy purchased and consumed by the reporting company in the reporting year that are not included in scope 1 or scope 2.</p>
<p>Cat. 4 Upstream transportation and distribution</p>	<p>Category 4 includes emissions related to the transportation and distribution of products purchased by the reporting company in the reporting year between a company's tier 1 suppliers and its own operations (in vehicles and facilities not owned or controlled by the reporting company). It also includes transportation and distribution services purchased by the reporting company in the reporting year, including inbound logistics, outbound logistics, and transportation and distribution between a company's own facilities (in vehicles and facilities not owned or controlled by the reporting company).</p>
<p>Cat. 5 Waste generated in operations</p>	<p>Category 5 includes emissions from third-party disposal and treatment of waste generated in the reporting company's owned or controlled operations in the reporting year. This category includes emissions from disposal of both solid waste and wastewater</p>
<p>Cat. 6 Business travels</p>	<p>Category 6 includes emissions from the transportation of employees for business related activities in vehicles owned or</p>

operated by third parties, such as aircraft, trains, buses, and passenger cars.

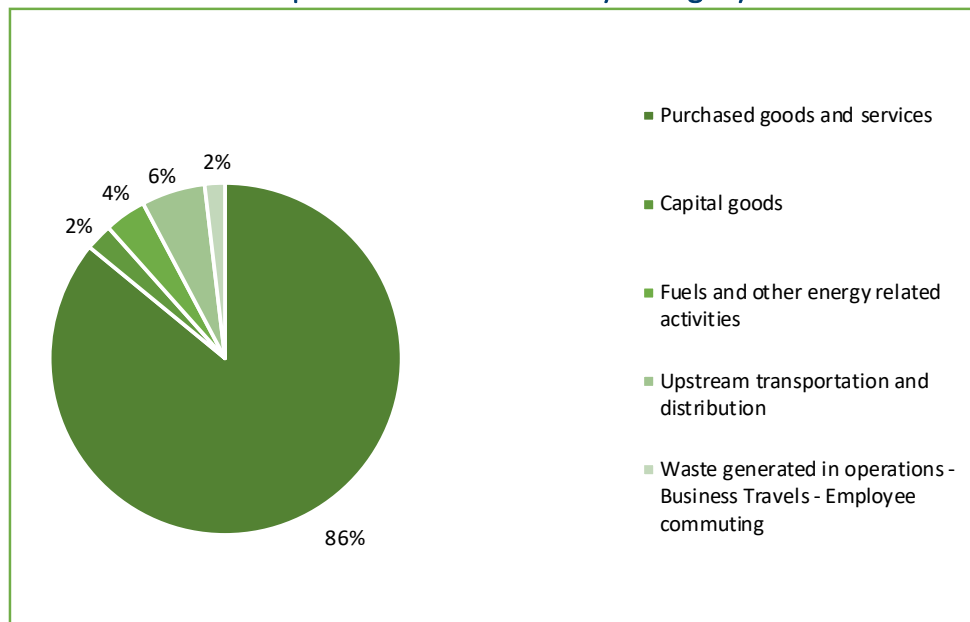
Cat. 7 Employee commuting

Category 7 includes emissions from the transportation of employees between their homes and their worksites.

The Group's total scope 3 emissions amounted to 424.028 tCO₂eq, or 87.2% of the total scope 1, scope 2 location-based and scope 3 emissions generated.



Scope 3 GHG emissions by Category



Purchased goods and services emissions

The purchased goods and services category includes all upstream (i.e. cradle-to-gate) emissions from the production of goods purchased by the company in the reporting year. Both goods (tangible products) and services (intangible products) are included.

This category is responsible for 364.452 tCO₂eq, around 86% of the Gnutti Group's Scope 3 GHG emissions. The procurement of raw materials, including both materials for finished products and packaging, accounts for the majority of emissions in the purchased goods and services category and the High Pressure Die Casting Business Segment is the predominant source of emissions associated to the purchase of goods, accounting for 52.5% total Scope 3 Category 1 GHG emissions.

The material associated to the highest share of GHG emissions is aluminum, responsible for 53% of tCO₂eq accounted in the category, followed by steel 28%.

In an effort to improve overall data quality and accuracy, the Gnutti Group is implementing an organization wide project aimed at automating data collection processes related to purchased goods and services by using standardised units of measurement and classification systems and by having access to the data collection sheets filled by each plant's data owner.

Upstream transportation and distribution emissions

The upstream transportation and distribution category includes all emissions from transportation and distribution services purchased in the reporting year, in vehicles not owned by the company, including inbound logistics, outbound logistics (e.g. of products sold) and third-party transportation and distribution between the company's facilities.

In order to retrieve data related to logistics, the Group engaged its transportation services providers in a collective effort to calculate GHG emissions related to road transport, which accounted for 71% of total emissions for 2023, and to air and sea transport, with shares respectively around 18% and 11%.

Employee commuting emissions

The employee commuting category includes all emissions resulting from the transport of employees between their homes and their workplaces. The data used for the calculation of emissions in this category were collected through a survey on the commuting habits of the Group employees rolled out at global level.

The questionnaire reported that the majority of employees (71%) commute to work by car, while the remaining respondents already adopt lower impact commuting practices by either walking/cycling to work, carpooling with colleagues or using company shuttles.

Other indirect (Scope 3) GHG emissions (tCO₂eq) – By category ^[305-3]

Emission category	2023 tCO ₂ eq	%
Purchased goods and services	364,452	85.95%
Capital goods	10,456	2.47%
Fuels and other energy related activities	16,411	3.87%
Upstream transportation and distribution	24,626	5.81%

Waste generated in operations	3,417	0.81%
Business travels	200	0.05%
Employee commuting	4,467	1.05%
Total GHG emissions Scope 3	424,029	100%

2.3 Materials ^[301-1, 301-2]

The environmental footprint of the Gnutti Carlo Group is significantly influenced by the materials used in its manufacturing processes. The metallurgic sector is known for extracting and utilizing large volumes of raw materials, which can affect virgin raw materials availability and may impact the health of ecosystems and their biodiversity by inducing land-use change.

The Group is meticulous in its approach to raw material selection, prioritizing the quality of materials, their recyclability, and adherence to international toxicity guidelines and regulations.

Due to the diverse range of products, it produces and its international operations, the Gnutti Carlo Group procures raw materials from various regions globally. To minimize the use of hazardous substances, the entire supply chain is subject to rigorous selection processes and suppliers must adhere to the Group's stringent quality standards.

The materials purchased by the Gnutti Carlo Group have been broken down in the below tables. To highlight the quantity of each type of good, it was decided to subdivide the purchases based on the nature of the product itself, distinguishing the products among the 4 following categories:

- Raw materials;
- Semi-manufactured goods or parts;
- Associated process materials;
- Materials for packaging purposes.

Materials used by weight - Raw materials (t) ^[301-1]

	2023	2022	2021
Aluminum	73,174	68,660	61,650
Steel	9,549	1,544	1,435
Iron	9,531	18,290	18,814
Magnesium	2,124	32	44

Bronze	127	203	203
Plastic	24	3,235	3,285
Total	94,529	91,964	85,431

Materials used by weight - Semi-manufactured goods or parts (t) ^{B01-1}

	2023	2022	2021
Steel	9,438	17,867	17,282
Iron	2,412	2,218	2,499
Aluminum	278	954	898
Plastic	941	954	1,073
Bronze	263	240	218
Brass	69	64	70
Metal	26	561	457
Other	2	-	-
Total	13,428	22,858	22,497

Compared to the three-year reporting period, in 2023 there was a slight increase in raw materials used and a decrease in semi-manufactured goods or parts used, due to the reclassification of items among the two categories. Most of the raw materials used in production processes are in the steel category (67%), followed by iron (17%). Most raw materials purchased by the Group therefore fall under the broad category of metals or metal alloys.

Similarly, semi-finished metal products, such as components and screws, which are necessary for manufacturing the Group's products, are sourced externally as the Group does not have active production lines for these items. Once again, nearly 100% of the expenditure in this category is allocated to the procurement of metal-based products, including aluminum, steel, and other metals.

Manufacturing processes also use process materials, i.e. materials that are required for the manufacturing process but are not part of the final product, such as detergents, oils, lubricants and cutting fluids.

Materials used by weight - Associated process materials (t) ^[301-1]

	2023	2022	2021
Propane	1,956	1,663	1,898
Oils and lubricants	1,598	1,140	1,066
Coolant	186	111	137
Cutting fluids	129	123	136
Chemicals	117	32	14
Cleaning agents	18	26	27
Other	13	5	5
Glass	6	13	23
Total	4,023	3,113	3,304

Finally, the packaging category includes all the materials acquired for safeguarding and enclosing finished products for transport. The Group places considerable importance on this segment, with a strong focus on utilizing recyclable materials to maximize packaging circularity and mitigate end of life impacts.

Remarkably, nearly 38% of the packaging procured in 2023 was composed of wood-based materials; opting for wood ensures high impact resistance during shipping while also reducing the environmental impacts through the recyclability properties of wood.

Materials used by weight - Materials for packaging purposes (t) ^[301-1]

	2023	2022	2021
Wood	1,136	1,114	1,243
Plastic	1,089	435	460
Cardboard	703	304	322
Paper	14	39	195

Total	2,944	1,892	2,221
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As shown in the table above, materials purchased and used for packaging purposes other than wood (38%) are plastic (37%), cardboard (24%) and paper (1%).



2.4 Water and waste management and disposal activities ^[303-3, 306-3; 306-4; 306-5]

The Gnutti Group places great importance regarding the responsible and conscious use of water during all production phases. Water is used for cooling processes in die casting areas, to produce emulsions and process liquids used during the production cycle, and, finally, for the cleaning phases of products and workplaces in addition to civilian consumption, which comprises a very small part compared to the Group's total consumption.

The table presented below provides information on the Group's water withdrawal, measured in megaliters (ML), and underscores the water supply in regions experiencing water stress.

Water withdrawal (ML) ^[303-3]

	2023	2022	2021
Total withdrawal from groundwater (e.g., wells)	85.8	83.0	84.6
<i>of which from water stress area</i>	12.5	11.1	11.6
Total withdrawal from third party water (e.g., public aqueduct)	133.6	111.1	106.3
<i>of which from water stress area</i>	13.7	13.8	11.7
Total water withdrawal	219.4	194.1	190.9
<i>of which from water stress area</i>	26.2	24.9	23.3

Water consumption grew steadily between 2021 and 2023, mainly in connection with the increase in production. Around 60% of water withdrawals, as shown in the table, were through agreements with suppliers (water from third parties). During the three-year reporting period, the Group did not procure water from the sea, surface water or produce water. Moreover, only a small part of the water withdrawals were from water-stressed areas, i.e. 12% of the total.

The Group is piloting innovations in selected plants: Ljunghäll Canada Huron Park has switched to a superior grade die lubricant, resulting in a more effective application ratio. The change has led to a reduction in water usage and a decrease in the volume of wastewater produced. Such innovations are deeply linked to the environmental commitments of the Group and through the implementation of these strategies, the Group seeks to refine its water management techniques and play a role in safeguarding this essential natural resource.

Utilizing the Water Risk Atlas tool⁹, a study was conducted to pinpoint geographical areas with high water stress where the Group's facilities are situated. To bolster environmental conservation and

⁹ Aqueduct | World Resources Institute (wri.org)

lessen the impact on water resources, the Group diligently tracks its water usage. This monitoring is aimed at uncovering potential areas for more efficient water use and investigating possibilities for reusing process water, which in turn reduces the necessity for water disposal.

