

# Ofonderie ariotti 2023 Sustainability report

A Greener Future in every Casting

①fonderie ariotti

# We have been casting foundry products for 113 years, increasingly dedicated to serving the European mechanical industry.

Dear Stakeholders,

We are pleased to present our second Sustainability Report for 2023, a document through which we share the progress and commitments of our company in terms of economic, environmental, and social sustainability.

Although, as an SME, we are not yet forced to prepare such reports, this second edition has been supplemented with a double materiality analysis. This approach has enabled us to incorporate your perspectives into our evaluations, aligning even more closely with the GRI (Global Reporting Initiative) guidelines.

Our company traces its roots back to the early 1900s and has always been led by the Ariotti family, now in its fourth generation. We are deeply rooted in our territory and the European and Italian industrial culture. Our guiding values and commitments include respect, sustainable growth, enhancement of the local area, and the dignity of work and skills.

We share this report in a challenging year when the consequences of the ongoing geopolitical crisis have been felt at all levels. Despite these difficulties, we remain steadfast in our long-term vision, confident in the continuity of our business, and in our role as an essential link in the European manufacturing.

Production volumes have decreased compared to the previous year, and the data reflect this decline. We have worked to maximize service to our customers, often welcoming new ones as part of a strategic shift in our production mix. This change included entering industrial sectors interested in reshoring complex products to Europe. These initiatives absorbed significant resources and, together with our efforts to maintain the highest level of service for our longstanding customers, temporarily resizing our performance.

While the challenges we face at the time of writing remain substantial, we are confident in the robustness we have built over many years by focusing on the three aspects of sustainability: economic, social, and environmental. This resilience enables us to weather the current adverse circumstances and to look forward with optimism to the market recovery expected in 2025.

We thank you all for every step we have taken together in over a century of history.



### **2023 SUMMARY**



25,9 MLN turnover



116 employees



97% waste recovery



1.060.715 kWh self-produced by photovoltaic system



2310 kg of CO2 per gross ton of pig iron



12.491 tons of gross pourings



33.000 € donations to the community



- · 34% foreign customers
- 66% Italian customers



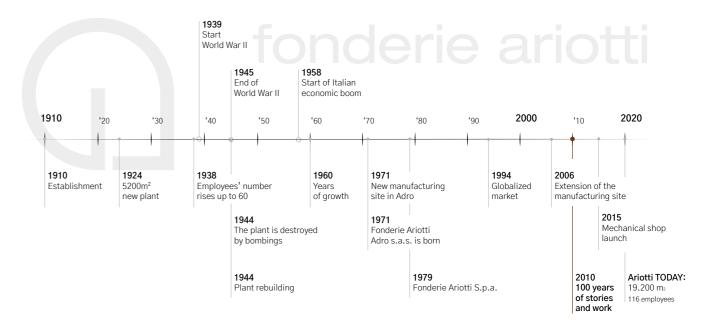
96% Italian suppliers

# 113 years of history

# Chapter 1: Who are we?



# **1.1** Our history:







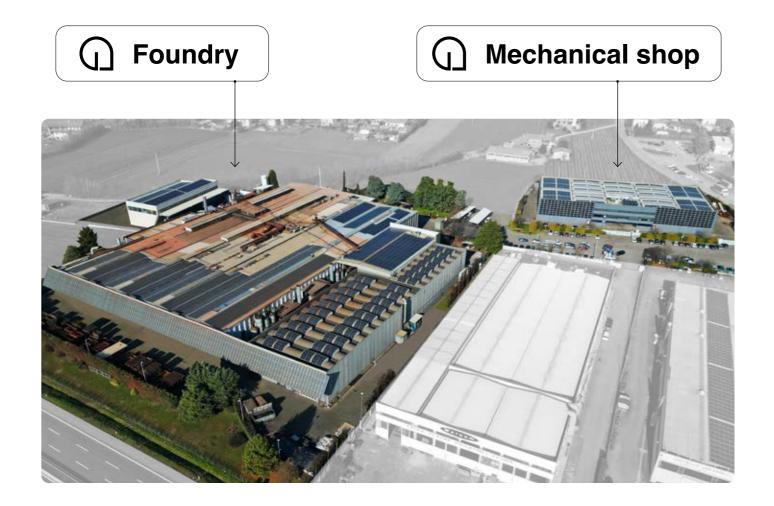
### 1.2 Plants

Fonderie Ariotti has been working in the cast iron foundry sector for over a hundred years.

We produce grey and nodular cast iron components **up to 70 tons** for the mechanical industry, providing also machining, and we export abroad approximately 50% of our products.