As presented in the table below, 4 out of 12 plants sits on high risks water areas, all located between China and India.

Country	Legal Entity	Location	Risk
Austria	TCG UNITECH Gmbh	Kirchdorf/ Rohr im Kremstal	Low
Canada	Gnutti Carlo Canada Ltd	Huron Park	Low-medium
Canada	Ljunghäll Canada Ltd	Huron Park	Low-medium
USA	Gnutti Carlo USA Inc.	Webberville	Low
Czech Republic	Ljunghäll S.R.O (Caslav)	Čáslav	Low-medium
Sweden	Gnutti Carlo Sweden AB	Kungsör	Low-medium
Sweden	Metallfabriken Ljunghäll AB (Södra Vi)	Södra-Vi	Low-medium
Italy	Gnutti Carlo S.p.A.	Macclodio	High
China	Gnutti Carlo (Wuxi) Engine Components Co., Ltd	Wuxi	Extremely High
China	Ljunghäll (Wuxi) Die-Casting Co., Ltd.	Wuxi	Extremely High
China	Jebesen TCG China	Dalian	Extremely High
India	Gnutti Carlo India Private Ltd	Ranipet	Extremely High

Due to its considerable scale, industry focus, and growth trajectory, the Gnutti Carlo Group produces also a significant amount of waste and scrap annually. Consequently, the Group has a longstanding commitment to the responsible handling and disposal of its waste materials. The table below illustrates the volume of waste generated by the entire Group over the three-year reporting period from 2021 to 2023.

Waste (t) ^[306-3; 306-4;306-5]

2023	2022	2021
------	------	------

Emulsion	9,671	7,952	4,128
Metal	5,514	5,336	5,396
Aluminium	2,774	2,404	2,277
Acqueous solutions	2,029	2,057	1,649
Commercial & Industrial waste	1,651	2,297	2,278
Steel	1,457	1,472	1,325
Liquid waste	1,200	6	17
Oil	853	1,097	981
Sludge	544	452	2,278
Wood	521	679	608
Chemicals	381	355	427
Paper	205	157	175
Plastic	199	166	230
Absorbent	143	175	146
Cardboard	130	116	179
Filters	10	17	12
Glass	8	17	25
Electronic	6	8	5
Acid	6	8	11
Battery	1	1	1
Total	27,304	24,770	22,146

The table indicates that in 2023, emulsions held the largest proportion of waste generated around 35%, primarily utilized in raw material processing, and metals around 20%. Aluminum contributed to 10% of the total waste in that year.

The total waste generated is classified into non-hazardous and hazardous waste. Hazardous waste accounts for around 57% of the total generated waste.



Circularity plays a pivotal role in the Gnutti Carlo Group's approach to waste management: around 76% of the waste generated between in 2023 was sent for recycling or reuse; only a small fraction was sent to disposal, either to landfills or incineration. The Group's ability to allocate a significant share of waste to recycling and recovery allows to generate value by reducing the potential costs and increasing benefits for the environment in line with the logic of circular economy.

As part of its commitment to improving operational efficiency and sustainability, the Group has implemented a range of initiatives aimed at optimizing waste management and minimizing waste generation.

These initiatives are designed to ensure proper handling and minimize the volume of waste produced:

- the use of recyclable packaging material, where possible;
- the beginning of a process of digitalization of Gnutti's workplace documentation to reduce the need and use of paper;
- the introduction of oil and water recovery systems from oily emulsions;
- the introduction of systems for the recovery of water from washing machines avoiding the disposal of liquid waste;
- the selection of waste disposers in accordance with legal requirements and based on localization in the area to reduce CO₂ emissions.



3.

**RESPONSIBLE HUMAN
RESOURCE
MANAGEMENT**

3. Responsible human resource management

3.1 Gnutti's People: our added value

The Gnutti Carlo Group recognizes the great importance played by its people in the success of the Group; therefore, it prioritizes the promotion and continuous improvement of the wellbeing, professional development, and occupational health and safety of its workforce.

With a global presence spanning across different regions, the Group acknowledges the crucial value that **diversity** brings to its operations: every site embodies a diverse mix of cultures and viewpoints, adding to the Group's shared wealth of knowledge. Therefore, the Group is dedicated to ensuring a context where this diversity can truly thrive, while being committed to guarantee the greatest working conditions to all its employees worldwide, encompassing health and safety, work-life balance and professional development.

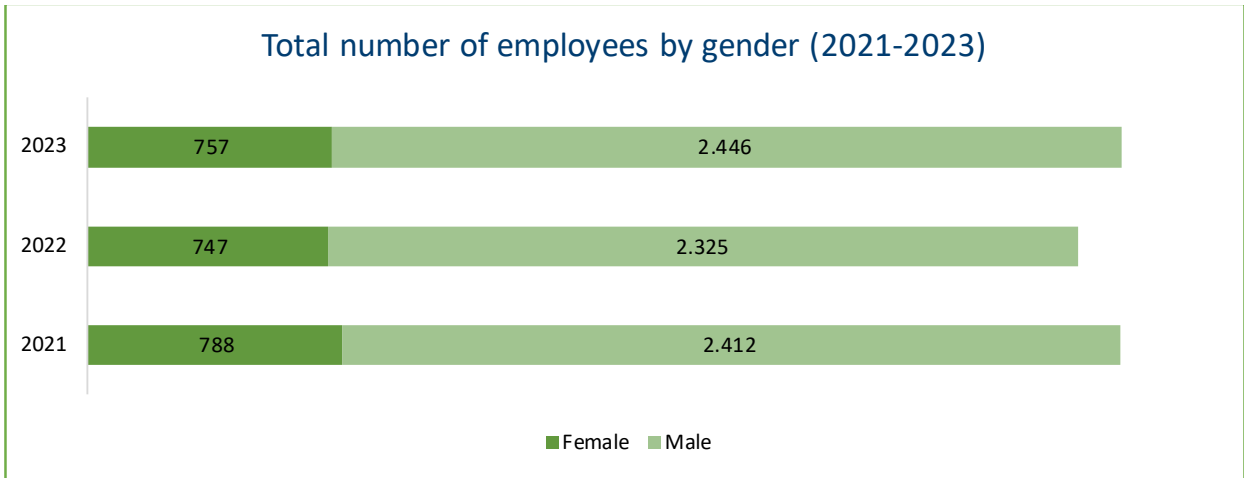
Regarding **health and safety**, the Group commits to protecting its workforce by implementing rigorous safety measures and protocols. This is achieved through comprehensive risk evaluations and efforts to reduce the incidence of workplace injuries and illnesses, all while strictly adhering to national and local regulations. Training is essential not only for reinforcing health and safety excellence but also for boosting the professional growth and expertise of employees: it helps aligning staff with shared values and objectives, thereby enriching the collective knowledge of the Group.

By prioritizing the wellbeing, career growth, and safety of its employees, the Gnutti Carlo Group enhances individuals' empowerment, fosters collaboration, while remaining attentive to meet its clients' needs. Indeed, its employees' talent, dedication and know-how are at the basis of the **strength** and the **adaptability** of the Group, as well as its capability to meet clients' demands and transform these needs into high-quality goods.

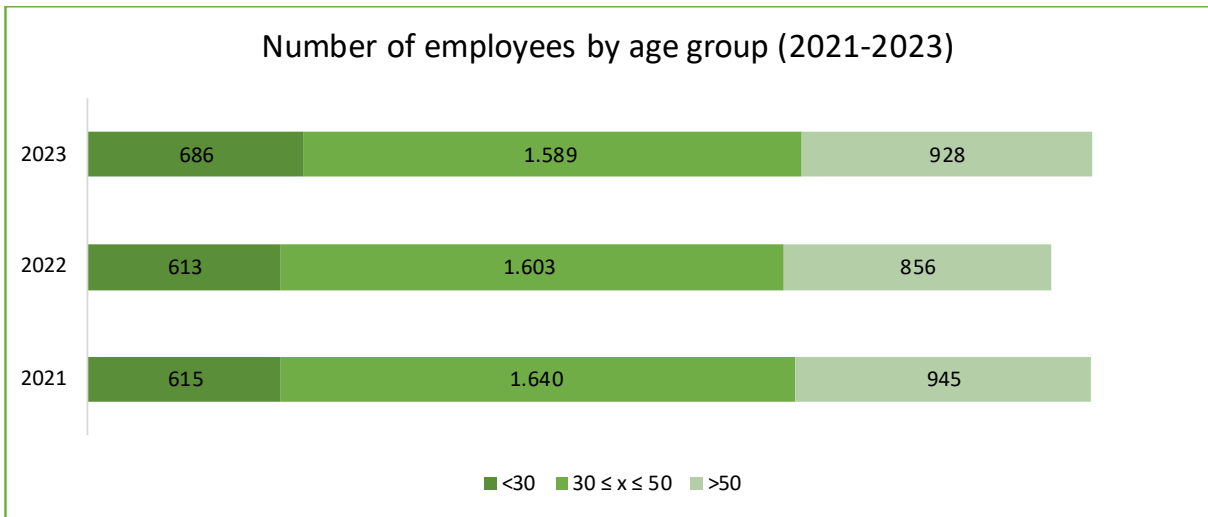
The composition of our workforce ^[2-7, 2-8, 2-28, 2-30, 405-1]¹⁰

As of 31st December 2023, the total workforce of the Group amounted to 3,203 employees. Throughout the reporting period 2021-2023, the overall number of employees remained consistent overall, registering a small decrease between 2021 and 2022 (4%), and an increase between 2022 and 2023 (4%). In 2023, men and women represented 76% and 24% of the workforce, respectively, reflecting the typical gender distribution seen in the automotive industry.

¹⁰ The total number of employees for 2022 have been restated based on more available information.



When looking at the age composition of the workforce, half of the employees is between 30-50 (50%); 29% of the employees are over the age of 50, and 21% of them are under the age of 30.



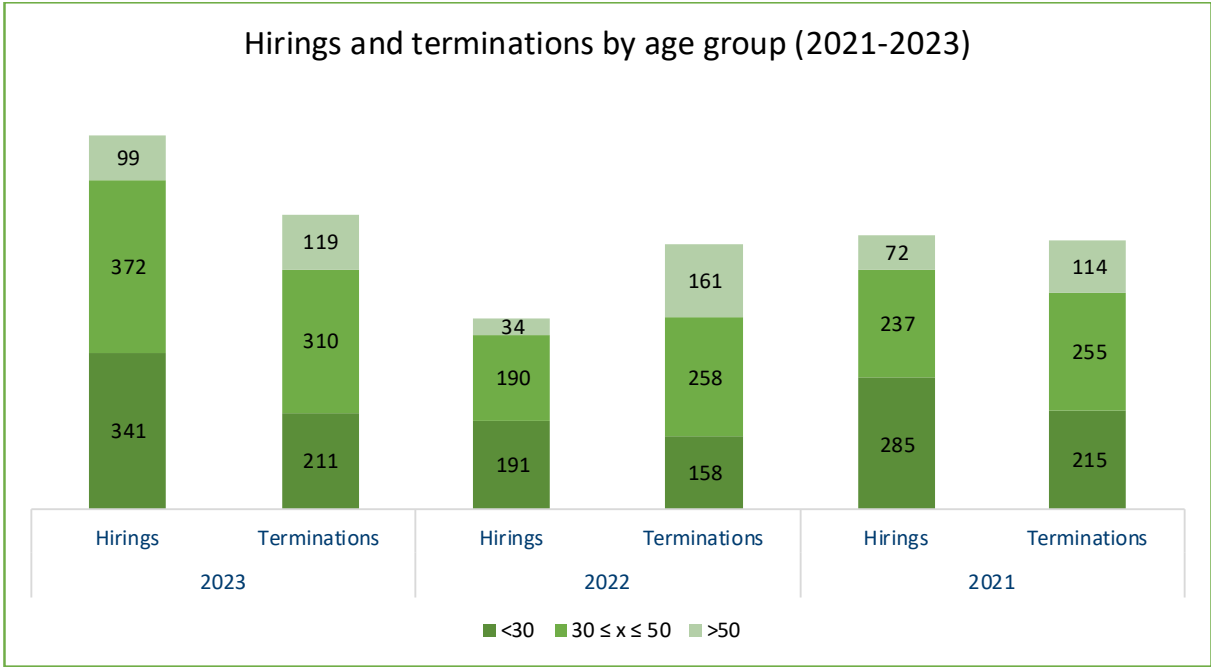
Concerning hires and terminations, in 2023 the turnover rate was of 20%, recording a slight increase compared to the previous two years. However, the hiring rate registered in 2023 was 27%, the highest registered in the three-year reporting period. This improvement is attributed to the successful implementation of measures aimed at enhancing communication, fostering a positive company culture, and upgrading infrastructure. As an example, in the plant of TCG Unitech Austria, the company canteen, social areas and meeting rooms have been revamped to create a more welcoming and functional environment for the staff.

It should be noted that the percentage of males in the overall hirings and terminations over the course of the three years reflects the composition of the workforce, which – as explained before – is predominantly male throughout the whole sector.¹¹

¹¹ The number of hirings and termination for 2022 have been restated based on more available information.

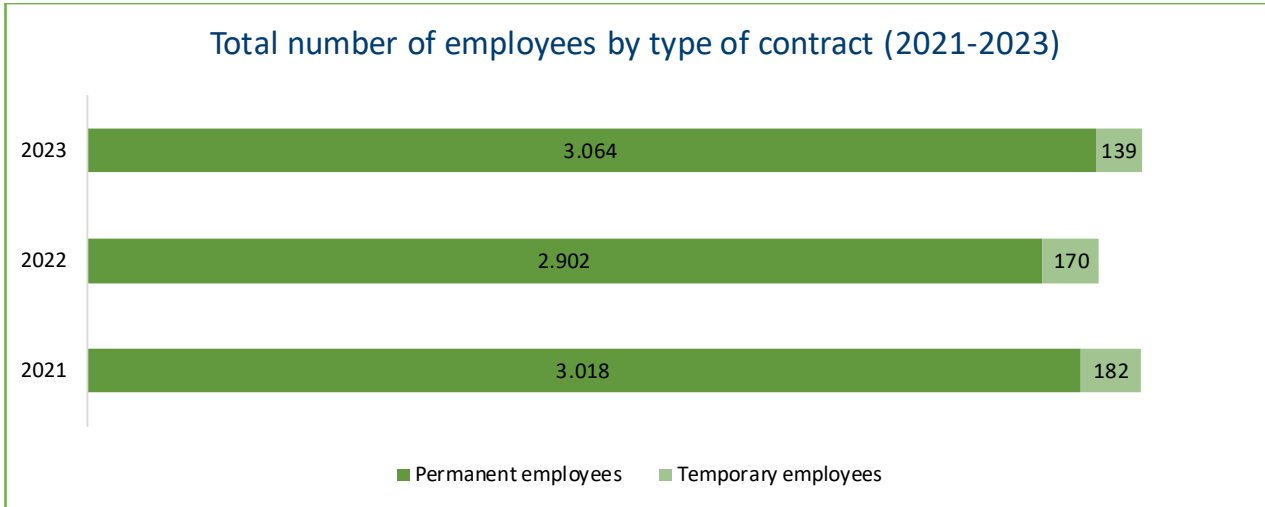


Examining the age-related trends in hires and terminations for 2023, it is observed that the majority fell within the 30-50 age bracket, followed by the under-30 age group and then by those above 50.

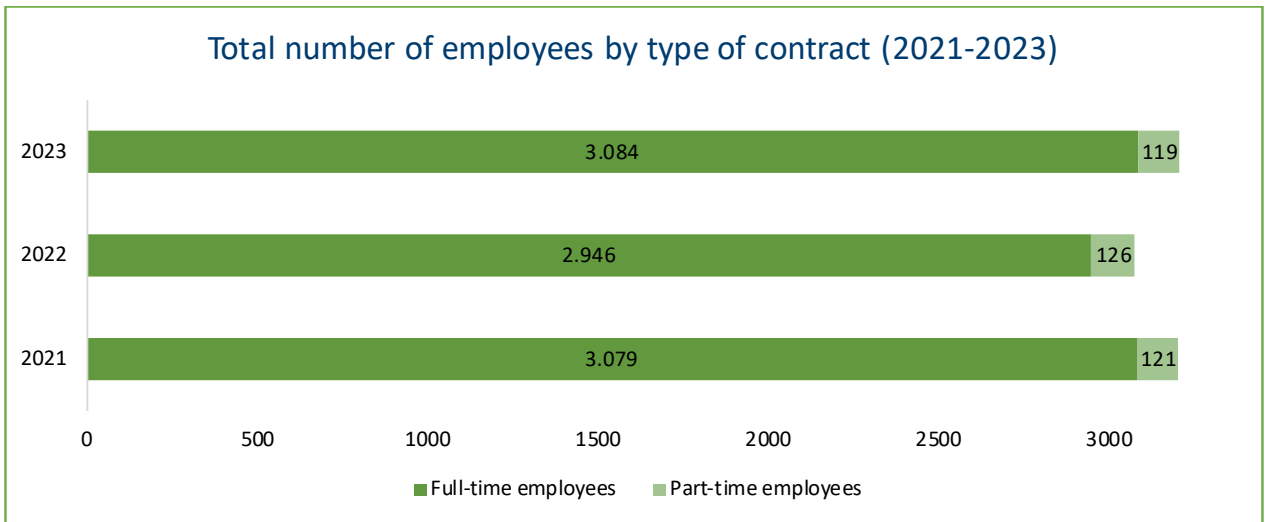


Regarding the contract type, the percentage of employees with permanent contracts has slightly increased in 2023 compared to the previous two years, rising from 94% to 96%. This data reflects

Gnutti Group's aim to establish long-term partnerships with its employees by promoting stability: by favoring permanent contracts over fixed-term ones, the Group wants to foster a sense of loyalty, commitment, and motivation, while allowing its employees to plan for their futures and make long-term commitments.



The percentage of employees with a full-time employment has remained stable throughout the three-year reporting period: between 2021 and 2023, 96% of the employees had a full-time contract, and 4% a part-time one. Part-time contracts offer employees the flexibility to manage their commitments and, in doing so, the Group also attempts to attract a broader range of talent and individuals with need for greater flexibility.



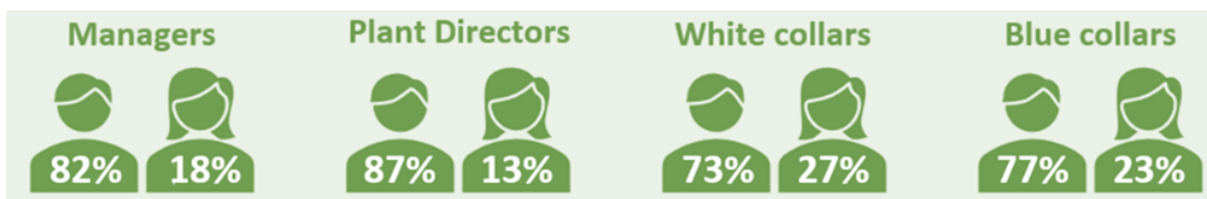
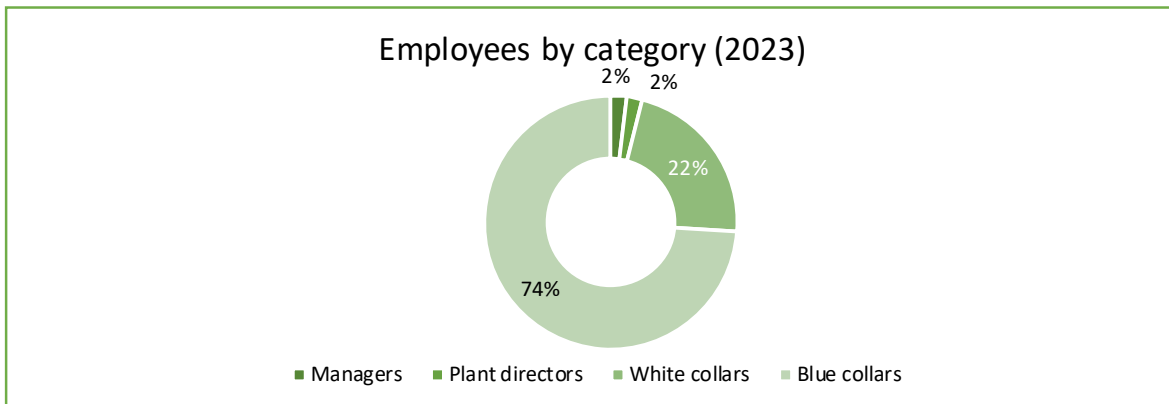
During the three-year period 2021-2023, the Group did not employ any non-guaranteed hour employees. However, it does engage in collaborations with external individuals, predominantly temporary workers. These individuals are recruited to provide support during peak periods or when additional production lines are required throughout the year. This strategic approach allows the

Group to efficiently manage its workforce, ensuring flexibility and responsiveness to fluctuating demands while maintaining a core team of permanent employees¹².