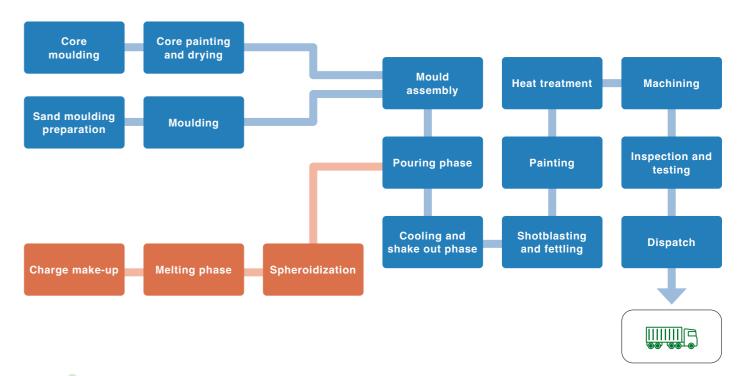
The company currently covers a surface area of about 40.500 m<sup>2</sup>, of which 19.200 are covered.

In **2015** the **mechanical processing activity** started and the new canteen and changing rooms were built.





### **1.3** Production cycle





### 1.4 Certifications

Always focused on quality improvement, Fonderie Ariotti can boast following certifications:

QUALITY MANAGEMENT SYSTEMS: UNI EN ISO 9001 → since 1996

ENVIRONMENTAL MANAGEMENT SYSTEMS: UNI EN ISO 14001 → since 2004

OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEMS: ISO 45001  $\Rightarrow$  since 2011

ENERGY MANAGEMENT SYSTEMS: UNI CEI EN ISO 50001 → since 2023

INFORMATION SECURITY MANAGEMENT SYSTEMS: UNI CEI EN ISO/IEC 27001→ since 2023

CERTIFICATE OF APPROVAL OF MANUFACTORERS OF MATERIALS → since 2018









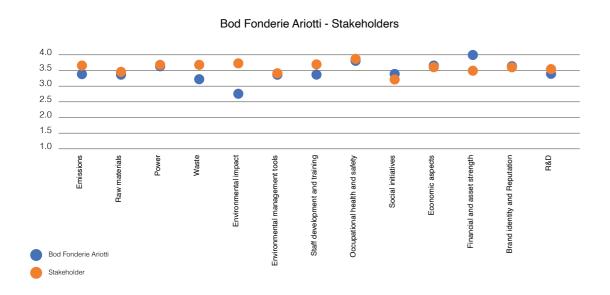
### CERTIFICATE OF APPROVAL OF MANUFACTURERS OF MATERIALS No. FAB058016MI

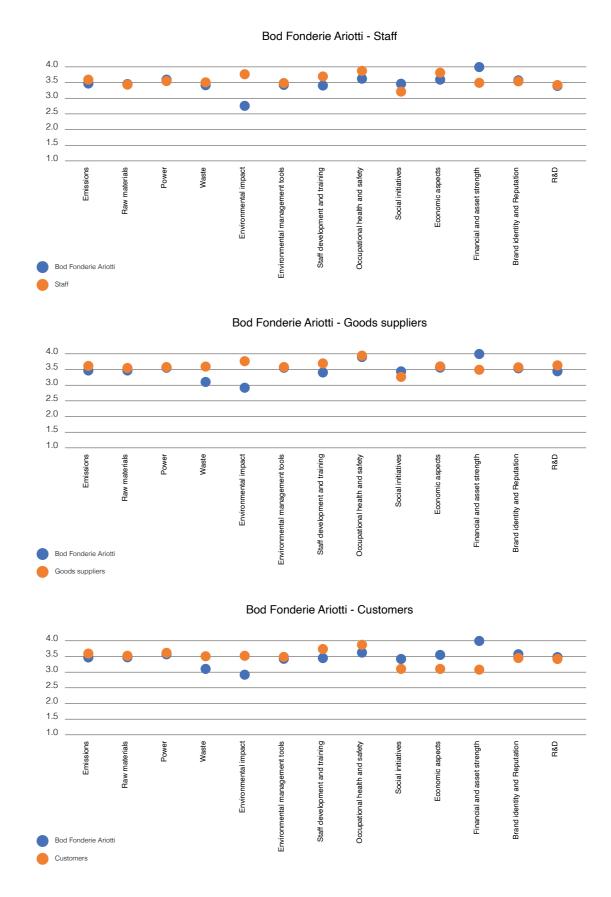
In **2016** the **first environmental report** was drawn up, providing an overview of the indicators relating to the main impacts.



### **1.5** Materiality Analysis

To enhance the 2023 sustainability report, a **materiality analysis** was introduced, allowing the identification of the **most relevant topics** for both the company and its stakeholders. A total of **146 answers** were collected, with the main participation percentages distributed as follows: 20% from customers, **20%** from **employees**, and **31%** from **goods suppliers**. As illustrated in the chart, the topics considered most relevant, with a score above **3.6** on a scale from 1 (not very relevant) to 4 (very relevant), by Fonderie Ariotti's board of directors and its stakeholders, were: **power**, **occupational health and safety, and brand identity and reputation**.







### **1.6** ESG approach

**Sustainability** is the process of change in which resources exploitation, investment plans and technological development are in synch and enhance present and future potential in order to face human needs and ambitions.



# **O**fonderie ariotti

# **Chapter 2: Environmental Sustainability**

Awareness on environmental issues has always been a top priority for Fonderie Ariotti, who in **2004** obtains the **UNI EN ISO 14001** certification in order to follow an organizational system aimed at the **continuous improvement** of **environmental performances**.

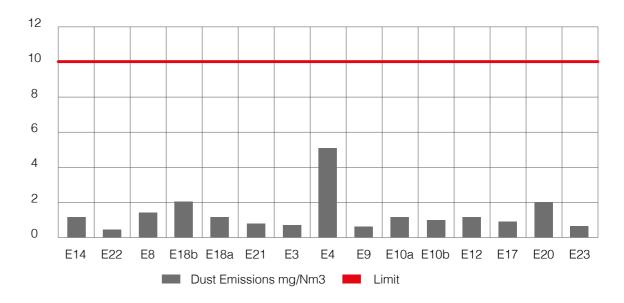
The implementation of this system allowed us to check and guarantee the constant compliance with the requirements defined by **AIA 7206 of 2008** Decree, to identify potential risks and opportunities.



Fonderie Ariotti assures controlled aspiration of the environment through 15 vacuum and dust suppression systems in the foundry plant and through 4 plants covering machine tools.

Chimneys monitoring is carried out yearly to measure pollutants.

Monitored parameters are dust, silica, phenol, PAH, dioxins, metals, VOC, **whose compliance with limits** is guaranteed. The most significant parameter, which is also common to all plants, is undoubtedly dust, as shown in following year 2023 trend chart:



Moreover, dust monitoring allows us to check every filter's performance and to intervene through targeted maintenance.



### **2.2** Resources use

Raw materials are mainly used for moulding and casting phases



### 2.2.1 Raw materials

**Moulding**: for each gross casted ton, **90 kgs** of new sand are introduced for moulds production and **5 kgs** of new sand are introduced for cores production, **95%** of the used sand is internally recycled.

New sand use:	U.M.	2023
New moulding sand	tons	1.232
New moulding sand /casted tons	Ton/gross casted ton	0,097
New sand for cores	tons	60
New sand for cores / casted tons	Ton/gross casted ton	0,005

Melting: 51% of the raw material used in our furnaces comes from End of Waste scrap or directly from production process returns.

Use:	U.M.	2022	U.M.	2023	%
Pig iron	tons	6687	ton	6209	49
Steel scrap	tons	4929	ton	3167	25
Slags	tons	4140	ton	3271	26
Total	tons	15756	ton	12648	100



Our product is recyclable forever and ever!



### **2.2.2** Radiometric controls

Fonderia Ariotti, following Decrete Law 17/2002, performs radiometric tests on:

- Material addressed to melting through a radiometric gate placed at the threshold of the plant entry
- Melted material, through Gamma spectrometry
- **Melting by-products** such as slag and dust coming from a fume cleaning system placed in our furnace department, through Gamma Spectrometry





### 2.2.3 Electric use

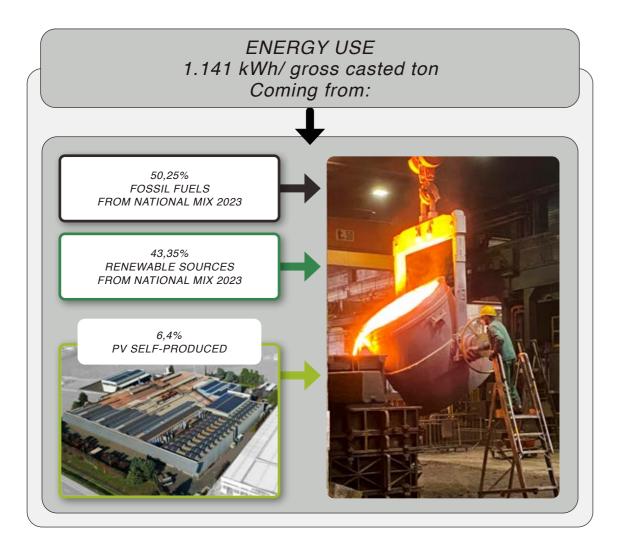
For each gross casted ton 1.141 kWh are necessary.