Workers who are not employees (HC) ^[2-8]

	2023	2022	2021
Temporary workers	922	1,066	1,043
Self-employed workers	-	3	3
Interns	-	-	5
Total	922	1,069	1,051

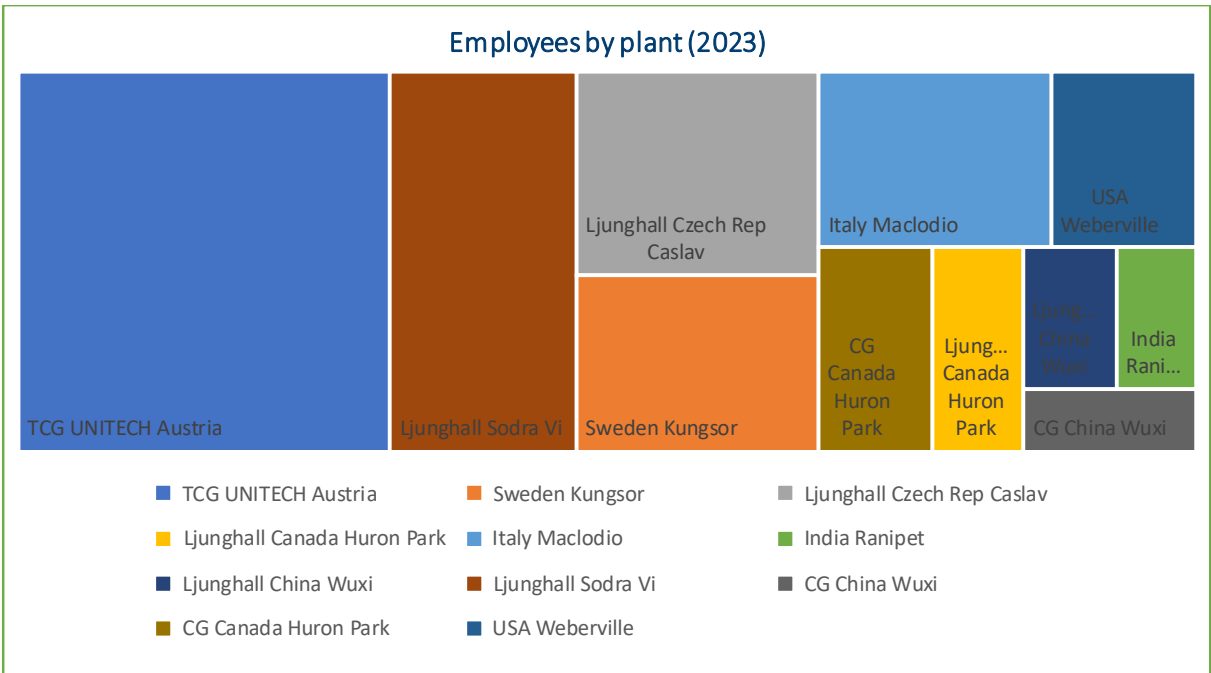
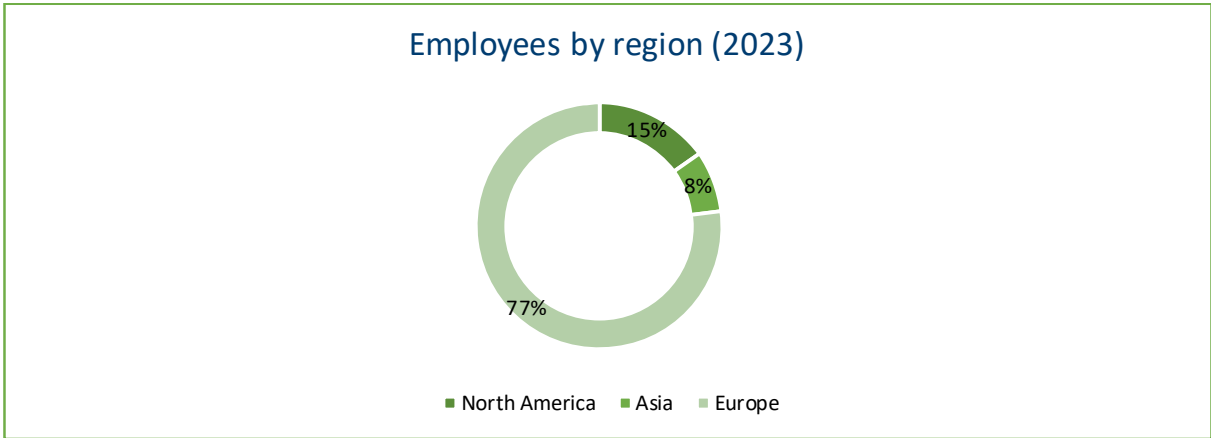
As per job categories, most of the workforce is represented by blue collars (74%), coherently with the prominence of the production activities. Blue collars are followed by white collars (22%), plant directors (2%) and managers (2%). The category of white-collar employees encompasses both individuals working in the plant offices and those employed at corporate level.



The Gnutti Carlo Group’s worldwide presence is instrumental in fostering diversity, as it allows the Group to tap into varied pools of talent, thereby acquiring a broad spectrum of abilities, insights and viewpoints. In this regard, the majority of the Group’s employees are in Europe (77%) and, more specifically, employed at TCG Unitech GmbH (32%) and Metallfabriken Ljunghäll AB (16%) plants. A smaller share of the workforce works in North America (15%) at Gnutti Carlo Canada Ltd (5%), Gnutti

¹² In terms of collective bargaining, 85% of employees are covered by collective bargaining agreements, in accordance with national legislation.

Carlo USA (6%) and Ljunghäll Canada Ltd. (4%). Finally, the smallest share (8%) of employees lives and works in India and China.



3.3 Growing Together: Employee Training and Development

The Gnutti Carlo Group places a strong emphasis on offering **educational opportunities** to its workforce, enhancing their capabilities to meet changing demands and attain outstanding performance. As a result, our training agenda is meticulously planned to span over a three-year period from 2023 to 2025, ensuring ample coverage of training hours. The acquisition of knowledge and skills is crucial for both personal and career development, and the Group gives high priority to providing comprehensive training programs that encompass both hands-on and theoretical learning.

Through these educational efforts, the Group aims to provide its workforce with the necessary tools and expertise to excel in their roles. **Practical training** allows staff to acquire direct experience, to refine their skills and gain a more profound comprehension of their responsibilities. As part of this continuous improvement, some specialized training sessions are delivered to coincide with the launch of new projects or machines, incorporating operator training as a fundamental aspect of the process validation phase. In addition, most training programs are regularly revised to include basic instructions for new equipment and in-depth training for existing configurations. For instance, in the Ljunghäll, Čáslav, Czech Republic, trainings on health and safety, environmental regulations on waste and air pollution and quality are delivered every two years, to ensure that all employees remain informed. Concurrently, this plant has initiated a pioneering **trainee program**, which is presently in effect. The program initially welcomed two trainees, with one concentrating on quality management and the other on sales. By 2023, both participants had progressed to senior roles, thus demonstrating the efficacy of the program, which will probably be replicated in the upcoming year. In parallel, TCG Unitech Austria has implemented a comprehensive training program aimed at enhancing the leadership and communication skills of managers and key personnel within the production department; the curriculum is tailored to foster soft skills and cultivate effective communication techniques. Additionally, the apprenticeship program of this plant has seen a notable expansion, increasing its intake from ten to twelve students specializing in mechanical and electrical fields. This program has been met with great success and involves an extensive training period of three to four years.

The Gnutti Carlo Academy

The Gnutti Carlo Academy is the pivotal educational hub of the Group, and it provides a **centralized training platform** for employees at all levels, from new apprentices to top managers.

The Academy's **goal** is to ensure that every individual within the organization is equipped with role-specific certifications, thereby fostering a culture of continuous learning and knowledge sharing across the Group. By offering customized educational tracks, the Academy not only aims to support the expertise and abilities of its workforce but also to create a structured qualification system for the Mini Factories, the Supporting Functions and the Managerial roles. For the Group, in fact, training and learning are about transforming behaviour, shaping mindsets, and achieving new outcomes. As a result, the Academy has emerged as a strategic asset that forges a vital connection between training initiatives and the broader Company Organization. This started as pilot project within the Powertrain division and, following its success, the approach was replicated within the TCG Unitech division, capitalizing on these experiences to expand the Academy's influence across the whole Group.

The training pathways are designed as an integration of:

- **classroom training** to acquire basic knowledge;
- **e-learning modules** accessible through the Group's Learning Management System (LMS) to acquire skills on methods and tools;
- **on-the-job training** that adheres to the Training Within Industry (TWI) approach, to gain practical abilities.

This latter was firstly introduced in 1940 by the US Department of War and it offers a hands-on approach to training, educating, and coaching that is especially beneficial for supervisors, team leaders, and frontline workers. The enduring value of TWI lies in its unique method that efficiently and consistently equips frontline personnel with the skills they need.

The training programs are delivered through classroom sessions led by internal trainers who have undergone a dedicated certification process: the '**Train the Trainers**' program, offered by the Group, which provides them with the necessary knowledge to effectively guide trainees in their educational journey.

The Academy's Mini-Factory certification program is meticulously crafted to function as a conduit for employee career advancement. Achieving each level of certification is an essential stepping stone for progression within the organizational hierarchy. The requisite certifications for operators are delineated by a structured skill matrix that stratifies roles into three distinct tiers: A, B, and C.

This developmental trajectory commences with an all-encompassing Induction program, entailing a 10-hour training module that must be completed by new recruits within their initial two weeks of employment. Subsequently, Associates at level A are obliged to engage in an additional 12 hours of training, aiming for universal completion across the A-tier cohort.

For Associates at level B, the program prescribes a supplementary 14 hours of training to further their proficiency. In parallel, Associates at level C are also expected to enrich their expertise with an incremental 14 hours of training, ensuring that each segment of the workforce is equipped with the knowledge and skills pertinent to their respective roles.

Through this **integrated training framework**, the Gnutti Carlo Academy ensures that employees not only receive the requisite certifications for their current roles, but they are also prepared for upward mobility within the organization, fostering a culture of continuous improvement and professional growth.

With a global network of 35 Mini Factories, the Gnutti Carlo Group has successfully involved 2,700 individuals in its comprehensive training programs, spanning across six indirect roles and three direct roles. This extensive engagement highlights the Group's dedication to cultivating a proficient workforce, with the Academy playing a crucial role in achieving Operational Excellence on a global scale.

In addition to the internal training programs, the Group has also initiated a partnership with an external provider to focus on the training of the executives. This collaboration has led to the development of a program that includes webinars and live sessions on critical topics such as cybersecurity, purchasing, and supply chain management, among others.

Alongside the Gnutti Carlo Academy, each plant offers a diverse range and tailored training programs that cover topics, including as health and safety, specialized manufacturing processes (e.g., die-casting, machine use), product quality, internal auditing, and ISO certifications.

The total hours of training have increased by 103% between 2021 and 2023; parallel to the total number of training hours, the average number of training hours per capita also increased from 9 in 2021 to 18,1 in 2023 (101%). A significant reason for this increase is tied to the large number of training hours devoted to the onboarding of new operators (see high number of new hires in the table above). For 2024, it is foreseen a return to the average 2021-2022 numbers.

Total training hours (h)

	2023	2022	2021
Total training hours	58,514	34,661	28,865

The Gnutti Carlo Group places significant emphasis on its **onboarding program** as an essential component of its training framework: indeed, the growth of the Group and its strategic acquisitions have highlighted the need for a thorough orientation process for all new hires. This customized program aims to equip each new employee, as well as those transitioning to different machinery, with relevant information about their role, helping them understand the Group's structure and hierarchy, the nuances of the automotive market, principal products, and present and forthcoming challenges. This approach ensures that new team members can rapidly familiarize with the existing dynamics, fostering a sense of involvement and cultivating their enthusiasm from the outset.

As part of this process, every new hire, regardless of their role or department, must undergo the **Induction Program** offered by the Gnutti Carlo Academy. The program provides a comprehensive understanding of key subjects, including the Group overview, Quality, Lean principles, and Standard Work. Additionally, for higher-level roles, a detailed two-week schedule is arranged to enhance their insight into their responsibilities and the synergy across the company.

Our Lean Journey

In the pursuit of continuous improvement, the Gnutti Carlo Group embarked on a Lean Transformation Journey aimed at reducing any kind of waste in its internal processes. The main goal is to simplify operations by integrating a Lean culture into the creation of new processes. The Lean Methodology is indeed a business strategy centered on delivering greater value to customers using fewer resources, with a dedicated commitment to respecting individuals. The value of employees is deeply recognized, as well as their involvement in decision-making processes, as they are directly involved with the work and possess insightful suggestions for enhancement.