The most relevant energy consumption is the one related to melting phase and pouring phase, which represents **67%** of the total;

Use:	U.M.	2022	2023
Electric	kWh	17.221.783	14.253.828
Ratio on casted Ton	kWh/gross casted ton	1.086	1.141

The 2023 increase compared to 2022 is due to the decision to keep both furnaces in operation despite the volumes decrease, ensuring the best possible service for our customers. Additionally, this was driven by the introduction of more labour-intensive sectors and the growing percentage of machined castings.

### **ELECTRIC POWER:**





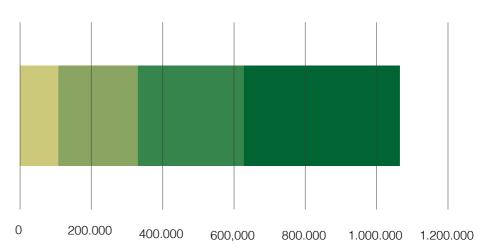
# 2.2.4 Self-produced power

Four photovoltaic systems are installed, for a total of **1200 kW**, equal to **23% of the power** installed; the fourth was completed in 2023.

In 2023 the 4th PV systems in use produced 1.060.715 kWh, avoiding the emission of 563.140 kg of eq. CO<sub>2</sub>.

PV power production	U.M.	2022	2023
Self-produced PV power	kWh	667.000	1.060.715

### Self-produced power from too celsrarcystems (kWh):





# 2.2.5 Methan gas use

Use:	U.M.	2022	2023
Methan Gas	Sm3	46.686	43.181
Ratio on casted ton	Sm3/ gross casted ton	3	3

Methan Gas is mainly used for spaces and ladles heating.



### 2.2.6 Diesel oil use

Diesel oil is used for forklifts and diggers.

Use:	U.M.	2022	2023
Diesel oil	Lt	40.166	39.001
Ratio on casted ton	Lt/ gross casted ton	2,53	3,12

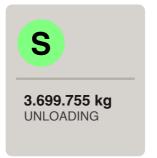


### **2.3** Waste management

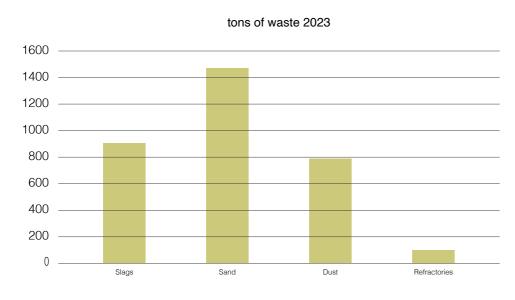
Since 2020 our waste management system has been managed on a cloud platform.







For each gross melted ton **0,29 tons** of waste are emitted. **97%** of produced waste is recovered to find a new life.





### 2.4 PFF

In its constant effort to improve environmental performance, **Fonderie Ariotti** took part to the EFFIGE pilot project **already in 2019**, which enabled an **initial assessment** of the **environmental impact** of two specific products. This journey led the company, in 2023, to assess the **Product Environmental Footprint (PEF)** of cast iron castings, in collaboration with Ergo srl.

**PEF** is a EU-wide recognised **environmental assessment tool**, designed to measure the environmental impact of a product throughout its life cycle, from raw material extraction to production, and in some cases, even further. In this case, the analysis focused on one net ton of raw cast iron casting, an intermediate product that can be used in multiple final applications.

### Key aspects of the functional unit:

- · What?: Cast iron components
- How much?: 1 net ton of raw casting (at the foundry's exit gate)
- How well?: The raw casting, being an intermediate product, can be used for various applications. Its quality and final performance depend on product standards and the specifications required by the end-user.
- How long?: The product life cannot be defined in advance, as it depends on its final use. However, raw material losses during the casting process are considered in the calculation of production

### PEF analysis results

The analysis highlights the most relevant environmental impact categories, includin:

Most relevant impact category	Relevant process
Climate change	<ul> <li>RAW MATERIALS – Pig Iron</li> <li>PRODUCTION – Elettric Energy for melting</li> <li>RAW MATERIALS – Ferrous alloys</li> </ul>
Particulate matter	<ul> <li>RAW MATERIALS - Ferrous alloys</li> <li>PRODUCTION - Other raw materials in melting phase</li> <li>RAW MATERIALS - Pig Iron</li> </ul>
Ecotoxicity, freshwater	<ul> <li>RAW MATERIALS - Pig Iron</li> <li>RAW MATERIALS - Ferrous alloys</li> <li>RAW MATERIALS - Other metals</li> <li>PRODUCTION - Elettric Energy for melting</li> </ul>

Resource use, fossils	<ul> <li>RAW MATERIALS - Pig Iron</li> </ul>
	<ul> <li>PRODUCTION - Elettric Energy for melting</li> </ul>
	<ul> <li>PRODUCTION - Other raw materials for moulding</li> </ul>
	RAW MATERIALS - Ferrous alloys
Resource use, minerals	RAW MATERIALS - Other metals
and metals	<ul> <li>RAW MATERIALS - Ferrous alloys</li> </ul>

This approach allows Fonderie Ariotti to identify critical issues to intervene on, with the goal to further reduce the environmental impact of its products and to pursue a production model more and more sustainable and responsible.



C class

### **2.5** Environmental performance

According to what is specified in the Product Category Rules for cast iron parts, the performance class is computed as the sum of the results weighted on the three most relevant impact categories for the representative product.

The three performance classes "A, B and C" are defined starting from the benchmark value, computed for the representative product "rough cast iron components", and from higher and lower threshold.

Unit of measurement Benchmark

mPt

RP –Cast iron components	mPt	163,92
Class	Rough iron castings	Unit of measurement
A class	PP < 141,44	mPt
B class	141,44 < PP <193,03	mPt

For the investigated product the sum of the results weighted on the three most relevant impact categories, defined in Product Category Rules of rough iron casting components as representative product, has been computed.

PP ≥ 193,03

Rough iron castings	Unit of measurement
	mPt
- ,	mPt
- ,	mPt
,	mPt
	<b>Rough iron castings</b> 54,90 48,85 94,90 198.66

### \*TAKEN from Official PEF Paper

Representative product

The total score weighted on the **three categories** of impact specified in reference PCR amounts to **198,66 mPt**, which classifies Fonderie Ariotti's spheroidal iron casting product in the **C class**.

The classification in **C** class is due to the use of Antimony (Sb), an element necessary in order that our products can reach performance levels that allow them to replace environmentally more impactful steel products. Additionally, compared to the typical configuration of Italian foundries, **Fonderie Ariotti** has chosen to carry out **in-house** the processes of **core moulding, deburring, casting painting, and mechanical machining**. While this increases the internal impact categories, it also avoids additional impacts related to pieces transportation to external companies during the different production stages, offering the customer a "turnkey" solution.

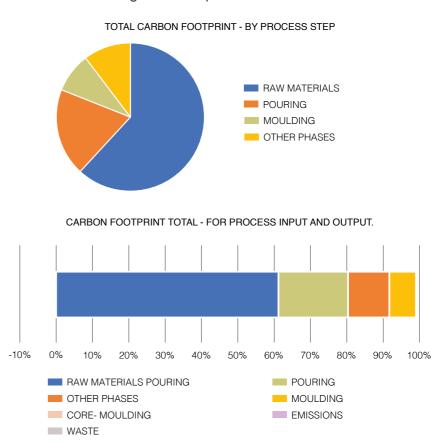


### **2.6** Carbon Footprint

### 2310 kg of CO2 for gross cast iron ton

A Carbon Footprint analysis about the year 2023 has been performed through the Assofond EcoProfile.

The impact on the climate change category measured was in line with the benchmark stated by Assofond of "2300 kg of CO2 eq".



The main contribution comes from raw materials, affecting **62%** of the total, followed by the **pouring phase**, affecting **19%**.

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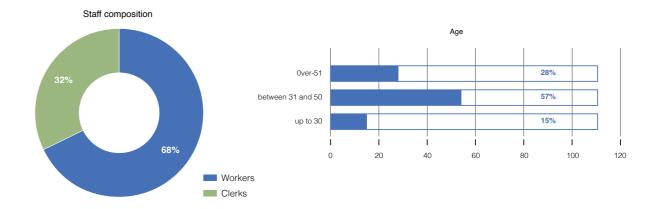
# **Chapter 3: Social Sustainability**

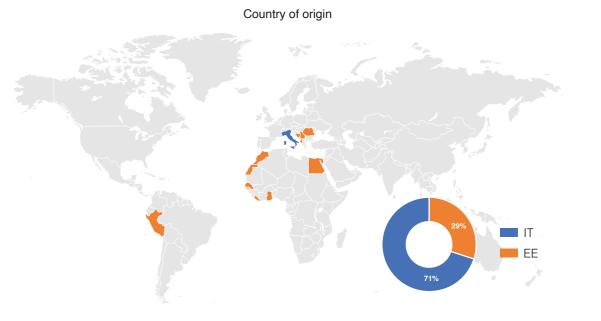


### 3.1 Employees

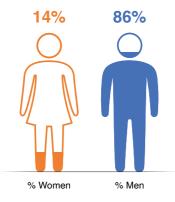
Fonderie Ariotti's staff is composed of **116** employees; **95%** are employed with a **permanent contract**, while part-time employees represent 5% of the total employees.