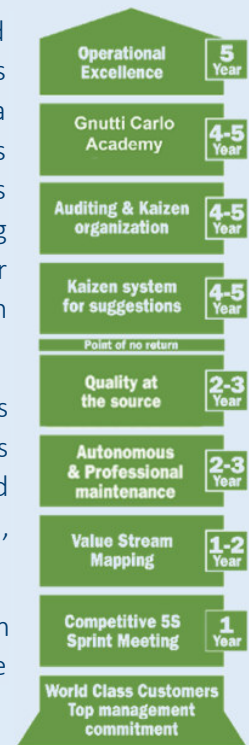
The active participation of the Group's staff is therefore crucial to the success of this project, which is implemented through the "Space Shuttle" that involves a lean approach throughout the entire value chain, involving suppliers and customers. The latter applies lean principles throughout the entire value chain, from suppliers to customers.

As part of Gnutti commitment to continuous improvement within the Lean framework, a new Suggestion Program has been launched. This initiative invites employees to contribute their ideas and insights, which can range from qualitative to quantitative enhancements, encompassing process optimizations as well as health and safety recommendations. By leveraging the diverse perspectives of our team members, Gnutti aims to foster a culture of innovation and collective problem-solving that will benefit the entire Group. The scope of the program encompasses a variety of areas including Health and Safety (H&S), as well as other rolling fields such as efficiency, quality, and cost-saving initiatives. To facilitate this program, Gnutti has set up a Suggestion Box and provided a Suggestion Form to make it easy for employees to submit their ideas. Each suggestion will undergo a rigorous evaluation process, starting with an initial review by the technical function involved. Following this, a multi-functional committee will conduct a second evaluation to ensure a diverse range of perspectives is considered. The initiative aims to boost motivation, enhance operational performance, improve safety conditions, and expand employee expertise.

This Lean Journey is based on **seven principles**:

1. It is introduced and implemented through a top-down approach, involving a constant commitment of the management;
2. It is established on the continuous contribution from all people within the Group;
3. It aims to set up a visible and transparent system;
4. It requires methods, tools and standards that must be rigorously applied;
5. It is a way of working, not a project;
6. It is reinforced and developed with the involvement of everyone's concerned;
7. It is effective as it aims to 'keep it simple'.

The G.E.A.R. (Gnutti Excellence Achieving Roadmap) is the key metric used to measure the performance of the lean approach at plant level. This audit system is structured around a meticulous timeline with specific objectives and its success is quantified using appropriate Key Performance



Indicators (KPIs). This ensures that each phase of the audit is given the necessary attention and resources, leading to a thorough and effective evaluation of the plant's adherence to the lean approach.

3.2 Working environment ^[403-1,2,3,4,5,6,7,9]

The Gnutti Carlo Group is dedicated to ensuring the **wellbeing and safety** of its workforce, endeavoring to establish a workplace that reduces hazards by applying strict safety measures and protocols. The Group's comprehensive safety protocols cover every aspect of its processes, from equipment handling to hazardous material management; risk assessments are regularly conducted to identify potential risks and take proactive measures to mitigate them. Additionally, the Gnutti Carlo Group acknowledges the key role that education and awareness play in preventing accidents and work-related injuries. Therefore, it provides comprehensive training to all staff members to guarantee they are all well-informed about safety procedures. Indeed, as a leading manufacturer of automotive components, the Group recognizes that its success is built upon the well-being and dedication of its workforce. The Group is strongly convinced that employees who are assured of their safety and supported by their employer are more likely to excel in their roles, leading to the production of high-quality goods and fulfilment of customer expectations.

The Gnutti Carlo Group has implemented an effective approach to manage health and safety issues as mirrored in its **Health, Safety, Quality, and Environmental Policy**. Endorsed by the CEO of the Gnutti Carlo Group, this policy has been distributed to all employees and contractors and is available on the Gnutti Carlo Intranet and website¹³. The company is committed to upholding the highest health and safety standards for its workforce and has embraced a systematic approach in planning and evaluating work environments. This approach considers legal requirements, risk analysis, and ergonomic factors using methodologies, including Occupational Repetitive Action (OCRA) and NIOSH Manual of Analytical Methods, ensuring risks and hazards that could occur in any sector are monitored and evaluated properly. The first approach is a technique used to assess employees' exposure to activities carrying risk factors for musculoskeletal disorders affecting the upper limbs. The second encompasses a set of methods for collecting and examining pollutants found in the air or on surfaces in the work environment. It considers repetitiveness, force, uncomfortable positions, insufficient rest periods, and additional exacerbating factors.

The safety measures and guidelines implemented by the Group are highly important in view of the specificities of the Group's sector: heavy manufacturing operations involve processing hazardous materials and substances, whose handling, storage, and disposal require strict adherence to protocols to prevent accidents, spills, and exposure. Furthermore, the use of heavy machinery in these processes introduces the potential for mechanical breakdowns, equipment-related injuries, and human error. This underscores the essential need for adequate procedures and thorough training to safeguard against such risks. The Group has undertaken several **initiatives to enhance individual and collective health and safety standards**. To bolster forklift safety, the Group has implemented enhancements in forklift signalling to reduce the risk of collisions. To streamline material handling and alleviate physical strain on workers, the Group has introduced weight zeroing

¹³ [GNUTTI CARLO SpA - Quality, Health, Safety, and Environmental Policy](#)

systems, integrated manual forklifts and issued guidelines to suppliers regarding the maximum load limits for each packing unit.

To tackle **ergonomic issues**, the Group conducts regular ergonomic audits to assess the workstations and identify opportunities for enhancement; moreover, regular meetings are convened to discuss on the matter. Technical staff members are provided with specialized training to examine ergonomic aspects when designing workspaces, and comprehensive training programs are delivered to provide employees with the necessary knowledge and understanding of ergonomic issues. On ergonomic issues, in the plant of Maclodio, specialized training activities were carried out in 2023 and extended to staff of the engineering department to ensure preparation for any situation and to respond effectively in times of need. Finally, in line with the DVR (Document of Risk Assessment), the company conducts monthly reviews of the safety and ergonomics improvement plan. A key focus of these reviews is the proactive reporting of near misses: to facilitate this, ATS Brescia has installed two notice boards where employees can report such incidents, thereby fostering a culture of safety and prevention.

Moreover, the Maclodio facility has engaged in an initiative promoted by Brescia ATS (Italian healthcare agency), aimed at fostering the health and well-being of employees beyond the work environment. This project underscores the significance of maintaining a balanced diet, abstaining from smoking and committing to regular physical activity. Over the past two years, the program has actively involved employees in a series of actions leading to annual certification. As an integral part of the Workplace Health Promotion efforts, ATS Brescia has encouraged the involvement of their employees and their families in the Brescia Art Marathon, promoting physical activity and community participation.

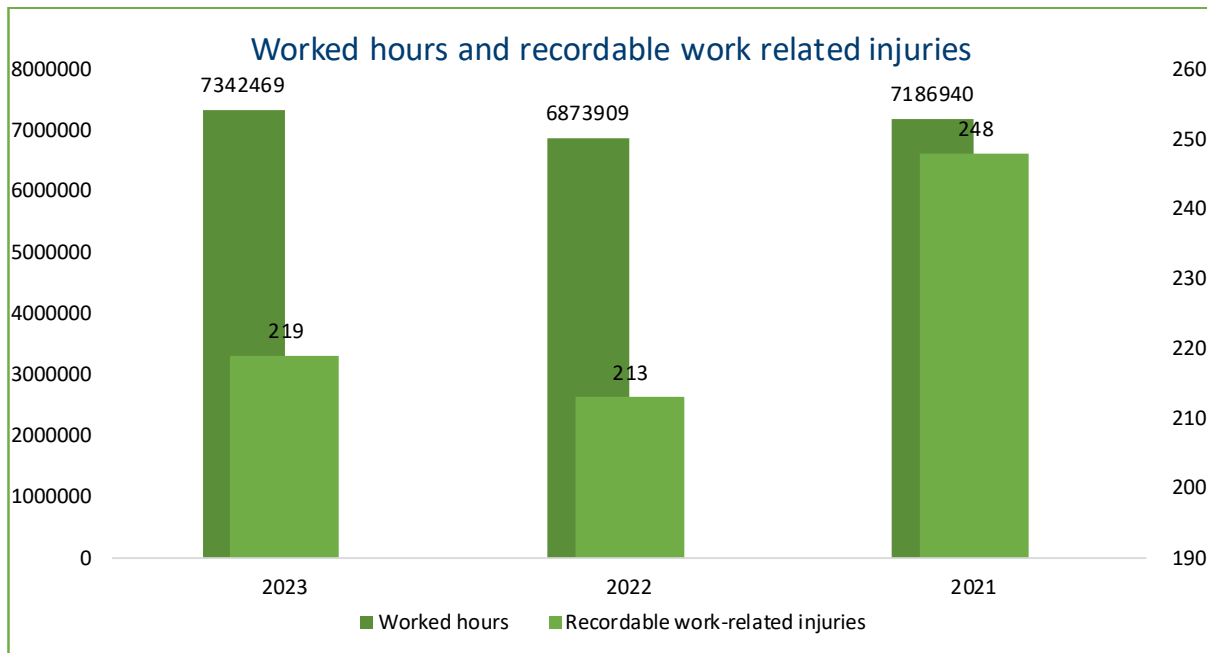
Concurrently, at the plant of TCG Unitech Austria, the Group has implemented a specialized training program focused on the correct application of fire extinguishers. This initiative has successfully imparted essential safety knowledge to 80% of the workforce. Moreover, the annual 'Health and Safety Day' continued in 2023, an event designed to raise awareness regarding the paramount importance of these issues within the facility.

In its pursuit to promote health and prevent workplace incidents, the Ljunghäll Sweden plant in Sodra Vi has established a partnership with local fitness centres, granting employees unrestricted access to training facilities throughout the year. The plant also collaborates with Avonova, a company specializing in occupational health services, offering staff the opportunity to seek treatment for a variety of work-related health concerns. To further safeguard employee well-being, the facility provides continuous medical examinations for those who work nocturnal shifts, handle hazardous chemicals, or operate vibrating hand tools.

Gnutti Carlo Italy has been at the forefront within the Group, leading by example since 2003 with its certification under the **ISO 45001** standard. In line with its dedication to health and safety, the Group proactively engages in regular independent third-party audits of its Management System. Building on this milestone, all TCG Unitech plants also secured ISO 45001 certification, while Gnutti Carlo Sweden achieved ISO45001 certification in 2022, reinforcing the Group's commitment to upholding strong health and safety standards. Concerning health and safety **KPIs**, it should be noted that a system of constant monitoring has been implemented regarding the frequency of workplace accidents, which

accounts for both permanent employees and non-permanent collaborators (such as temporary workers in production facilities).

The total number of **work-related injuries** in the reporting period 2021-2023 is thoroughly monitored by the Group and it records injuries incurred by both employees and external workers. The number of accidents decreased by 12% between 2023 and 2021, thus demonstrating a significant improvement in the workplace safety; of the 219 injuries which occurred in 2023, eight occurred during commuting¹⁴, 175 involved employees while the remaining 44 involved external workers. Most of the accidents in the three-year period were represented by shocks, lacerations, slips and falls, burns, eye injuries, crush injuries¹⁵.