29% of the employees comes from foreign countries, but this diversity is not a barrier at all; on the contrary, the company can boast high-integration values, having departments composed by people coming from different cultures. Regarding the age factor most employees (57%) belong to the group between 31 and 50 years of age. The over-51 group comes second, while the third place goes to the under-30 group.





A growing increase of female contribution has recently occurred in the foundry industry, historically and traditionally male-dominated; our **female employees** are **14%** of the total



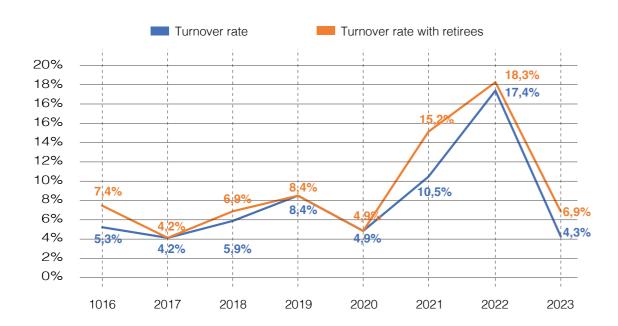


### 3.2 Turnover

Fonderie Ariotti has always been proud of an **extremely low turnover** rate; many employees spent their entire working life with us.

The devasting effects of COVID-19 pandemic have affected all industry sectors and have led to a turnover rate which during the years 2021 and 2022 has respectively duplicated and tripled compared to the usual trend, acc. to the benchmark data.

The rate has luckily returned to pre-Covid values during the year 2023





### 3.3 Safety

Fonderie Ariotti invests a lot on the safety and health of its workforce, implementing over the years risk-monitoring systems and many investments to bring technology and innovation.

**UNI EN ISO 45001** certification (formerly known as OHSAS-18001 achieved in the year **2011**, the **231 organisational model** and a constant activity of **internal auditing** and records on non-conformities, near misses and medications (together with the obvious injury-records) led the company to intercept sources of risk in order to analyse, correct and prevent them.

3 injuries occurred in 2023, for a total of 13 days, equal to 0,3% of working days

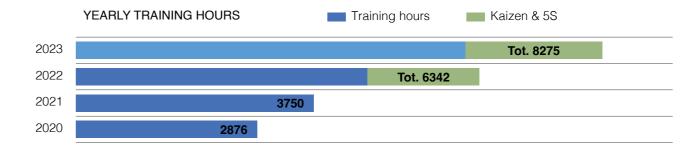
	Total injuries number	Total prognosis days	Inj. hrs/work. hr	Severity index gravità	Frequency index
2020	7	70	0,34	0,421	36,10
2021	9	334	1,31	1,643	44,28
2022	10	279	1,12	1,401	45,19
2023	3	13	0,05	0,067	15,58



### 3.4 Training

Many of the taken corrective actions are related to training courses and improvement paths.

Continuous training is key; during the **2023** the lower workload has led our company to invest more in awareness, with an absolute increase of the training hours, covering the **4,3%** of the working hours.





### **3.5** The "Fusioni" project

We of Fonderie Ariotti not only produce **iron casting components**, but we are also committed to create a more meaningful "**melting**"; the one happening every day among different people, personalities, cultures and experiences. The project "**Melting – Foundry Stories**" started in **2021** with the goal of enhancing the company human capital. This project aims to share the experiences of some employees, telling stories of men and women that chose to join Fonderie Ariotti after leaving their country of origin. Moreover, it also illustrates stories of people that welcomed in our company new generations, passing their know-how beyond cultural and language barriers.

In the year 2023 the project "Fusioni – Storie di Fonderia" was selected among several candidates to take part to the Brescia Industry Association's competition "Fabbrica del Futuro" ("Factory of the Future"), in the contest of Brescia & Bergamo, Capitale Italiana della Cultura 2023 ("Italian capital of culture 2023"), turning out to be among the seven winners in the branch "Sinergia Impresa-Territorio" ("Sinergy Business-Territory"). To celebrate this important award and the 50 years anniversary of the Adro headquarters, a theatrical performance was created with "Piroscafo Theater" and the singer-songwriter Lorenzo Monguzzi. Some employees have become actors and shared their stories with the public. This performance was also displayed in Fabbrica del Futuro on November 24th, 2023

In the year **2023**, the "**Fusioni**" project was further enriched with a special initiative: **Melting Dinners**. During these evenings, we selected a **nationality** represented within our company and celebrated it through its **cuisine**. Among them, Fonderie Ariotti enjoyed a night dedicated to both the Ghanaian and Peruvian communities, tasting their traditional dishes and immersing ourselves in their stories.









### 3.6 Partnerships with schools and universities

Fonderie Ariotti shows strong commitment in investing in young people and actively collaborates with educational institutions, both to ensure sustainable future to the company through the input of **young talents** and to demonstrate its involvement and **social commitment** towards the community.

During the year 2023 the company has welcomed **2 curricular internships with universities**, and **3 projects of internships in cooperation with higher education institutions** (in Italian PCTO, Percorsi per le Competenze Trasversali e l'Orientamento), together with **3 PhDs** with the following universities:

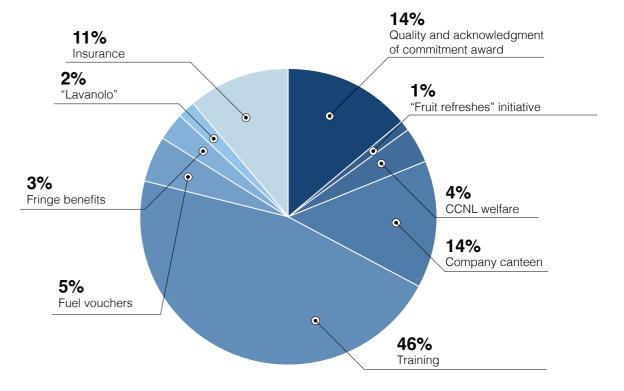
- Università degli Studi di Bergamo: PhD in "Human sciences and Welfare Innovation":
- Università degli Studi di Brescia: PhD in "Analytics for Economics and Management":
- Università degli Studi di Trento and CNR (Italian National Research Council): "Designing against failures resulting from static and time-varying loading in thick-walled components made of ductile cast iron".

Worth mentioning is also our partnership with **UNSIDER**, the Italian organisation of **iron** and steel unification, and with the Munich's **Fraunhofer Institute**, dealing with the development of **applied research**.



### 3.7 Welfare & Benefit

Every company's success is essentially linked to the **contribution of its working people** This is the reason why Fonderie Ariotti **trusts** and recognizes its people's worth. Several benefits are introduced every year through the **welfare** policy, in order to reward the constant **commitment of the employees**. During the year 2023 € 573'597 were allocated for this purpose, as follows:





### 3.8 Commitment to the community

During the year 2023, our company, always sensitive to social issues, has reserved € 33'000 to several social and cultural ventures. Among the most significant donations, we mention the ones to Fondazione Brescia Musei, to FAI National Trust for Italy, to Pallacanestro Brescia, to the Missionary Association Zikomo Malawi and scholarships of of IIS Marzoli high school students for volunteering experiences in Malawi.











3.9 Shared ethical values: ethical code, organisational model 231/2001

### **RULES COMPLIANCE**

Fonderie Ariotti works in full compliance with laws and regulations in force in any Country it operates in and rejects any behaviour that directly or indirectly clashes with them, with the internal rules or with the following values.

### **INDIVIDUAL INTEGRITY**

Human Resources are Fonderie Ariotti's key development factor. The Company operates with the utmost respect to physical and ethical integrity and to personal dignity.

### **EQUITY AND EQUALITY**

Fonderie Ariotti rejects any discrimination form that could be founded on race, sex, religion or any other factor. Any internal hierarchical relationship is based on equity and fair authority and refuses any abuse of power.

### **HONESTY AND CORRECTNESS**

Fonderie Ariotti works with correctness and honesty with all internal and external parties and rejects any opportunistic and dishonest behaviour or conflict of interest.

### **EDUCATION**

The relationship between workers and collaborators, at all levels of responsibility in the company organization, must be based on reciprocal rectitude and good manners. Fonderie Ariotti does not tolerate any form of physical and psychological violence.

### **HEALTH AND SAFETY**

Fonderie Ariotti is sensitive to its staff wellbeing, therefore it guarantees human dignity respectful work conditions and a safe and healthy work environment. The Company is also proactive in the diffusion of the safety education.

### **ENVIRONMENTAL CONSERVATION**

Fonderie Ariotti is very sensitive to environmental problems. It works with utmost respect for environmental conservation and adopts procedures aiming to reduce any negative impact to the surrounding flora, fauna and to the local community wellbeing. Fonderie Ariotti makes this even better than the current law prescriptions.

### TRANSPARENCY, CLARITY AND INFORMATION TRUTHFULNESS

Fonderie Ariotti operates with full transparency and good faith towards every stakeholder, complying with the Italian and European laws and regulations. The Company guarantees clear, complete, understandable and truthful flows of information.

### CONFIDENTIALITY

Fonderie Ariotti pays a great attention to privacy and copyrights and guarantees strict confidentiality in relationships and data handling.

### **MOTIVATION**

Fonderie Ariotti aims to share its goals with its staff, takes in great consideration every opinion and suggestion and offers opportunities of training and professional skills development.