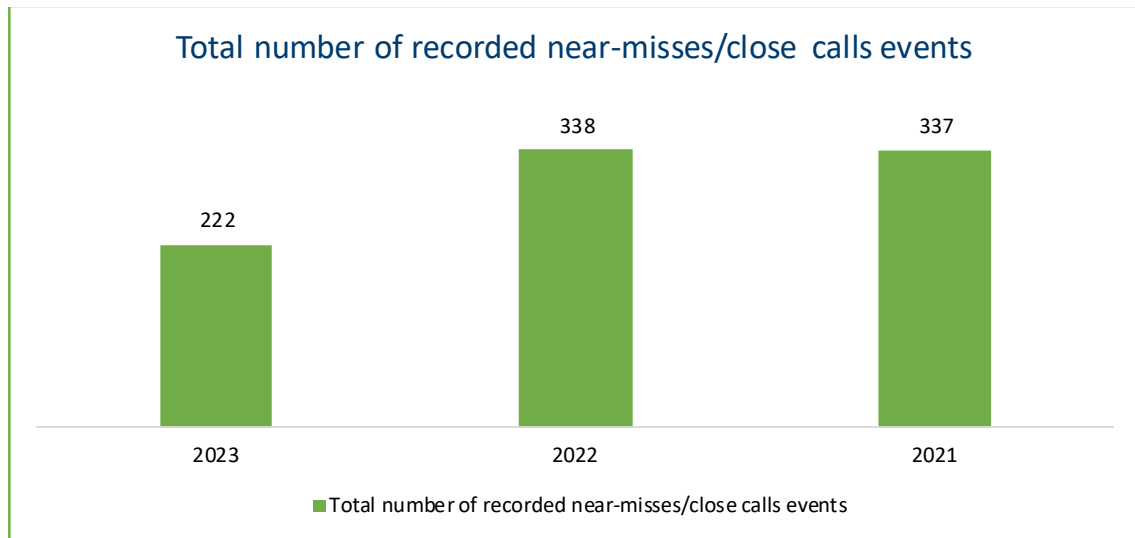
In parallel with the overall number of injuries, the **rate of recordable occupational accidents**¹⁶ has decreased between 2022 and 2023, going from 31.0 to 29.8 (-4%), calculated based on worked hours. In 2023, worked hours amounted to 7,342,469, in a significant increase compared to 2022 (+7%) a slight increase over 2021 (+2%).

Prevention is at the core of the Group’s health and safety management strategy, and therefore near-miss events are particularly monitored. This monitoring of close calls enables the identification of areas for enhancement and the implementation of corrective measures, if necessary. The number of close-call events has remained stable between 2021 (337) and 2022 (338), while it had significantly dropped between 2021 and 2023 (222).

¹⁴ GRI disclosure 403-9 requires the organization to disclose injuries because of commuting incidents only in cases where the transport has been arranged by the organization (e.g., company or contracted bus or vehicle).

¹⁵ It should be noted that in the three-year reporting period no fatality occurred.

¹⁶ Rate of recordable occupational accidents has been calculated as the total number of recordable work-related injuries over the total number of worked hours multiplied by 100.000.



To promote employee well-being, the Maclodio and the TGC Unitech Austria plant have taken proactive steps to enhance team cohesion and employee engagement through the introduction at TCG of the "TCG Together" program, an initiative that provides a defined budget per employee annually, specifically for team-building activities. Maclodio plant also hosted an Open Day event, welcoming the families of employees and members of the local community.

In addition, throughout the year the Gnutti Carlo USA facility in Webberville, Gnutti Carlo Canada and Ljunghäll Canada in Huron Park have been instrumental in fostering a strong community spirit among their employees through the organization of seasonal events: these have included summer barbecues, lunches, and the annual Christmas banquet. The plants have also initiated programs to acknowledge the service of veterans employed at the facilities.

To involve the employees of the Gnutti Carlo Sweden plant in Kungsör and to promote team building, a photography contest was launched, inviting employees to document and share impactful moments of their colleagues within their workspaces. The initiative proved to be a resounding success, and the selected photographs that best captured the essence of their work environment are now displayed in various sections of the plant.

3.4 The Gnutti Carlo's social footprint

The Gnutti Carlo Group acknowledges the importance of its **social responsibility**, and thus commits to annual participation in social activities and charitable contributions. The Group's influence reaches well beyond its business activities as it endeavors to make meaningful difference in the lives of people and communities by engaging in social projects and providing financial support. With a worldwide presence of facilities and offices, the Group is keenly aware of the importance of interacting with local communities and addressing their unique requirements. By embarking on these ventures, the Group aspires to contribute to the overall well-being and development of these communities.

In the realm of healthcare, the Group has a longstanding partnership with the Croce Bianca organization in Brescia, Italy, and has conducted defibrillator training programs, training 35 individuals in 2022 to enhance community access to life-saving equipment. Similarly, the TGC Unitech

Austria plant has a sponsorship partnership with the Red Cross, demonstrating a strong commitment to community health and well-being. The promotion of health and vitality extends to the Group's patronage of sporting endeavors: the TCG Unitech Austria plant endorses local football and table tennis teams, inclusive of uniform procurement. Canadian facilities champion youth athletic programs, while the Ljunghäll plant in Sweden, in collaboration with Teknikcollege, orchestrates sporting events for the youth, accentuating the significance of technical education.

The Group's commitment to cultural patronage is equally pronounced, with the Maclodio plant underwriting the Progetto Brescia Cultura, which aids in establishing the Cultural Museum of Brescia. This is part of the Group's wider mission to enhance the cultural vitality of the communities it serves.

Education and vocational mentorship lie at the heart of the Group's community engagement. The Ljunghäll Caslav plant in the Czech Republic administers instructive and developmental activities for young scholars, including on-the-job training sessions. The TCG Unitech Austria facility welcomed students to witness manufacturing processes firsthand, and both the Canadian and Swedish plants host high school students for informative tours, shedding light on the company's inner workings. The Maclodio plant bestows scholarships upon meritorious local students, and Gnutti Carlo USA forges partnerships with regional colleges to foster internship prospects.

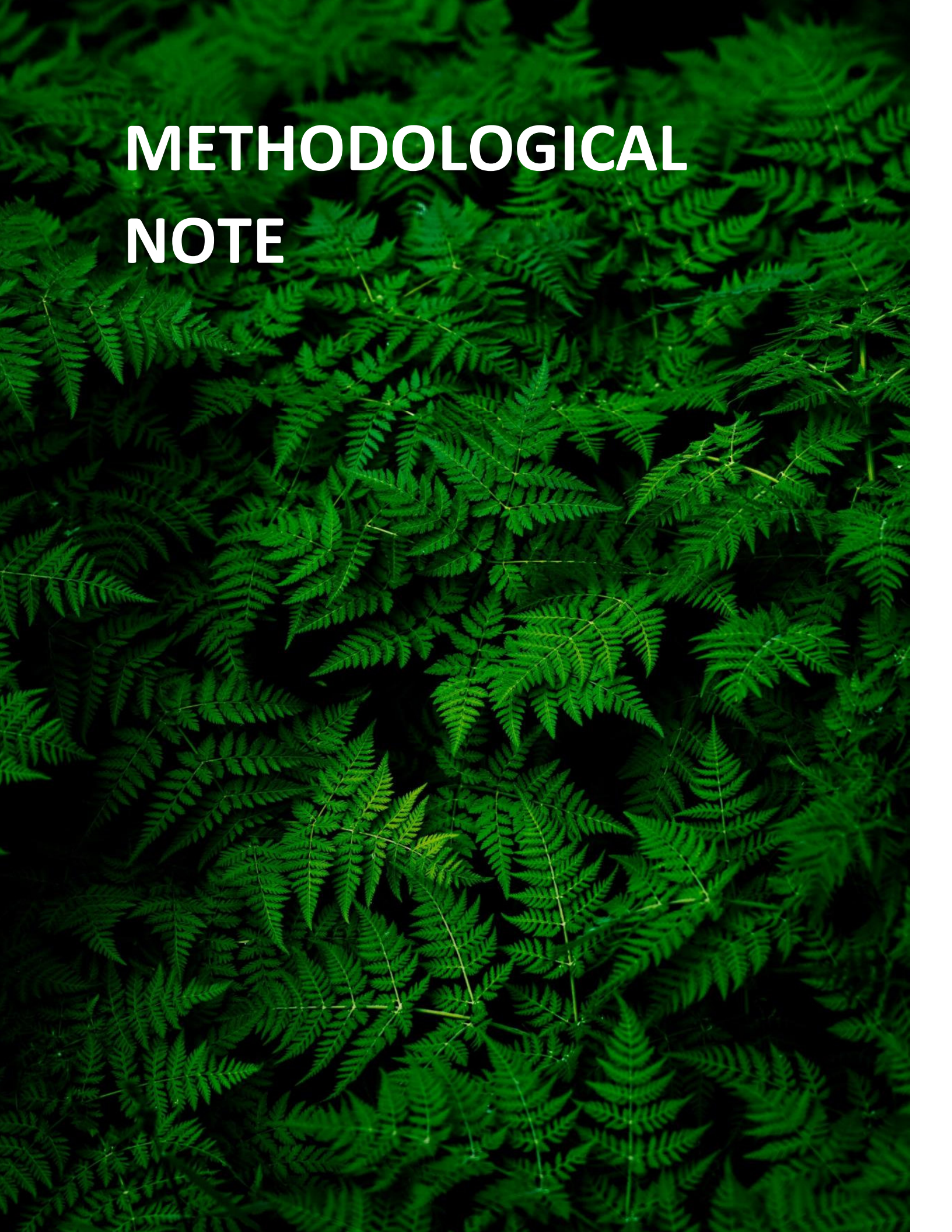
The Gnutti Carlo Sweden plant actively cooperates with neighboring educational establishments to delineate career paths and skills development necessary for working within the plant: an Employer Brand team coordinates study visits and develops targeted school visit programs. The plant is also committed to participating in local activities in Kungsör and will organize an open house in October 2024 in collaboration with the municipality, further solidifying its commitment to community integration and social sustainability.

The Group doesn't overlook the needs of vulnerable groups: for example, the Ljunghäll Caslav plant has raised funds for specialized equipment for a disabled girl and regularly gifts to those with mental disabilities. The plant has also gone to great lengths to welcome Ukrainian workers, providing resources in Ukrainian and employing Ukrainian trainers and specialists. The Ljunghäll plant in Sweden is involved with Additivt Teknikcenter, offering industry-related courses and is engaged in a project to advance manufacturing skills. It also works with a local Integration Unit to help new arrivals in Sweden gain the skills needed for the manufacturing industry.

Through these varied efforts, the Gnutti Carlo Group aims to positively influence the well-being and growth of communities, reinforcing its identity as a responsible business committed to the ongoing support of social sustainability.



METHODOLOGICAL NOTE



Methodological note

Reporting principles and criteria

Gnutti Carlo Group's 2023 Sustainability Report has been prepared in accordance with the GRI Standards 2021. Contents of this Report reflect the results of the materiality analysis as defined by the Standards, as well as the disclosure practices on the Group's material topics.

Scope of reporting ^[2-3]

The present Sustainability Report details objectives, actions, and key performance metrics relating to the period between January 1st, 2023, through December 31st, 2023, and it is updated annually. Moreover, as of this Report's publishing date, no noteworthy event occurred in 2024 that necessitates reporting beyond what has already been described. The drafting process of this Report enabled the Group to strengthen its awareness and commitment towards ESG topics and impacts.