### **PROFESSIONAL ABILITY**

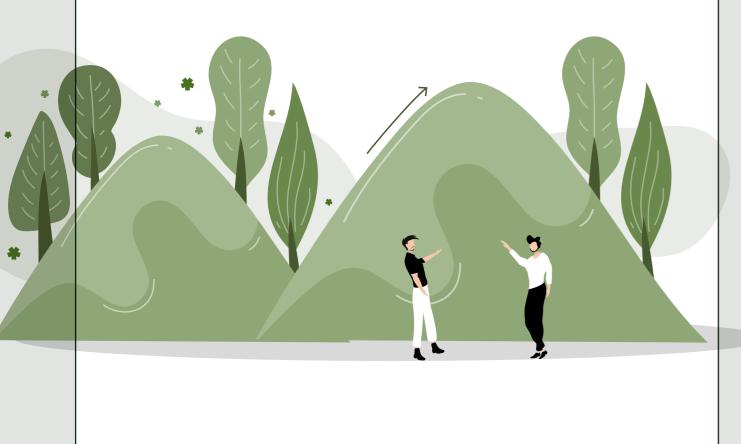
Fonderie Ariotti operates with expertise and professional care. The Company assigns roles and responsibilities according to people knowledge and technical ability and offers appropriate training and updating opportunities.

### **FAIR COMPETITION**

Fonderie Ariotti operates in the market with free and fair competition and rejects any collusion behaviour and abuse of leading position.

Fonderie Ariotti rejects any behaviour that diverges from the above mentioned.

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# **Chapter 4: Economical Sustainability**

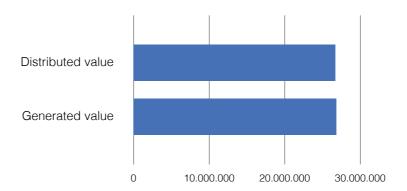


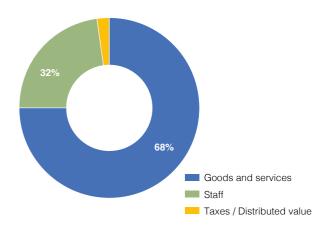
### **4.1** Economic indicators

During the year 2023 12.491 tons of gross material were poured.

Most of the distributed value is assigned to **suppliers**, followed by **Staff** and **Government**. The **2023 income** was **entirely reinvested** in the company (no distribution to shareholders).

	2022 EURO	2023 EURO
Generated value	37.447.824	26.865.544
Distributed value	35.182.565	26.742.076
Goods and services	28.042.214	20.725.058
Staff	6.936.687	6.465.629
Taxes	176.664	(448.611)
Retained economic value	2.265.259,00	123.468







### 4.2 Customers

In **2023**, **34%** of the sales were generated by **foreign customers**. They work in the following fields:

- Presses (iniection and forming)
- Grindings
- · Rolling mills
- Machine tools
- · Wind, solar and hydroelectric power
- Compressors
- Industrial gear units
- Aerospace

### No credit losses in 2023

Our credit risk management is careful and cautious.

We pre-emptively value our customers' **solvency**, analysing their **financial report** and using **reports supplied** by a business information provider.

We therefore choose to work only with customers we consider solvent, and we monitor their state of health.

Moreover, we have availed of a credit insurance policy for several years, which provides us with important information about our customers and prevents us from insolvency and non-payment risks.



### 4.3 Suppliers

Italian suppliers account for 96% of our purchases in 2023.

New equipment for **incoming goods inspections** have been recently introduced in Fonderie Ariotti's business context, strengthening the security and reliability of our internal processes. In the meantime, an **awareness-raising** policy towards our **suppliers** has been implemented, focusing on **safety, environment** and **data protection**. This proactive strategy reveals the persistent commitment of the company to guarantee **high** and **sustainable** standards in all its activities, promoting a business culture aiming at responsibility and global protection.



### **4.4** Fonderie Ariotti's group Investments

INVESTMENTS	2022 € AMOUNT	2023 € AMOUNT
Software and other intangible assets	119.578	69.906
Land and buildings	255.975	246.372
Plant and equipment	1.004.053	1.008.234
Commercial and industrial equipment	217.264	198.835
Other goods	218.852	302.948
TOTAL	1.815.722	1.826.295

Investments are completely self-financed, without recourse to bank loan.



### 4.5 International score

The international risk score assigned to our company by Credit Safe, a commercial information provider, corresponds to **B**, which means **HIGH RELIABILITY**.

Risk score	International score	Credit limit	Status	Number of protested bills	Amount of protested bills	
68	В	€615.000	Attiva			

Trend of Payment

Fonderie Ariotti thanks everyone committed in this Sustainability Report!

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