The scope of the reporting includes the following legal identities of the Group¹⁷:

- Gnutti Carlo S.p.A., Maclodio, Italy;
- Gnutti Carlo Sweden AB, Kungsör, Sweden;
- Gnutti Carlo Canada Ltd, Huron Park, Canada;
- Gnutti Carlo India Private Ltd, Ranipet, Tamil Nadu, India;
- Gnutti Carlo (Wuxi) Engine Components Co., Ltd., Wuxi (Jiangsu), Xishan, China;
- Gnutti Carlo USA Inc., Webberville, United States.
- Metallfabriken Ljunghäll AB, Södra VI, Sweden;
- Ljunghäll s.r.o., Čáslav, Czech Republic;
- Ljunghäll (Wuxi) Die-Casting Co. Ltd, Wuxi City, China;
- Ljunghäll Canada Ltd, Huron Park, Canada;
- TCG Unitech GmbH, Kirchdorf an der Krems, Rohr im Kremstal, Micheldorf, Austria;

Quality reporting principles ^[2-5]

In accordance with the reporting principles defined by the GRI Standards 2021, the Gnutti Carlo Group's 2023 Sustainability Report adheres to the criteria of accuracy, balance, clarity, comparability, completeness, sustainability context, timeliness, and verifiability. Compliance with the requirements of the GRI Standards 2021 enables the Group to ensure the correct representation of information, with a high degree of detail and quality of the data reported, thus allowing readers to objectively assess the Group's performance and contributions towards sustainable development.

This Sustainability Report is not subject to external assurance.

Calculation methodologies and assumptions ^[2-2]

Below are described methodology and assumptions used to compute the indicators of this Report:

¹⁷ As specified in Chapter 1, the Group also comprises one sales manager center in Germany (Gnutti Carlo Germany Powertrain division), and one customer support location in the United Kingdom (Gnutti Carlo UK Ltd), both not included in the reporting perimeter of this 2023 Sustainability Report.

- data related to injuries refer to the Group's employees and contractors. Commuting injuries where the employee/contractor used their own means of transportation, and first aid cases are not included, as per guidance from the GRI Standards;
- the rate of recordable work-related injuries has been calculated as the total number of injuries divided by the overall number of hours worked in the reporting period and multiplied by 1,000,000;
- The total number of employees and the number of hirings and termination for 2022 have been restated based on the availability of more accurate data;
- For 2022 and 2021 Gnutti Carlo India Ltd only tracks training hours provided within Gnutti Carlo Academy and not the overall training hours;
- For specific cases, data regarding the number of employees, hires and terminations have been estimated. In particular:
 - Ljunghäll Canada Ltd 2021 and Gnutti Carlo India Ltd 2021 and 2022 permanent and fixed term employees have been estimated due to the lack of information;
 - Gnutti Carlo USA 2021 and 2022 hirings and terminations have been estimated based on the total number of employees over the years.
- Gnutti Carlo S.p.A. sets a threshold for significance of monetary fines at € 10,000.

Whether and how the consolidation process of information differs across the disclosures, it has been appropriately highlighted through footnotes within the text.

The following table shows the conversion factors that have been used to perform energy consumption calculations and estimates:

Typology	U.o.M.	Source
Fuel density	l/t	UK Department for Environment, Food & Rural Affairs (DEFRA), Conversion factors – Full set, 2021, 2022, 2023
LCV (Lower Calorific Value)	GJ/t	UK Department for Environment, Food & Rural Affairs (DEFRA), Conversion factors – Full set 2021, 2022, 2023
Volume	US gallon/l	UK Department for Environment, Food & Rural Affairs (DEFRA), Conversion factors – Full set, 2021, 2022, 2023
Volume	Cubic feet/m ³	UK Department for Environment, Food & Rural Affairs (DEFRA), Conversion factors – Full set, 2021, 2022, 2023

Scope 1 emissions were calculated as follow:

GHG emissions – Scope 1			
Source	Activity data	Emission factor	GWP
Car fleet	Fuel consumption (petrol and diesel)	UK Department for Environment, Food & Rural Affairs (DEFRA), Conversion factors – Full set, 2021, 2022, 2023	CO ₂ equivalent.
Fuels for heating and melting	Fuel consumption (natural gas and propane)	UK Department for Environment, Food & Rural Affairs (DEFRA), Conversion factors – Full set, 2021, 2022, 2023	CO ₂ equivalent.
Fuels for emergency generator	Fuel consumption (diesel)	UK Department for Environment, Food & Rural Affairs (DEFRA), Conversion factors – Full set, 2021, 2022, 2023	CO ₂ equivalent.
Leakages from air-conditioning systems of refrigerant gases	Leakages (kg)	-	Global Warming Potentials (GWPs) are taken from IPCC Fifth Assessment Report (AR5) and sixth Assessment Report (AR6).

Regarding Scope 2 emissions caused by the consumption of purchased electricity from the national grid, two calculating methodologies have been followed: location and market-based approaches. The first metric shows the average emissions intensity of grids, considering both renewable and non-renewable generation, whereas the second metric indicates emissions from electrical sources that the Group has purposefully selected. Scope 2 emissions are calculated as follow:

GHG emissions – Scope 2			
Source	Activity data	Emission factor	GWP
Electricity purchased from the national grid (location-based approach)	Electricity consumption	Terna international comparisons on Energy data figures, 2019	Only CO ₂ .
		European Environment Agency, Scope 2 Emission Factors, 2023	
		Government of Canada. Environment and climate change Canada, 2023	

		Government of India Ministry of Power Central Electricity Authority, 2023	
		United States Environmental Protection Agency (EPA) 2023	
Electricity purchased from the national grid (market-based approach)	Electricity consumption	AIB, European Residual Mixes, 2021, 2022, 2023 – for Italy, Czech Republic, Sweden, Austria emissions - USA - Green-e Energy Residual Mix Emissions Rates, 2022 Terna international comparisons on Energy data figures, 2019	CO ₂ equivalent.
District-heating purchased from the waste-to-energy plant	Heat consumption	UK Department for Environment, Food & Rural Affairs (DEFRA), Conversion factors – Full set, 2021, 2022, 2023	CO ₂ equivalent.

Scope 3 emissions are reported below and include categories based on criteria of relevance and data availability.

GHG emissions – Scope 3			
Source	Activity data	Emission factor	GWP
Purchased Goods and Services (Cat.1)	Weight of raw, process and packaging materials procured	EcoInvent, v.3.10 APOS (2023); UK Department for Environment, Food & Rural Affairs (DEFRA), Conversion factor – Full set 2023	CO ₂ equivalent
	Cost of services	UK Department for Environment, Food & Rural Affairs (DEFRA), Conversion factor – Full set 2023	CO ₂ equivalent

Capital goods (Cat. 2)	Purchased production machinery	UK Department for Environment, Food & Rural Affairs (DEFRA), Conversion factor – Full set 2023	CO ₂ equivalent.
Fuel and energy related activities (Cat. 3)	Fuel and electricity consumption	UK Department for Environment, Food & Rural Affairs (DEFRA), Conversion factor – Full set 2023	CO ₂ equivalent.
Upstream logistics (Cat. 4)	Kilometres covered by airplane, truck or ship multiplied by shipped weight (ton)	UK Department for Environment, Food & Rural Affairs (DEFRA), Conversion factor – Full set 2023	CO ₂ equivalent.
Waste disposal (Cat. 5)	Weight of waste disposed	EcoInvent, v.3.10 APOS (2023); UK Department for Environment, Food & Rural Affairs (DEFRA), Conversion factor – Full set 2023	CO ₂ equivalent.
Business travel by air, train, and car (Cat. 6)	Kilometres travelled	UK Department for Environment, Food & Rural Affairs (DEFRA), Conversion factor – Full set 2023	CO ₂ equivalent.
Employee commuting (Cat. 7)	Kilometres travelled	UK Department for Environment, Food & Rural Affairs (DEFRA), Conversion factor – Full set 2023	CO ₂ equivalent.

APPENDIX



Appendix

Tables - Environment

Fuel consumption from non-renewable sources – Group level

	U.o.M.	2023	2022	2021
Natural gas	m ³	8,143,876	7,846,069	8,629,540
Propane (LPG)	kg	1,993,259	1,697,950	1,808,758
Diesel	l	226,580	241,163	218,441
Diesel (emergency generator)	l	15,814	46,617	37,479
Gasoline	l	36,189	35,027	26,033

Fuel consumption from non-renewable sources – breakdown by Business Segment

	U.o.M.	2023	2022	2021
Natural gas	m³	8,143,876	7,846,069	8,629,540
<i>Powertrain Division</i>	m ³	311,128	484,258	848,168
<i>HPDC</i>	m ³	7,832,748	7,361,811	7,781,372
Propane (LPG)	kg	1,993,259	1,697,950	1,808,758
<i>Powertrain Division</i>	kg	16,965	18,431	15,894
<i>HPDC</i>	kg	1,976,294	1,679,519	1,792,864
Diesel	l	226,580	241,163	218,441
<i>Powertrain Division</i>	l	94,653	87,111	67,189
<i>HPDC</i>	l	131,927	154,052	151,252
Diesel (emergency generator)	l	15,814	46,617	37,479

	<i>Powertrain Division</i>		15,814	26,611	17,479
	<i>HPDC</i>		-	20,006	20,000
Gasoline			36,189	35,027	26,033
	<i>Powertrain Division</i>		10,533	9,216	4,990
	<i>HPDC</i>		25,656	25,811	21,043

Electricity consumption (kWh) – breakdown by Business Segment

	2023	2022	2021
Electricity purchased from the grid	224,566,702	216,988,052	216,976,714
<i>Powertrain Division</i>	44,883,037	44,852,245	43,572,323
<i>HPDC</i>	179,683,665	172,135,807	173,404,391
Of which from certified renewable sources (Guarantees of Origin)	77,664,362	73,532,197	80,635,797
<i>Powertrain Division</i>	13,687,344	13,893,650	814,452
<i>HPDC</i>	63,977,018	59,638,547	79,821,345
Self-generated electricity (only for HPDC)	2,067,103	12,537	-
<i>Of which consumed</i>	1,985,900	11,677	-
<i>Of which sold into the national grid</i>	81,203	860	-
Total electricity consumed	226,552,602	216,999,729	216,976,714

District heating (kWh) – breakdown by Business Segment

	2023	2022	2021
<i>Powertrain Division</i>	359,000	274,000	418,000

	<i>HPDC</i>	6,662,647	5,994,425	7,614,356
Total District heating		7,021,647	6,268,425	8,032,356

Direct GHG Emissions (Scope 1) (tCO₂eq) ^[305-1] – breakdown by Business Segment

		2023	2022	2021
Natural gas		16,600	15,816	17,559
	<i>Powertrain Division</i>	634	976	1,726
	<i>HPDC</i>	15,966	14,839	15,833
Propane (LPG)		5,975	4,991	5,316
	<i>Powertrain Division</i>	51	54	47
	<i>HPDC</i>	5,924	4,937	5,270
Diesel		569	617	549
	<i>Powertrain Division</i>	238	223	169
	<i>HPDC</i>	331	161	175
F-gas		334	254	357
	<i>Powertrain Division</i>	163	250	285
	<i>HPDC</i>	171	5	71
Diesel (emergency generator)		44	129	103
	<i>Powertrain Division</i>	44	73	48
	<i>HPDC</i>	-	55	55
Gasoline		76	76	57
	<i>Powertrain Division</i>	22	20	11

	<i>HPDC</i>	331	394	380
Total GHG emissions Scope 1		23,598	21,883	23,941

Indirect GHG emissions (Scope 2 Market-based) (tCO₂eq) ^[305-2] – breakdown by Business Segment

		2023	2022	2021
Electricity purchased from the grid		71,233	66,157	41,307
	<i>Powertrain Division</i>	15,008	14,216	14,162
	<i>HPDC</i>	56,225	51,941	27,145
District heating		59	1,070	1,371
	<i>Powertrain Division</i>	2	47	71
	<i>HPDC</i>	57	1,023	1,300
Total GHG emissions Scope 2 (Market Based)		71,292	67,227	42,678

Indirect GHG emissions (Scope 2 Location-based) (tCO₂eq) ^[305-2] – breakdown by Business Segment

		2023	2022	2021
Electricity purchased from the grid		38,447	49,251	49,709
	<i>Powertrain Division</i>	10,698	12,277	11,916
	<i>HPDC</i>	27,749	36,974	37,793
District heating		59	1,070	1,371
	<i>Powertrain Division</i>	2	47	71
	<i>HPDC</i>	57	1,023	1,300
Total GHG emissions Scope 2 (Location-Based)		38,506	50,321	51,080

Tables – Human Resources and Health and Safety

Employees (headcount) ^[2-7] – breakdown by region

	2023	2022	2021
Employees	3,203	3,072	3,200
<i>North America</i>	481	403	416
<i>Asia</i>	255	298	295
<i>Europe</i>	2,467	2,371	2,489
Full-time employees	3,084	2,946	3,079
<i>North America</i>	481	403	416
<i>Asia</i>	255	257	252
<i>Europe</i>	2,348	2,245	2,368
Part-time employees	119	126	121
<i>North America</i>	-	-	-
<i>Asia</i>	-	-	-
<i>Europe</i>	119	126	121
Permanent employees	3,064	2,902	3,018
<i>North America</i>	481	403	416
<i>Asia</i>	126	155	142
<i>Europe</i>	2,457	2,344	2,460
Temporary employees	139	170	182
<i>North America</i>	-	-	-

	<i>Asia</i>	129	143	153
	<i>Europe</i>	10	27	29
Non-guaranteed hour employees		-	-	-

Diversity of governance bodies and employees (headcount) ^[405-1]

	2023		2022		2021	
	n.	%	n.	%	n.	%
Gender						
<i>Female</i>	757	24	747	24	788	25
<i>Male</i>	2,446	76	2,325	76	2,412	75
Age group			n.	%	n.	%
<30	686	21	613	20	615	19
30 ≤ x ≤ 50	1,589	50	1,603	52	1,640	51
>50	928	29	856	28	945	30

Diversity of governance bodies and employees (headcount) ^[405-1]

Employee category	2023		2022		2021	
	n.	%	n.	%	n.	%
<i>Managers</i>	67	2	65	2	62	2
<i>Plant directors</i>	63	2	68	2	72	2
<i>White collars</i>	710	22	715	23	748	23
<i>Blue collars</i>	2,363	74	2,224	73	2,318	73

Work-related injuries ^[403-9] – Group

	U.o.M.	2023	2022	2021
Worked hours	h	7,342,469	6,873,909	7,186,940
Number of fatalities as a result of work-related injuries	n.	-	-	-
Number of high consequence work-related injuries (excluding fatalities)	n.	3	5	7
<i>of which commuting</i>	n.	-	-	-
The number of recordable work-related injuries	n.	219	213	248
<i>of which commuting</i>	n.	8	1	3
<i>of which with over 0 days of incapacitation</i>	n.	50	37	34
<i>of which with over 3 days of incapacitation</i>	n.	29	23	35
<i>of which with over 7 days of incapacitation</i>	n.	63	79	72
Total number of recorded near-misses/close calls events	n.	222	338	337
Rate of recordable occupational accidents	%	29.8	31.0	34.5
Rate of high consequence work-related injuries	%	0.4	0.7	1.0
Fatality rate	%	-	-	-
Severity rate	%	50.2	76.4	70.7

Employee Hires (headcount) ^[401-1]

	2023	2022	2021
Total number of hires	812	415	594
Gender			
<i>Female</i>	180	149	158
<i>Male</i>	632	266	436
Age group			
<30	341	191	285
$30 \leq x \leq 50$	372	190	237
>50	99	34	72
Hirings rate	27%	14%	18%

Employee Terminations (headcount) ^[401-1]

	2023	2022	2021
Total number of terminations	640	577	584
Gender			
<i>Female</i>	160	133	154
<i>Male</i>	480	444	430
Age group			
<30	211	158	215
$30 \leq x \leq 50$	310	258	255
>50	119	161	114
Turnover rate	21%	19%	18%

A close-up photograph of several green leaves, likely from a plant like a castor bean, covered in numerous small, glistening water droplets. The leaves are set against a dark, blurred background, creating a high-contrast, naturalistic scene. The lighting highlights the texture of the leaf veins and the spherical shape of the water droplets.

GRI CONTENT INDEX

GRI Content Index

GRI 1: UNIVERSAL STANDARDS	
Statement of use	Gnutti Carlo S.p.A. has reported in accordance with the GRI Standards for the period 1 st January 2022 to 31 st December 2023
GRI 1 used	GRI 1: Foundation 2021
Applicable GRI Sector Standards	[N/A]

GRI Standard	Disclosure	Location	Notes	Omission
GRI 2: GENERAL DISCLOSURES 2021				
The organization and its reporting practices				
2-1	Organizational details			
2-2	Entities included in the organization's Sustainability reporting			
2-3	Reporting period, frequency, and contact point			
2-4	Restatements of information			
2-5	External assurance			
Activities and workers				
2-6	Activities, value chain and other business relationships			
2-7	Employees			
2-8	Workers who are not employees			
Governance				
2-9	Governance structure and composition			
2-10	Nomination and selection of the highest governance body			
2-11	Chair of the highest governance body			
2-12	Role of the highest governance body in overseeing the management of impacts			
2-13	Delegation of responsibility for managing impacts			
2-14	Role of the highest governance body in sustainability reporting			
2-15	Conflicts of interest			
2-16	Communication of critical concerns			
2-17	Collective knowledge of the highest governance body			
2-18	Evaluation of the performance of the highest governance body			
2-19	Remuneration policies			
2-20	Process to determine remuneration			
2-21	Annual total compensation ratio			Information not disclosed due to confidentiality constraints.

GRI Standard	Disclosure	Location	Notes	Omission
Strategy, policies, and practices				
2-22	Statement on sustainable development strategy			
2-23	Policy commitment			
2-24	Embedding policy commitment			
2-25	Process to remediate negative impacts			
2-26	Mechanisms for seeking advice and raising concerns			
2-27	Compliance with laws and regulations		In 2023 there were no significant cases of non-compliance (over 10,000 €). In 2022, there have been 8 cases of noncompliance, amounting to 24,866.00 €. In 2021, there were 11 cases amounting to 628 €.	
2-28	Membership associations			
Stakeholder engagement				
2-29	Approach to stakeholder engagement			
2-30	Collective bargaining agreements			
GRI 3 MATERIAL TOPICS 2021				
3-1	Process to determine material topics			
3-2	List of material topics			

GRI Standard	Disclosure	Location	Omissions
MATERIAL TOPICS			
ENVIRONMENTAL PERFORMANCE INDICATORS			
DAMAGE TO ECOSYSTEMS DUE TO THE CONSUMPTION OF VIRGIN RAW MATERIALS AND LAND USE CHANGE			
GRI 3: Material topics 2021			
3-3	Management of material topics		
GRI 301: Materials 2016			
301-1	Materials used by weight or volume		
IMPACT ON CLIMATE CHANGE WITHIN AND OUTSIDE (ES. SUPPLY CHAIN) THE ORGANIZATION DUE TO ENERGY CONSUMPTION AND OTHER GHG EMISSION SOURCES			
GRI 3: Material topics 2021			
3-3	Management of material topics		
GRI 302: Energy 2016			
302-1	Energy consumption within the organization		
302-3	Energy intensity		
POLLUTION OF WATER RESOURCES DUE TO SPILLAGE OF HAZARDOUS SUBSTANCES / UNAVAILABILITY OF WATER RESOURCES DUE TO CONSUMPTION IN WATER-STRESSED AREAS			
GRI 3: Material topics 2021			
3-3	Management of material topics		

GRI Standard	Disclosure	Location	Omissions
GRI 303: Water and effluents 2018			
303-1	Interactions with water as a shared resource		
303-2	Management of water discharge-related impacts		
303-3	Water withdrawal		
IMPACT ON CLIMATE CHANGE WITHIN AND OUTSIDE (ES. SUPPLY CHAIN) THE ORGANIZATION DUE TO ENERGY CONSUMPTION AND OTHER GHG EMISSION SOURCES			
GRI 3: Material topics 2021			
3-3	Management of material topics		
GRI 305: Emissions 2016			
305-1	Direct (Scope 1) GHG emissions		
305-2	Energy indirect (Scope 2) GHG emissions		
305-3	Other indirect (Scope 3) GHG emissions		
IMPROPER MANAGEMENT OF WASTE AND/OR LIMITED QUANTITY OF WASTE SENT TO RECYCLING/REUSE			
GRI 3: Material topics 2021			
3-3	Management of material topics		
GRI 306: Waste 2020			
306-1	Waste generation and significant waste-related impacts		
306-2	Management of significant waste-related impacts		
306-3	Waste generated		
306-4	Waste diverted from disposal		
306-5	Waste directed to disposal		
SOCIAL PERFORMANCE INDICATORS			
VIOLATION OF EXISTING LAWS ON SOCIO-ECONOMIC & ENVIRONMENTAL COMPLIANCE			
GRI 3: Material topics 2021			
3-3	Management of material topics		
GRI 2: GENERAL DISCLOSURES 2021			
2-27	Compliance with laws and regulations		
SAFEGUARDING OF EMPLOYEES' WELLBEING			
GRI 3: Material topics 2021			
3-3	Management of material topics		
GRI 401: Employment 2016			
401-1	New employees hires and employee turnover		
WORKING CONDITIONS AND IMPACTS ON EMPLOYEES' HEALTH AND SAFETY			
GRI 3: Material topics 2021			
3-3	Management of material topics		
GRI 403: Occupational health and safety 2018			
403-1	Occupational health and safety management system		
403-2	Hazard identification, risk assessment, and incident investigation		
403-3	Occupational health services		

GRI Standard	Disclosure	Location	Omissions
403-4	Worker participation, consultation, and communication on occupational health and safety		
403-5	Worker training on occupational health and safety		
403-6	Promotion of worker health		
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships		
403-9	Work-related injuries		
WORKFORCE AND LOCAL COMMUNITIES' ENHANCEMENT			
GRI 3: Material topics 2021			
3-3	Management of material topics		
GRI 405: Diversity and equal opportunity 2016			
405-1	Diversity of governance bodies and employees		
NON GRI INDICATORS			
DEVELOPMENT OF EMPLOYEE SKILLS			
GRI 3: Material topics 2021			
3-3	Management of material topics		
	Total training hours		
HUMAN RIGHTS VIOLATION AND ENVIRONMENTAL DAMAGES ALONG THE VALUE CHAIN			
GRI 3: Material topics 2021			
3-3	Management of material topics		
	Cases of non-compliance during the reporting year		
VIOLATION OF INTERNAL NORMS AND REGULATIONS RELATED TO BUSINESS ETHICS			
GRI 3: Material topics 2021			
3-3	Management of material topics		
	Cases of violation of internal norms and regulations		
CONTRIBUTION TO TECHNOLOGICAL PROGRESS			
GRI 3: Material topics 2021			
3-3	Management of material topics		
	Contribution to technological process and R&D activities		



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